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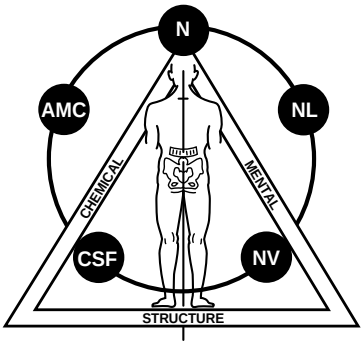

Message From the Chairman

Dr. Thomas Rogowskey

The members of the International College of Applied Kinesiology®-U.S.A. are fortunate to share their insights, concepts and research through the papers presented in this issue of the Proceedings. The ICAK-U.S.A. continues to thrive as an "Arena of Ideas" through which members have the opportunity to present their observations and research results. These published works document the first steps toward the furtherance and development of the authors' hypotheses, concepts and procedural techniques. We invite all members to participate in this endeavor in the future.

Congratulations to all of our contributors. And a special thanks to Drs. Mark Duckwall, John Heidrich and Rebecca Hartle for all of their help during the review process. We look forward to seeing you at the Annual Meeting, June 11-14, 1998 in Washington, D.C.

Introduction

This fortieth collection of papers from members of the International College of Applied Kinesiology®-U.S.A. contains 29 papers by 20 authors. The papers will be presented by the authors to the general membership at the Annual Meeting of ICAK-U.S.A. in Washington, D.C., June 11-14, 1998. The authors welcome comments and further ideas on their findings. You may talk with them at the meeting or write them directly; addresses are given in the Table of Contents.

The manuscripts are published by ICAK-U.S.A. as presented by the authors. There has been no effort to edit them in any way; however, they have been reviewed by the Publications Committee for originality and to determine that they follow the "Instructions to Authors" published by the ICAK-U.S.A. The primary purpose of the ICAK-U.S.A. in publishing the Proceedings is to provide an interchange of ideas to stimulate improved examination and therapeutic methods in applied kinesiology.

It should be understood that the procedures presented in these papers are not to be construed as a single method of diagnosis or treatment. The ICAK-U.S.A. expects applied kinesiology to be used by physicians licensed to be primary health care providers as an adjunct to their standard methods of diagnosis and treatment.

There are three divisions of the Proceedings of the Annual Meeting of the International College of Applied Kinesiology®-U.S.A. Division I consists of papers for members' information. Division II contains papers inviting constructive comments to be published in future editions of the Proceedings. Division III is for constructive comments on papers published in Division II and for subjects that might be included in "Letters to the Editor" of a refereed journal. Papers will be put in Division I or II at the author's request. It is expected that authors will choose Division I for papers such as anecdotal case reports, thought-provoking new ideas that have not been researched, and other types of papers that are for the membership's general information. It is expected that Division II will include papers that have a research design, or those the author has thoroughly studied and worked with and believes to be a viable approach of examination and/or treatment. Studies to test methods developed by others, often called validation studies, fit well here. This area also lends itself to editorial-type comments about the practice of applied kinesiology and its procedures. Division III is somewhat similar to the "Letters to the Editor" section of refereed journals. It provides a forum for members to comment on research design or other factors in papers previously presented. Its purpose is for us to improve the quality of our presentations and, in some cases, to provide rebuttal to presented material. Comments on papers will only be published in this area if the paper was presented in Division II inviting constructive criticism.

Neither the International College of Applied Kinesiology®-U.S.A., its Executive Board, nor the membership, nor the International Board of Examiners, International College of Applied Kinesiology, necessarily endorses, approves of, or vouches for the originality or authenticity of any statements of fact or opinion in these papers. The opinions and positions stated are those of the authors and not by act of publication necessarily those of the International College of Applied Kinesiology®-U.S.A., the Executive Board or membership of the International College of Applied Kinesiology®-U.S.A., or the International Board of Examiners, International College of Applied Kinesiology.

Instructions to Authors Proceedings of the ICAK-U.S.A.

Manuscripts are reviewed for format, technical content, originality, and quality for reproduction. There is no review for authenticity of material.

The ICAK-U.S.A. recognizes that the usual procedure for selection of papers in the scientific community is a blind review. However, the purpose of The Proceedings of the ICAK-U.S.A. is to stimulate creative thinking and critical review among its members. These papers are distributed only to the members of the ICAK-U.S.A. for general evaluation, and for the members to put into perspective the validity of the described approaches. The purpose is to put before the membership primary observations that may lead to scientific investigations, new areas of research, and in-depth study, inspiring progress in the field of applied kinesiology.

Statements and opinions expressed in the articles and communications in The Proceedings of the ICAK-U.S.A. are those of the author(s); the editor(s) and the ICAK-U.S.A. disclaim any responsibility or liability for such material.

The current ICAK-U.S.A. Status Statement is published with The Proceedings of the ICAK-U.S.A. It is recommended that procedures presented in papers conform to the Status Statement; papers that do not will be published and identified in the table of contents as failing to conform. It is recommended that examination or treatment procedures that fail to conform to the ICAK-U.S.A. Status Statement be supported by statistical studies, literary references, and/or any other data supporting the procedure.

Papers are published in three divisions: I) papers intended by the author as informative to the membership and not inviting critical review; II) papers inviting critical and constructive comments from the membership in order to improve the total value of the paper. Comments may be made on such items as research design, methods presented, clarity of presentation, and practical use in a clinical setting. The author must include with his/her paper written indication of desire for the paper to be included in the section inviting critical review or for informative purposes. III) The third section is for review comments on papers published in Division II. These papers are for constructive review. Opinions or editorials with negative connotations only may be rejected.

Manuscripts are accepted by the ICAK-U.S.A. for consideration to publish with the understanding that they represent original unpublished work. Acceptance of the manuscript by the ICAK-U.S.A. does not necessarily imply acceptance for publishing. The author may appeal any paper rejected to a committee composed of members of the Publications and Research Advisory Committees. The decision of this committee on publishing the paper will be final.

Following are the current requirements for papers submitted for publication.

1) The paper must be an original work and deal specifically with applied kinesiology examination and/or treatment techniques. Various techniques may be discussed if they are correlated with applied kinesiology manual muscle testing examination.

2) Papers that do not include a clearly labeled Abstract, Introduction, Discussion, Conclusion and Reference List will be returned to the author for revision. Papers that discuss the outcome of a research study must also include separate sections labeled Materials/Methods and Results. Papers that describe clinical procedures or protocols should include a concise step-by-step outline or flow chart for each procedure described in the paper. The text of the paper, regardless of the subject material, should include numbered references. Note that the standard format for journal and textbook references is reviewed at the conclusion of this article.

3) Quotations must be short, usually no longer than three lines, and should be referenced, giving credit to the original author. All referenced articles, books, or persons other than the author must be properly referenced at the end of the paper. (See examples listed below.)

4) Any quotation of copyrighted material that is longer than that noted above must be accompanied by permission to print from the author and/or copyright holder. The permission must specifically note that the material is to be printed in The Proceedings of the ICAK-U.S.A., copyrighted by the International College of Applied Kinesiology®-U.S.A.

5) Any material that is copyrighted by the author must include permission for the ICAK-U.S.A. to reproduce the paper and any accompanying graphs, illustrations, etc., at any time and in any manner that the ICAK-U.S.A. so chooses.

6) All artwork must be original, or permission to print must be obtained from the author or artist, refer-enced in the article, and a copy of the authorization sent along with the article at the time of submission for printing in The Proceedings of the ICAK-U.S.A. Photographs must be original black-and-white glossy prints. Do not scan photographs into your computer file.

7) Terminology or procedures that might be unfamiliar to some readers should be referenced at the end of the paper. Avoid using nontechnical terms such as, “blow-out,” “cleared,” “fixed,” or “TL’ed.” Papers that contain unsupported and unsubstantiated claims for efficacy of the therapy will be returned to the author.

8) The publication standards for the healthcare professions typically call for more details for the following types of papers:

Research Studies - An investigation into the clinical efficacy of diagnostic and therapeutic procedures.

Case Reports - An account of the diagnosis, treatment and outcome of an unusual or otherwise significant case.

Case Studies - A comparative assessment of a series of related cases.

Clinical Procedures - Informative papers that review the procedural aspects of diagnostic or therapeutic approach - clinical protocols.

Hypothesis - A theory that explains a set of facts and presents a basis for further investigation.

Clinical Observations - Unique observations that involve manual/mechanical muscle testing and related procedures.

Commentary - Editorial-like, in-depth essays on matters relating to the clinical, professional, educational, and/or legal aspects of applied kinesiology.

Critical Review - A critique or commentary on a paper that previously appeared in Division II of The Proceedings.

With the exception of a Commentary or a Critical Review, all papers must conform to the following format. Note that each section must be clearly labeled.

Title & Author's Name

Abstract: A brief description of the purpose of the study, basic procedures, main findings and principle conclusions.

Introduction: Summarize the rationale for the study or observation. Give background material when available and introduce the reader to what was done and why.

Materials and Methods: (for research studies) Describe the subjects, and identify the methods and procedures. Present sufficient detail to allow others to reproduce the procedures for comparison of results.

Results: (for research studies) Present results in a logical sequence and summarize the important observations. Include appropriate tables and illustrations.

Discussion: Discuss the implications of the findings and any limitations. Emphasize any new and important aspects of the findings. Discuss how the findings may relate to other relevant studies or observations.

Conclusions: Unqualified conclusions and statements not directly supported by data or observation must be avoided. Make any recommendations that are appropriate and relevant to the subject matter.

Summary of Procedures: Step-by-Step or Flow-Chart style description of diagnostic and therapeutic procedures described in the paper.

References: The numbered references that correspond to the text of the paper.

For journal articles: Author(s), Title in Quote " ," Name of Journal, Vol., No., (Month/Year).

e.g. Schmitt, Jr., Walter H., "Fundamentals of Fatty Acid Metabolism - Part II," The Digest of Chiropractic Economics, Vol. 28, No. 2, (Sept.-Oct./1985).

For textbooks: Authors(s), Title, (City of Publication, Name of Publisher, Copyright Date).

e.g. Walther, David S., Applied Kinesiology, Volume I - Basic Procedures and Muscle Testing (Pueblo, CO., Systems DC, 1981).

9) Authors are required to send articles to the Central Office on computer disk, IBM PC compatible format. (Articles not submitted on disk will be keyed at the author's expense of $5/page.) Disks should be sent to the Central Office in a padded envelope with the marking "Magnetic Computer Disk Enclosed" to ensure safe delivery. Disk labels must include type of software, author and document name. They must also provide a complete copy including all illustrations, flow charts and diagrams printed on 81/2 x 11 inch letter-sized paper. Papers without graphics, tables, and/or flowcharts may be attached as a word document on the official ICAK Email system.

10) Authors may only use text programs (i.e. Microsoft Word, WordStar, WordPerfect, MacWrite, etc.) to submit a paper on computer disk, but may use either IBM/DOS or Macintosh programs and diskettes. (Documents saved in a "page-layout" program are not acceptable.) The document for submission must be saved in a "text-only" format. All headers, footers and page numbers should be removed as should all italics, underlining, bold-face and any other special font formatting. If special formatting is required to preserve the tone of the paper, it should be present in the paper copy sent with the disk and it will be re-applied after the paper has been incorporated into The Proceedings of the ICAK-U.S.A.

11) Any computer-generated artwork to be included in the paper must be removed from the document before it is saved in the "text only" format. Artwork must be saved separately in either IBM/DOS or Macintosh formats as EPS, EPSF, GIF, TIF, TIFF, PIC OR PICT file types. The paper copy of the submission must include a print of the complete artwork and its correct placement. The artwork will be re-inserted into the paper in approximately the same location in the document, where space allows.

The articles to be published should be sent in duplicate (the original and one copy), to ICAK-U.S.A., 6405 Metcalf Ave., Ste 503, Shawnee Mission, KS 66202-3929, (913)384-5336.

Applied Kinesiology Status Statement

International College of Applied Kinesiology®-U.S.A.

The International College of Applied Kinesiology®-U.S.A. provides a clinical and academic arena for investigating, substantiating, and propagating AK findings and concepts pertinent to the relationships between structural, chemical, and mental factors in health and disease and the relationship between structural faults and the disruption of homeostasis exhibited in functional illness.

AK is an interdisciplinary approach to health care which draws together the core elements of the complementary therapies, creating a more unified approach to the diagnosis and treatment of functional illness. AK uses functional assessment measures such as posture and gait analysis, manual muscle testing as functional neurologic evaluation, range of motion, static palpation, and motion analysis. These assessments are used in conjunction with standard methods of diagnosis, such as clinical history, physical examination findings, laboratory tests, and instrumentation to develop a clinical impression of the unique physiologic condition of each patient, including an impression of the patient's functional physiologic status. When appropriate, this clinical impression is used as a guide to the application of conservative physiologic therapeutics.

The practice of applied kinesiology requires that it be used in conjunction with other standard diagnostic methods by professionals trained in clinical diagnosis. As such, the use of applied kinesiology or its component assessment procedures is appropriate only to individuals licensed to perform those procedures.

The origin of contemporary applied kinesiology is traced to 1964 when George G. Goodheart, Jr., D.C., first observed that in the absence of congenital or pathologic anomaly, postural distortion is often associated with muscles that fail to meet the demands of muscle tests designed to maximally isolate specific muscles. He observed that tender nodules were frequently palpable within the origin and/or insertion of the tested muscle. Digital manipulation of these areas of apparent muscle dysfunction improved both postural balance and the outcome of manual muscle tests. Goodheart and others have since observed that many conservative treatment methods improve neuromuscular function as perceived by manual muscle testing. These treatment methods have become the fundamental applied kinesiology approach to therapy. Included in the AK approach are specific joint manipulation or mobilization, various myofascial therapies, cranial techniques, meridian therapy, clinical nutrition, dietary management, and various reflex procedures. With expanding investigation there has been continued amplification and modification of the treatment procedures. Although many treatment techniques incorporated into applied kinesiology were pre-existing, many new methods have been developed within the discipline itself.

Often the indication of dysfunction is the failure of a muscle to perform properly during the manual muscle test. This may be due to improper facilitation or neuromuscular inhibition. In theory some of the proposed etiologies for the muscle dysfunction are as follows:

- Myofascial dysfunction (micro avulsion and proprioceptive dysfunction)
- Peripheral nerve entrapment
- Spinal segmental facilitation and deafferentation

- Neurologic disorganization
- Viscerosomatic relationships (aberrant autonomic reflexes)
- Nutritional inadequacy
- Toxic chemical influences
- Dysfunction in the production and circulation of cerebrospinal fluid
- Adverse mechanical tension in the meningeal membranes
- Meridian system imbalance
- Lymphatic and vascular impairment

On the basis of response to therapy, it appears that in some of these conditions the primary neuromuscular dysfunction is due to deafferentation, the loss of normal sensory stimulation of neurons due to functional interruption of afferent receptors. It may occur under many circumstances, but is best understood by the concept that with abnormal joint function (subluxation or fixation) the aberrant movement causes improper stimulation of the local joint and muscle receptors. This changes the transmission from these receptors through the peripheral nerves to the spinal cord, brainstem, cerebellum, cortex, and then to the effectors from their normally-expected stimulation. Symptoms of deafferentation arise from numerous levels such as motor, sensory, autonomic, and consciousness, or from anywhere throughout the neuraxis.

Applied kinesiology interactive assessment procedures represent a form of functional biomechanical and functional neurologic evaluation. The term "functional biomechanics" refers to the clinical assessment of posture, organized motion such as in gait, and ranges of motion. Muscle testing readily enters into the assessment of postural distortion, gait impairment, and altered range of motion. During a functional neurologic evaluation, muscle tests are used to monitor the physiologic response to a physical, chemical, or mental stimulus. The observed response is correlated with clinical history and physical exam findings and, as indicated, with laboratory tests and any other appropriate standard diagnostic methods. Applied kinesiology procedures are not intended to be used as a single method of diagnosis. Applied kinesiology examination should enhance standard diagnosis, not replace it.

In clinical practice the following stimuli are among those which have been observed to alter the outcome of a manual muscle test:

- Transient directional force applied to the spine, pelvis, cranium, and extremities
- Stretching muscle, joint, ligament, and tendon
- The patient's digital contact over the skin of a suspect area of dysfunction termed therapy localization
- Repetitive contraction of muscle or motion of a joint
- Stimulation of the olfactory receptors by fumes of a chemical substance
- Gustatory stimulation, usually by nutritional material
- A phase of diaphragmatic respiration
- The patient's mental visualization of an emotional, motor, or sensory stressor activity
- Response to other sensory stimuli such as touch, nociceptor, hot, cold, visual, auditory, and vestibular afferentation

Manual muscle tests evaluate the ability of the nervous system to adapt the muscle to meet the changing pressure of the examiner's test. This requires that the examiner be trained in the anatomy, physiology, and neurology of muscle function. The action of the muscle being tested, as well as the role of synergistic muscles, must be understood. Manual muscle testing is both a science and an art. To achieve accurate results, muscle tests must be performed according to a precise testing protocol. The following factors must be carefully considered when testing muscles in clinical and research settings

- Proper positioning so the test muscle is the prime mover
- Adequate stabilization of regional anatomy
- Observation of the manner in which the patient or subject assumes and maintains the test position
- Observation of the manner in which the patient or subject performs the test
- Consistent timing, pressure, and position
- Avoidance of preconceived impressions regarding the test outcome
- Nonpainful contacts — nonpainful execution of the test
- Contraindications due to age, debilitative disease, acute pain, and local pathology or inflammation

In applied kinesiology a close clinical association has been observed between specific muscle dysfunction and related organ or gland dysfunction. This viscerosomatic relationship is but one of the many sources of muscle weakness. Placed into perspective and properly correlated with other diagnostic input, it gives the physician an indication of the organs or glands to consider as possible sources of health problems. In standard diagnosis, body language such as paleness, fatigue, and lack of color in the capillaries and arterioles of the internal surface of the lower eyelid gives the physician an indication that anemia can be present. A diagnosis of anemia is only justified by laboratory analysis of the patient's blood. In a similar manner, the muscle-organ/gland association and other considerations in applied kinesiology give indication for further examination to confirm or rule out an association in the particular case being studied. It is the physician's total diagnostic work-up that determines the final diagnosis.

An applied kinesiology-based examination and therapy are of great value in the management of common functional health problems when used in conjunction with information obtained from a functional interpretation of the clinical history, physical and laboratory examinations and from instrumentation. Applied kinesiology helps the physician understand functional symptomatic complexes. In assessing a patient's status, it is important to understand any pathologic states or processes that may be present prior to instituting a form of therapy for what appears to be functional health problem.

Applied kinesiology-based procedures are administered to achieve the following examination and therapeutic goals:

- Provide an interactive assessment of the functional health status of an individual which is not equipment intensive but does emphasize the importance of correlating findings with standard diagnostic procedures
- Restore postural balance, correct gait impairment, improve range of motion
- Restore normal afferentation to achieve proper neurologic control and/or organization of body function
- Achieve homeostasis of endocrine, immune, digestive, and other visceral function
- Intervene earlier in degenerative processes to prevent or delay the onset of frank pathologic processes

When properly performed, applied kinesiology can provide valuable insights into physiologic dysfunctions; however, many individuals have developed methods that use muscle testing (and related procedures) in a manner inconsistent with the approach advocated by the International College of Applied Kinesiology®-U.S.A. Clearly the utilization of muscle testing and other AK procedures does not necessarily equate with the practice of applied kinesiology as defined by the ICAK-U.S.A.

There are both lay persons and professionals who use a form of manual muscle testing without the necessary expertise to perform specific and accurate tests. Some fail to coordinate the muscle testing findings with other standard diagnostic procedures. These may be sources of error that could lead to misinterpretation of the condition present, and thus to improper treatment or failure to treat the appropriate condition. For these reasons the International College of Applied Kinesiology®-U.S.A. defines the practice of applied kinesiology as limited to health care professionals licensed to diagnose.

Approved by the Executive Board of the International College of Applied Kinesiology®-U.S.A., June 16, 1992.

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***Does not conform to the ICAK Status Statement

Division I

Informative

Neurological Disorganization

Michel Barras, D.C.

Abstract

Insights on the body's general neurological organization are given together with the pathological changes that can occur. Based on two studies, a distinction of two different types of neurological disorganization is proposed, their different mechanisms and clinical consequences are described together with a new corrective procedure.

Key Words: gait, neurological organization, neurological disorganization, applied kinesiology, chiropractic

Introduction

Proper therapy should only rely upon proper diagnosis (not the "educated guess"). In order to achieve this, it is fundamental to get as much of an accurate understanding of human biomechanics as possible. The purpose of this article is to go through updated concepts of the normal general body neurological organization, learn how to recognize it and therefore be able to evaluate any pathological modification, called "neurological disorganization." A population representative research model is used to confirm what seemed for years of personal clinical observations to be true, and to evaluate the general population distribution of basic pathological patterns. This experience suggests a need for a differentiated classification of neurological disorganization based upon the level of the pathological interference, their individual correction procedures being also differenciated.

Neurological Organization

The term of neurological organization globally includes all the coordinate activities of the central nervous system and therefore all basic reflexes. Physiologically it is composed of three elements, the Central Nervous System (CNS), the Meningeal Membranes and the Axial Skeleton.

The CNS is considered in its conventional way and does not need to be developed here. It is however of importance to view the global aspect of the axial skeleton and some of its specific properties (piezoelectric phenomenon), remembering that it is linked mechanically and energetically to the CNS by the specific properties of the meningeal membrane system or "Core Link," all three constituting the Cranio-Sacral Primary Respiratory System, as remarkably described by Crisera.[1] The proper understanding of this relationship is fundamental and can be grossly summerized as follows:

> the different layers of the meningeal membrane system have rather specific relationships, the pia mater (the inner membrane) being intimately associated with the nervous tissues, the arachnoid mater (the middle layer) with the cerebrospinal fluid but also mechanically with the other two layers through connective tissue fibers and trabeculae, and the dura mater (the outer membrane) with the axial skeleton through its different attachments. These attachments account for the mechanical relationship.

The axial skeleton and its individual components (cranium, vertebrae, sacrum and pelvis) has electromagnetic properties which interact with the CNS with the help of the meningeal membrane system. A very important stimulation is therefore accomplished through general motion, mainly gait, mechanically (dural atttachments) and energetically (piezoelectric phenomenon).

Motion of the extremities, legs and arms, has its biggest significance during locomotion, or gait. In human beings, it consists of a contralateral activity, meaning that when the left leg moves forward, the right arm (contralateral) will synchronously move forward, while the right leg and the left arm will move backward. This is termed a "contralateral gait." This contralateral synchronization is true for forward motion, but is also true for backward and sideways, together with more complex motions such as internal and external rotations as demonstrated by Goodheart[2] and Walther.[3, 4]

Neurological Disorganization

A major concept has been developed by Goodheart & Walther & C. Ferreri,[5] which is the observable modification or loss of gait coordination, termed "neurological disorganization." The original observation was made by Delacato[6] with extreme cases of dys-synchronizations, one manifestation of which was homolateral locomotion (right leg and arm forward together with left leg and arm backward). This phenomenon has so far been attributed to dural torque or coaxial energetic torque making interference on the Cranio-Sacral Primary Respiratory System.

Study

We did a recent study (the complete parameters will be the object of a separate publication) based on 56 children, age 10 to 11, same primary public school (french part of Switzerland), 3 different classes. Among others, the purpose was to determine in that representative population the incidence of the so-called neurological disorganization (homolateral static gait organization).

Procedure: general forearm flexor muscles were manually evaluated for strength with the feet in a neutral position.

- the right forearm flexor muscles were evaluated with the left foot forward on the opposite side (contralateral static gait position).
- the left forearm flexor muscles were evaluated with the same side left foot forward (homolateral static gait position).
- the left forearm flexor muscles were evaluated with the right foot forward on the opposite side (contralateral static gait position).
- the right forearm flexor muscles were evaluated with the same side right foot forward (homolateral static gait position).

Temporary correction, as described by Walther,[3, 4] was made on every child on which was found one sign or another of switching (further publication). Results were recorded.

Results:

- 18 out of 56 (32%), showed homolateral tonicity (versus normal contralateral).
- only one (1) of this group of 18 showed one sign or another of switching.
- 23 of the contralateral group (38 children) showed one sign or another of switching.
- this group of 23 was temporarily corrected for switching then reevaluated as having all 23 homolateral tonicity (100%).
- the addition of the first group (homolateral in the clear) and the second group (homolateral after temporary correction of the switching) is 41 children or 73.2% of the total population of 56.
- in addition to this last number, it is estimated by the school authorities that 2 to 3% of that age population is unable to attend regular school and is already attending specialized institutions.

This is actually a second study, the first one having been made in a private "finishing school" of Switzerland on the same model. We do consider that the results are not representative of a general population, the sample being of 66 girls, aged 17 to 19, of 11 different nationalities, being mainly there to learn french (and accessorily not having any other goal for the year). The results are as follows: 39% homolateral (in the clear) and none of this group showed one sign or another of switching; 100% homolateral after temporary switching correction (32 out of 32); 87.9% of the 66 girls were homolateral.

Conclusions of the two studies:

- by the age of 10 to 11, over 75% of the population will show observable signs of neurological disorganization.
- in the presence of a homolateral gait in the clear, there is no sign of switching (homolateral gait may hide switching).
- in the absence of previous treatment, temporary correction of switching will uncover a homolateral gait (100%) (switching is hiding homolateral gait).
- homolateral gait dysfunction and switching are two separate entities.

Discussion

Clinical evidences and research bring the need to classify neurological disorganization in relation to two levels of interference:

1) Cranial level (or homolateral neurological disorganization)

The cranial level of interference will manifest itself as a consequence on the general gait mechanism and can be clinically observed as such by a homolateral tonicity of the postural muscles when the body is in a static gait position.

It is presumed that a cranial trauma at the wrong place, wrong speed and wrong direction, is creating a mechanical wave which is partially taken and rebounded by the cerebral falx (in the saggital plane) and the

tentorium cerebelli (in the transverse plane). The consequent pulls will create an important mechanical stress locally on the bone at the convergence of the different force vectors, therefore creating a piezoelectric effect under the form of a holographic bone fault (Goodheart[7]). We will find four (4) bone locations, two of them anteriorly on the right and left portions of the frontal bone, and for the other two on the right and left portions of the occipital bone.

Clinically (the subject cancelling findings by contacting the involved cranial area with one hand), the left frontal together with the right occipital faults are concerned with forward motion and the right frontal together with the left occipital faults are concerned with backward motion.

Corrective procedure is therefore very simple and fast and will show 100% immediate change in the gait from homolateral to contralateral. This change will stay forever unless there is a new head trauma, as history will always reveal it. We can therefore say that a **homolateral neurological disorganization is always and only the consequence of a cranial trauma.** The incidence in the population also shows that in this case we do not have the spontaneous capacity of self recuperation.

This mechanical impact on the skull also makes us think of a probable secondary implication of the cranio-cervical junction in every case.

2)Spinal level: Atlas/Occiput - **L5/**Category I **level (or Switching neurological disorganization)**

The spinal level of interference will mainly manifest itself as an imprevisible neuromuscular response to a given stimulus.

Crisera and others, and before them B.J. Palmer,[8] have stated that this spinal level is not only concerned with biomechanics, but also with bioenergetics. The crucial location of the Atlas in relation to the spinal cord and the brain stem puts it in the front line for interference with the coaxial core through piezoelectric phenomenon. The clinical consequences of these interferences are numerous and we will voluntarily limit ourselves to the aspect of muscle neurophysiological disponibility evaluation (muscle test) and make the remark that too often the lack of constant findings by this mean is due to such a type of interference.

L5 level was associated with the Atlas due to its “Lovett relationship” (they rotate in a synchronous manner in solidarity). Any interference with the proper mechanics of these two levels will therefore need to be corrected, anywhere from the foot to the cranium, in order to change this dysfunction. It is obviously a difficult task and only a rigorous systematic chiropractic mechanical approach (Leaf[9]) will allow it (further publication).

Conclusion

A basic comprehension of the underlying pathology is necessary to determine the means of correction and this allows a new definitive corrective procedure to be elaborated. Reliable population representative studies show a distribution of neurological disorganization much more important than what would be expected. Its wide population distribution (over 75% of the population by the age of 10 to 11), increasing with age as long as it is “acquired,” has to question the accuracy of a muscle neurophysiological disponibility evaluation (muscle test), as generally used in some fields, and corrective procedures (definitive and temporary) should be used before any attempt to a diagnostic or therapeutic conclusion. The subdivision into a cranial level and a spinal level should be appropriate in the sense that it is based on the etiology which in turn implies specific corrective procedures.

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Holographic Scanning:

An Expansive Diagnostic Adjunct & Rapid Screening Technique

Brent W. Davis, D.C.

Abstract

Holographic Scanning (H.S.) is a rapid diagnostic screening technique to enable more precise selection of therapeutic substances (e.g. herbal and homeopathic products) and more efficient administration of A.K. and other physiological therapeutics.

Introduction

When applied kinesiology's Triad of Health model emerged in 1970, it was revolutionary in its holism, and was way ahead of its time. It initiated progressive thinking that would have far reaching influence. As traditional Chinese medicine and homeopathy filtered into the consciousness of health professionals later in the seventies; as ayurvedic medicine began to gain recognition in the eighties; and as quantum healing/ "energy" medicine, Upledger body work, and German models of biological medicine emerged in the nineties, the remarkable accomplishments of A.K. no longer stood out as dramatically as they once did.

As I discuss practice techniques with friends and colleagues who are advanced level practitioners and who use A.K., it appears that an updated model of health has evolved which looks something like the schematic I recently created for an instructional video.[1] (*See Figure 1.*)

There are two significant areas where the H.S. model differs from the Triad of Health and Five Factors models of institutional A.K. First, the doctor and patient are represented as intimately connected. Quantum medicine and most ancient healing systems maintain that the doctor's individuality and intention to heal pervade every procedure he performs and inseparably influence the procedure itself (the observer effect). This stands in opposition to the science of Cartesian dualism (the science by which AK seeks to be judged) which demands that the actor be excluded from the operating frame of reference when he or she is an uncontrollable variable (i.e. human). Second, the lower part of the schematic deals largely with pre-pathological or pathological issues.

The modern applied kinesiologist may find himself on the horns of a dilemma. If he wants to see AK gain orthodox scientific credibility, he should practice in accord with the status statement definition of applied kinesiology as a "unified approach to the diagnosis and treatment of functional illness." If he wants to address the needs of many patients seeking holistic care who suffer from pre-pathological or pathological conditions, he should probably set aside AK in favor of disciplines such as herbology, homeopathy, biological medicine, and others, which are primarily oriented to deal with those maladies In actual practice what I have observed is that diligent applied kinesiology takes so much effort to master that the accomplished practitioner is unlikely to set it aside for the practice of another distinct discipline. What he is more likely to do is redefine other disciplines in the language of AK and absorb some of their healing techniques. Sometimes this can lead to questionably effective therapy. (I have seen that especially with the superficial use of homeopathic remedies.) Further, it is my belief that what appear to be functional problems are quite

Insert Figure 1

often pre-pathological or pathological conditions that have not been sufficiently understood. When that is so, such conditions may create "functional" symptoms as the obvious part of their manifestation, and neurological compensations on a deeper level to circumvent the hidden pathological focus. Humanity is increasingly awash in a sea of unnatural forces, of every conceivable description, which strain and often break the limits of functional adaptability. This is especially true of the hapless citizen who is not trained in high level nutrition, principles of environmental medicine, or spiritual discipline of the mind.

The matter of potentially erroneous results in AK nutritional practice is addressed in Dr. Walter Schmitt's paper, "Why A Muscle Strengthening Response Is Not Enough."[2] In this paper, Dr. Schmitt writes, "John Bandy and others who have used leg length as a confirmatory test for nutrient evaluation have observed that many times a muscle test will strengthen with a nutritional stimulus, but the same nutrient will result in an increased differential of leg length measurement. They have not relied solely on clinical indications and a muscle strengthening response, but also required a normalization of leg length before considering supplementation of a nutrient." In the late eighties I came to a conclusion similar to Dr. Bandy's and decided then that I would have to find some confirmatory procedure for herbal and nutrient selection in addition to the nutrient/lingual pathway which can alter muscle strength.

Dr. Schmitt's paper was coherent and relevant as always and reminded me that classical AK practitioners who are leaders of the discipline must be intellectually rigorous linear thinkers. For the last twenty years that I have been immersed in the study of herbal ethno medicine and ancient belief systems regarding healing, I have seen again and again that native medicine often succeeds by non linear means. So in the creation of holographic scanning I arrived at a very simple hybrid technique which allows me to more efficiently access structurally based AK (for the correction of functional problems) while on the same case I am concurrently using other modalities designed for treating pre-pathological and pathological conditions.

Methods

The mechanical aspect of H.S. is a type of leg length check observed in other chiropractic techniques, and is unremarkable. What is unique and valuable about H.S. is its conceptual framework, which is critical to its success.[3]

Holographic scanning uses the doctor's mind plus the patient's innate intelligence or super consciousness as a scanning device and the patient's body as a read out. It is a skill developed with concentration. It is not a psychic technique.

Leg length changes in the patient occur in response to the doctor's mental projection of a question and/or image; or occasionally in response to placing herbs, nutrients, etc. on the body. When the mental imaging/questioning process is mastered, placing of substances on the body is normally unnecessary (unless one is testing an unknown substance for general affinity).

Holographic scanning is a four step procedure which requires:

1. The creation of a still space... a sacred place where there is the possibility of truth and knowledge to manifest within a magnetic domain embracing the doctor and the patient together as one. In this domain, the creative super intelligence residing in the patient can be questioned. If the motive is pure, and if the patient is in a relaxed, trusting state, that intelligence will respond accurately with an answer (if the question is unambiguous).

   Answers can be elicited most easily in a yes/no response by using leg length changes of the patient.

Right leg shortening is generally a yes response; left leg shortening generally a no. Information can also be received by perceiving changes in the pulse upon questioning, but that has more possibility for errors of interpretation due to its subtleness.

2. Solid intellectual knowledge at least, and preferably as well, practical experience on the part of the doctor in the domain which he is investigating.
3. The doctor's renouncing, temporarily, the satisfaction and pride he takes in his intellectual mastery so that he can perceive an answer from a Higher Source.
4. Re-entry into the intellectual/clinical framework in which the doctor operates for rational assessment of the answer. Does it make sense considering the patient's history, exam, and responses to previous therapy?

Discussion

Because the human body is so marvelously adaptive, we can be led far astray from the true cause of illness if we get into the habit of trying to fix every metabolically induced muscle weakness encountered during an exam. (We must find what the body indicates is the priority needing correction.) Even worse, in my opinion, might be the administration of 30X homeopathic remedies on the simple basis of abolishing an allergic reflex, without understanding the totality of the remedy and its sphere of action. On another side of the health model, it is quite easy when dealing with matters of nutrition and molecular medicine to neglect an important structural correction on a given visit. To guard against that, on nearly all patient visits, I rapidly screen for the structural faults listed in *Figure 2*, regardless of the primary focus of that visit. This is possible because it can be done so quickly with H.S.

Depending on the chief complaint, fitness, and age of the patient, this simple structural screen performed with manual AK procedures could easily take over 10 minutes excluding corrections. Holographic scanning of the same regions, by means of visualized tests, projected onto the super consciousness of the patient for a compare/contrast yes or no response, can be accomplished in about four minutes. One does not have to move from the foot of the exam table and the patient is completely relaxed. **There is one important caveat. This mental questioning procedure is prone to error unless the operator has learned the challenges and AK procedures by physically performing them and establishing the neural pathways of learning. It is the same in all area we want to speedily explore in H.S. In order to succeed with holographic scanning, we have to have a clear idea of where we want to take the questioning of the patient's innate intelligence based upon rational and knowledgeable clinical experience. Then we step aside from the intellect for just a bit to let the bodymind of the patient confirm if we are on track.**

When I obtain a positive finding, I often corroborate it by conventional AK testing. If I find four positive structural faults, for example, I use H.S. to find out which ones the body wants to have corrected, AND IN WHICH ORDER. In this example, if three faults needed to be corrected, there are three factorial (3x2x1=6) different ways that could be accomplished. Manually testing all those combinations could be quite time consuming.

The greatest benefit of H.S. is that it can provide information to us in areas that would be difficult, extremely time consuming, or in some cases impossible to access by other means. This can be illustrated by case examples.

Insert Figure 2

I do not have an X-ray unit in my office. When necessary, I refer to the closest radiology facility which is in a hospital 30 miles away. A Mennonite farmer brought his 18 year old daughter to me to "fix her sore back." She had been treated by other chiropractors in the past with short-lived therapeutic results. These doctors apparently had X-rayed her back, but never her hips. The lumbosacral and unilateral hip pain always returned in a couple of days after manipulation. Due to the fact that Amish and Mennonite peoples often suffer from malnutrition and poor hygiene, I immediately suspected congenital hip dysplasia or Legg Calve Perthes' disease. The first thing I did was to visualize and characterize with H.S. both femoral heads and acetabuli. In about two minutes I found a marked unilateral flattening of the femoral head, shortening of the femoral neck, and substantial deformity of the acetabulum. I had been spared the time and effort of initiating AK exam. The father was somewhat startled when I stood up quickly, indicating that I would not treat this condition because I felt it was an orthopedic referral. I adamantly insisted to this very stubborn man that he invest in a driver to take his daughter the 30 miles to radiology. Since I did not manage the case any further I did not see the radiology report, but I did see the films. The deformity visualized on X-ray closely matched what I had obtained by H.S.

An off-shore oil rig worker in another state sought my services to try to cure his incapacitating monthly headaches that had been going on for two decades. During his first and only office visit necessary, with H.S. I located a small dural lesion in the lumbar spine which upon further questioning was the site of barbarous needle insertion in a badly executed myelogram. I was able to quickly determine the homeopathic remedy indicated for the case, and that it had to be rubbed on topically over the lesion. I found the precise potency and posology to effect a cure.

I have achieved positive results in scanning the stomach and duodenum (finding beginning and advanced peptic ulcers), and scanning many other areas that are generally diagnostically inaccessible to the average AK practitioner. It is also very useful to know when cases probably won't respond. From a therapeutic standpoint, I use H.S. to rapidly screen a variety of herbs and nutrients to find the ones most suited to the case.[4] I corroborate my findings by lingual testing if I am uncertain of my H.S. findings, and sometime for the purpose of demonstrating to the patient an immediate positive physiological response.

I rarely discuss in detail the procedure of H.S. with patients, and never make claims as to what I have found-for obvious reasons. If I had the intention to formally prove the validity of H.S., there are clear ways validation studies could be implemented. However, I have no interest in that at present. My desire is that doctors will prove the validity of H.S. for themselves. It can improve the efficiency of A.K. practice, and help prevent us from treating problems as functional when in reality they are pathological.

The bottom part of *Figure 1* (labeled "Organs/Tissues) schematically outlines aspects which I holographically scan relating to pre-pathological and pathological phenomena. The individual boxes represent many possible conditions, agents, or characteristics as might apply to each case. Due to limitations of length in this paper, it is not appropriate to address this area in detail, but suffice it to say, it is very important. I believe, and experience has demonstrated, that H.S. allows one to find pre-pathological and pathological conditions at early enough stages so that they have a better chance of being reversed by natural therapies, which must generally include some form of skillfully administered herbal or homeopathic medicine.

The impressionable nature of the patient's psyche, which can accelerate an alarming hard diagnostic prognosis into intractable disease, need never be engaged with holographic scanning. The physician has a window of opportunity where he can work quietly, according to his insights, empowered under the influence of grace and serendipity, without disruption and fear from the patient's conscious mind. That opportunity is a sacred trust, and must be handled very responsibly.

Paradigms have emerged in biological medicine[6] (the connective tissue matrix of Pischinger[5]) and in psychoneuroimmunology[7] (the quantum-influenced neuropeptides of the bodymind) which describe the ability of the body to respond profoundly and instantaneously to subtle forces and to thoughts. I feel it will become increasingly important in the near future for us to develop the understanding that we can be both men of medicine and medicine men at the same time.

Conclusion

Holographic scanning is yet another tool which can be utilized in AK practice to improve patient care and increase the productivity and efficiency of each office visit.

References and Notes

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The Cause and Cure of Panic Attacks
An Opinion Paper

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Abstract

This paper suggests that a panic attack is an intellectualized response (conversion hysteria) to internal sensations generated by a catecholamine response (CR) initially, and later, more frequently, provoked by a sudden drop in circulating glucose levels. The physical sensations elicited by fear and anxiety and those elicited by a sudden drop in blood sugar are one and the same, both arising out of the effects of a sudden, extraordinary release of catecholamines.

Introduction

Approximately twenty years ago this writer awoke suddenly at two a.m. in the middle of, what was later to be deduced as a catecholamine surge. I was amazed to find that my heart was pounding wildly and I had a very strong, disagreeable sensation in my abdomen. Later, self-observation revealed a feeling of hunger and the need for food. The disagreeable sensation in the "pit of my stomach" was similar to the sudden sensation one feels when having a near accident such as falling down the stairs, being involved in a fender-bender, being caught speeding, etc. Assessment and analysis of this episode led to the investigations and conclusions resulting in the opinion herein expressed.

Discussion

Physiologically, the sensations arising during a panic attack (PA) are caused by a catecholamine response (CR) to a sudden drop in blood sugar also known as the "fight or flee response."[1] The sudden drop in circulating glucose is more frequently provoked by insulinogenic foods of high glycemic index[2] rather than psychological or other physical factors. Operant conditioning subsequently links the internal sensations with external events, the latter of which can become the provocateurs in later episodes.

The following is an example of the initial onset of PA from a patient history. The patient misses breakfast, catches a quick cup of coffee, nibbles on an apple, goes shopping and sometime later has a panic attack while standing in line at the supermarket. On the day before the attack her schedule had forced an early dinner followed by a high glycemic index food snack at bedtime (rice cake). This amounts to eighteen hours without substantial food intake. Since the first event is triggered while standing in line at the supermarket, on a future occasion the same position, even on a "full stomach" may result in a purely intellectually, rather than chemically, provoked attack due to operant conditioning. In such an event the patient actually talks themself into a PA because of the fear dredged up by the memory of the first PA. After one or several episodes, the patient is usually seen by physicians who fail to even consider blood sugar levels or the diet and who resort to the talk/tranquilizer approach. This teaches the patient to cope with symptoms rather than addressing causes. Those readers overly impressed with such medical approaches to psycholog-

ical/psychiatric disturbances are advised to acquaint themselves with the facts surrounding the early days of psychiatry beginning with Charcot's foolishness relative to hysteria, very clearly described by Szasz in, "The Myth of Mental Illness."[3] Stabilizing blood sugar levels via subluxation correction and proper diet, along with strong moral support, eliminates the syndrome.

Every cell of our body struggles against change in an effort to maintain homeostasis by working on a (more or less) one-molecule-in-one-molecule-out basis. A sudden change in the cellular environment, especially its fuel source, sets off its alarm system. (Homeostasis may by the root cause of man's antipathy to any change not immediately recognized as pleasurable.) Especially relevant in this light is the effect of sudden drops in blood sugar. Every system, every function of our body is fuel dependent and that fuel is sugar in the physiological, rather than refined, form. A sudden threat to the level of that fuel triggers an alarm reaction because it is sensed as life threatening by our nervous system. Blood sugar maintains all body systems and when it drops suddenly, our automatic alarm system goes off with a bang! The "bang" is the CR, which is an adrenalin rush.

A CR is the body's way of coping with sudden stress. It is an alarm reaction that can be compared to the seeming pandemonium in a fire station when the fire alarm goes off at two a.m. A rush of adrenalin (the direct cause of the symptoms) produces the physical sensations, the causes of which are intellectualized and misinterpreted by the patient who, filled with fear (the sensation at the pit of the stomach), begins to look for causes. The body's physical response, the actual physical sensations most clearly felt by the patient are the pounding heart, and the sudden visceral vasoconstriction that produces the pit-of-the-stomach feeling. Lack of patient awareness of body function ensures that the CR induced symptoms elicit fear of the unknown, anxiety, dread, and a sense of impending doom. The patient usually describes the sensations and the sense of impending doom they provoke in the following phrases; "I feel like I'm going to go crazy," "I have this awful feeling in the pit of my stomach," "I feel like I'm on the verge of cracking up," "I feel like I'm going to blow up," "I feel like I'm going to die." The worst form of fear, fear of the unknown, grips the patient because he doesn't have the foggiest notion of what is causing the disagreeable sensations caused by the CR.

The rush of adrenalin, or CR, has long been described as the "fight or flee response." It is considered to be the normal physiological reaction to stressful situations theorized to have evolved in primitive man to handle dangerous, life threatening situations requiring sudden physical activity. Such an expenditure of energy requires fuel. The fuel is blood sugar. Although sugar, in the form of phosphorylated glucose produced by our cells, is the fuel of the body, when refined and included in the diet, it becomes the major culprit in the PA. This is due to its ability to over stimulate the release of insulin. The rush of insulin (hyperinsulinemia) precipitously drops blood sugar levels, setting off the alarm reaction that triggers the adrenalin rush as the body tries to restore sugar levels. During panic attacks, the functional relationship between sugar levels, insulin release, and adrenalin are usually ignored by most doctors and all patients.

A variety of unusual physiological responses can be elicited by purposeful, chance, or random conditioning. For example, the laboriously produced operant conditioned responses of Pavlov's dogs were completely extinguished by a single life threatening event when they were caught trapped in their cages during a flood. A lab assistant was able to make his way to the cages to turn the dogs loose just as they were filling with waters from the flood.[4]

In light of the above, it is conceivable to this writer that operant conditioning (OC) may eventually cause insulin release. Consider the patient who drinks several bottles of pop a day. The patient drinks a pop which causes the blood sugar to rise too rapidly, followed by the pancreas dumping insulin to lower blood sugar. After repeated doses, the pancreas is conditioned for easy release of insulin and begins to hyper-

secrete. Blood sugar levels begin to drop too low, too rapidly and finally in some patients, operant conditioning takes hold and just the visual cue of a bottle of pop on a television commercial may be enough to trigger the response. If this is true, the existence of OC related to dietary intake would be ever present. This may be a largely overlooked factor in other conditions such as hyperactivity blamed on too much television, etc. Long standing cases of panic attacks involving OC and conversion hysteria increase the time required to obtain clinical resolution.

A CR with its accompanying adrenalin rush causes:

1. The heart to pound and the pulse to race, this is to facilitate the body's ability to indulge in strenuous activity such as running or fighting for its life. As depicted in the Ciba illustration,[1] adrenalin is naturally correlated with aggressive behavior and, as of late, terms such as "road rage" (auto drivers kill one another over trivial conflicts) are emerging.
2. Vasoconstriction with reduction in blood supply to the skin, diverting it to muscles. The result is cold and clammy skin.
3. Visceral vasoconstriction with reduction of the blood supply to the digestive tract which produces the disagreeable sensation in the "pit of the stomach" suffered by panic attack victims. The gut sensation is probably amplified by the location of the adrenal glands in that anatomical area as they "fire off" to produce the adrenalin.

The physical sensations experienced during a panic attack are the same sensations caused by fear and anxiety. When the CR is provoked by insulogenic foods which precipitously drive down the blood sugar levels, the patient feels the sensations that accompany fear and anxiety without realizing that he has been caused by a CR to a sudden drop in blood sugar.

Some of the "natural" foods have powerful insulinogenic effects[2] capable of initiating the CR, especially potato, breads, dry cereals, rice cakes or sweets. One of the most frequently reported onsets of a PA is as follows: the patient eats sweets or one of the "natural" aforementioned foods late at night as a snack and goes to bed. The pancreas oversecretes insulin to handle the rapid rise in blood sugar and the resultant drop in blood sugar fires off the adrenals setting off the CR. The adrenal glands go off with a bang causing the heart to pound, the pulse to race, respiration rate to increase and the patient wakes out of a fitful sleep with all of this going on. It is a frightful experience. I have often been awakened in the wee hours of the morning by a telephone call from a patient who claims that he's going to crack up, go crazy, die, have a heart attack, blow up, or come apart at the seams. By the time the patient gets around to calling, the symptoms are being exacerbated by hyperventilation. I advise the patient to drink a glass of orange juice and then come back to the phone. In about five minutes the patient begins to calm down as the orange juice brings up the blood sugar. Once this is established the patient is advised to eat a couple of scrambled eggs or other suitable animal protein, stop worrying and go back to bed.

The doctor should be aware that the level of sugar is not as important as the rate of change since many patients are able to adapt to (minimally) acceptable levels of competence with low, but stabilized, blood sugar levels. This sets the stage for misinterpretation leading to much misunderstanding and misdiagnosis. The key to diagnosis is the timing of the attack in relation to food intake. The key to clinical success is correction of subluxations followed by patient education and above all, close, personalized supervision which is mandatory in all patients enduring emotional suffering.

The following instructions apply:

1. Patients need an in depth explanation of the mechanism of the PA and a list that identifies the high glycemic index foods that they must avoid.
2. Patients should be re-educated on the desirability of animal protein and natural fats or compliance with instructions will fail.[6, 7, 8]
3. The PA victim should never go over three or four hours without food. Foods should include animal protein or low glycemic index fruit and vegetable.
4. An evening snack at bedtime is advisable until under control especially if the PAs tend to occur in the wee hours of the morning.
5. A small can of orange juice and protein snack should be kept at bedside and consumed if the patient awakens during the night.
6. Chicken breasts, legs and wings, and hard-boiled eggs, make handy snacks at the bedside and on the road. Most patients are wary of diets high in animal protein. Three stories that I relate to the patient to help instill confidence in the effects of increased animal protein are:

   A. Long before the advent of antibiotics doctors cured infections by restricting carbohydrate and placing patients on high animal protein to increase antibodies. When President McKinley was shot by an assassin at the turn of the century he was fed raw eggs to help prevent infection from his bullet wound. Antibodies are globulins which are formed easily from animal protein.[5]

   B. The biggest, healthiest Africans are the Masai warriors. They are reported to have the highest IgA level in the world. They have no history of infections because IgA protects the mucous membranes. They live on animal blood and meat.[5]

   C. Our bodies can convert animal cells to our own body cells easily. The liver cell of any mammal looks alike under a microscope. When we chew baby beef liver for example, a message center in our mouth addresses the liver and it goes directly to our liver where it is used to repair our own cells. Plant cells are not like human cells and are not as easily converted, so the animal kingdom represents to the human, a spare parts replacement center. The fact is that the only need for carbohydrate in the human being is as a source of vitamin C.[4] There is good evidence that early man was a meat eater since crop cultivation was not noted until late in history and most of the general illnesses of mankind have been found to respond to high protein diets with restriction of carbohydrate.[5, 6, 7] In my own experience whenever a vegetarian is converted to meat the first comment is on the increased energy he experiences and he frequently is in awe of the large increase in this energy.

7. Since the brain consumes large amounts of blood sugar, at bedtime and throughout the day when possible, the patient should be advised to "turn his brain off" and refrain from indulging in internal conversations, especially of a negative nature, which encourages thoughts of aggressive behavior. Thinking aggressively can provoke a CR. Too much brain activity (thinking) can provoke a CR in the "fragile" personality type.
8. In difficult cases, support from family and friends and close supervision by the doctor who should be "only a telephone call away" instills confidence in the patient, results in immediate improvement and usually brings about resolution within a few days in simple cases.

9. Since PA patients usually suffer from hypoglycemia they should have all their instructions in very simple, written form since they cannot remember essential facts and have difficulty with even simple written instructions.

10. It also helps to write out the mechanisms involved in the PA on a three by five card so the patient can refer to it occasionally as a reminder. The instruction on the card is, "When you wake up at three a.m. with your heart pounding and that awful feeling in the pit of your stomach after eating sweets before bedtime, get up, drink a glass of orange juice and scramble an egg." Or, "When you have gone over three or four hours without food and have endured physical, emotional, or chemical stress simultaneously and suddenly find yourself having a PA while you are out and about, sit down, calm down, drink a glass of orange juice and eat some animal protein as soon as possible." Make the description fit the patient's usual behavior preceding the PA.

In my experience dealing with PA problems via applied kinesiology diagnostic methods, I have found a need to use: Neuropeptidal Enteric Hologrammic Technique (NEHT); small intestine and liver neurolymphatic reflexes; balancing of the latissimus dorsi muscles, the proper function of which includes pelvic mechanics and especially the iliolumbar ligament; the adrenal stress syndrome which includes Category II pelvic subluxations, sartorius and gracilis muscles; cranial faults; and spinal subluxations.

Conclusion

It is the opinion of this writer that most habitual sufferers of panic attacks are the victims of dietary indiscretions that cause wildly fluctuating blood sugar levels. Panic attacks and emotional lability are the ugly twins of a subluxated body indulging an improper diet with the blame all too frequently (and incorrectly) placed upon psychological factors. People with stable blood sugar levels are not easily excited, distracted, angered or made fearful by the usual stresses and strains and personal encounters of everyday life. The three provocateurs, in order of importance and frequency, of a catecholamine response or adrenalin rush are: chemical, emotional and physical. The most prevalent and almost always involved, immediate provocateur is chemical, related to dietary effects including food allergies. It is paramount that the sufferer fully understand the following:

1. The nature of the catecholamine response, how it is most commonly caused by improper foods or improper timing of food intakes. The patient should memorize the three chemical factors usually involved in the panic attack with the first being refined sugars (especially soft drinks and pastries), number two would be the starches (especially potato, bread and rice cakes) and thirdly, the catecholamine.

2. How some physical as well as certain types of mental overactivity contribute to the symptoms by burning body fuel (blood sugar) excessively.

3. Why the symptoms are often misinterpreted to be of psychological origin by those practitioners who specialize in psychological causes of human suffering. Patients should be encouraged to read the works of Szasz.[3]

At a time in our country's history when every bad habit and socially unacceptable behavior is being rationalized and re-categorized as some form of mental illness it is important to recognize and popularize those behaviors directly attributable to physiological causes. A review of Szasz's work will help doctors to regain confidence in age old traditions which have stood the test of time, which arise out of our common sense, and which help form the bedrock of a civilized, free society.

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Tools and More Tools

David W. Leaf, D.C., DIBAK

Abstract

Applied kinesiology is a history of adding more and more procedures or tools for the examination and treatment of patients. This is a short retrospective of where we have been and concludes that we need to look back and place these tools in perspective in regards to our teaching and treatment procedures.

Introduction

The body of knowledge known as applied kinesiology began in 1964 with the beginning of the teaching of muscle testing procedures by George Goodheart. In the beginning, there were one to two new procedures a year added to the collective base of knowledge. As the end of the sixties arrived this accumulation of procedures proliferated and in the 70s and 80s reached a peak where almost every month there was something new to add. Dr. Goodheart's additions to this knowledge base slowed in the 90s as more time was spent on developing concepts along with the development of procedures.

This same basic trend can be seen in the number of papers submitted for publication in the Collected Papers of the ICAK. In the seventies, many of the collections numbered over 300 pages. This has reduced substantially over the past few years.

Discussion

In lecturing, I have stated that what has been developed is similar to a box of tools. Many of these tools have similar purposes and functions. Unfortunately, some of these have not been examined in the light of when they were developed and other procedures developed later that can replace earlier tools with more effective procedures.

In his bimonthly research tapes, Dr. Goodheart likes to say "another piece of the puzzle." Many times the latest developments replace other puzzle pieces instead of adding another piece. This is the problem that confronts the teaching diplomate as well as the practitioner in applying applied kinesiology procedures in his/her office setting. The past experience has been to keep adding procedures and not thinking about where the procedure belongs in the total scheme of treating a patient. In answering questions from doctor students in a class, it becomes apparent that many of them look at the procedures in applied kinesiology as separate independent entities and not as a chain of treatment procedures that can be logically linked and analyzed. For every tool that has been developed, we need to be able to answer:

- When is it appropriate to apply this tool?
- Where does it fit in?
- What are the prerequisites that must be accomplished before testing and/or applying this tool?

- What tool should I use next?
- Does this tool replace other tools developed in the past?

It is this last question that I will expand on in this paper with the discussion of upper cervical and sacral imbalances and their associated tools.

In the upper cervical area, Dr. Goodheart has discussed and developed the following procedures:

- Occipital and upper cervical fixations
- Occipito-atlantal countertorque
- PRY-T
- Jugular decompression

Taking the last three, occipito-atlantal countertorque was developed prior to 1976 and included in the original 100 hour teaching syllabus. In the early 1980s, Goodheart developed the concepts of PRY-T. When reduced to their simplest level, I describe these as micro-fixations. In classes that I taught in the 1980s, I would introduce the original tool, occipito-atlantal countertorque, and then the new tool, PRY-T. Consistently in the class, the students would find that correction of PRY-T would correct the occipito-atlantal countertorque. As PRY-T was more all encompassing, the discussion of occipito-atlantal countertorque became a discussion on its historical development and mechanics instead of diagnosis and treatment.

Later, Dr. Goodheart adapted a procedure described in Upledger's Cranio-Sacral Therapy and called it jugular decompression. After examining this procedure and utilizing it, it became apparent that this corrected most if not all of the cranial portions of the PRY-T diagnosis and treatment. Here was a procedure that could be accomplished in approximately the same time as the diagnostic portion of the PRY-T examination and appeared to correct the problems that were uncovered.

In classes, I began to teach PRY-T and jugular decompression as a unit. Testing was done for the PRY-T cranial components and the jugular decompression technique used for treatment. In almost all cases, over 98% of the time, the jugular decompression technique correct the findings of the PRY-T examination and consequently of the occipito-atlantal countertorque testing.

These are examples of tools that were developed to correct a problem, but over time more successful tools were developed. From a historical stand point, it is important to teach that applied kinesiology is an evolving body of knowledge, but it does not mean that we have to keep adding layer upon layer making it more complex.

Another example of this is in the pelvis. In the 1970s Goodheart developed the concept of sacral wobble with its inspiration and expiration correction. In the early 1990s, Goodheart developed a testing procedure to determine if pelvic faults were corrected called piriformis - gait inhibition.

In retrospect, the imbalance in the sacrum, sacral wobble (failure to move in a figure 8 pattern) is a failure of the piriformis to function normally. Again in classes, I presented the concepts of sacral wobble and had the students correct pelvic imbalances until the patient passed the piriformis gait challenge. After having the patient walk to allow the piriformis to function normally, any sacral wobble findings were corrected.

Conclusion

The concept of sacral wobble, the motion of the sacrum is important to teach, but we must teach the student to ask, as Dr. Goodheart many times says “Why?”

To the new practitioner of applied kinesiology, it seems to be to complicated. In many ways, we have made it too complicated. Some, as a revolt against this, have tried to over simplify it or make it a bag of tricks or independent procedures with no cohesive thought.

Neither of these extremes serves the advancement of applied kinesiology.

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Visceral Flowchart Teaching Plan

David W. Leaf, D.C., DIBAK

Abstract

In teaching applied kinesiology, the use of the following concept of teaching of visceral problems has been of great aid to students. It is presented here for your consideration in the treatment of your patients or in your educational classes.

Introduction

One of the problems of utilizing applied kinesiology procedures is when to use them and in what order. In classes, it is important for the logical understanding of the material to teach these in a sequence that adds upon a foundation and makes some physiological sense.

Discussion

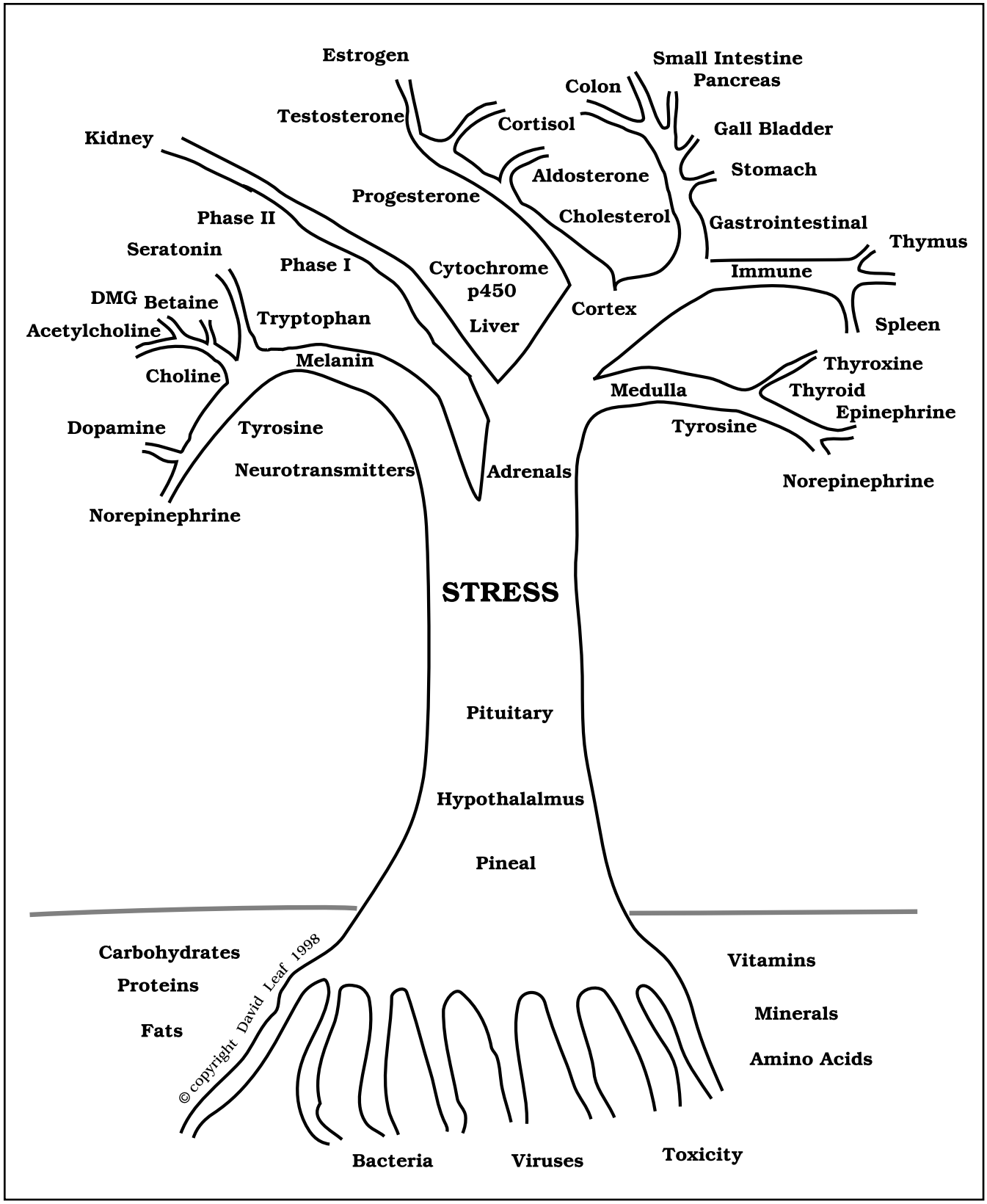
When teaching visceral/glandular imbalances, the following three procedures are presented first. These are pineal, hypothalamic (B&E) and pituitary drive. It is very common for pre-testing of the class to show little involvement in the meridian system without using enhancement procedures to the normal therapy localization.

After employing these above procedures, you will find more problems to correct. As a rule, a good proportion of the class will not have a positive finding for the hypothalamic testing or the pituitary drive therapy localization until the pineal and in the case of the pituitary, the hypothalamic procedures are completed. In each case, the discussion is linked to prior topics taught where they are applicable.

For example, the pineal fault is presented as a holographic subluxation of the sphenoid with a nutritional component. The correction of the pineal fault is what would be done if this problem existed and a discussion of why this would occur follows. The class quickly determines that a bilateral TMJ problem could be the underlying cause of the muscular imbalance that would create this structural condition. This begins the discussion relating structure with chemistry. This concept of relating structural corrections with nutritional manipulation follows through this course.

Conceptually, I first diagrammed this as a tree trunk with the lowest portion of the trunk being the pineal and following up the trunk the hypothalamus and then the pituitary.

As you can see on the accompanying chart, I then discuss the effect of stress as the tree begins to branch out. The concept here is that different patients will react to the stress in their life by exhibiting symptoms in one of the branches of the tree. This closely follows the findings of Selye. In the class, we stress the patient and see if we can elicit weakness patterns or symptoms related to either the adrenal cortex or the adrenal medulla.


Estrogen
Small Intestine
Pancreas
Colon
Testosterone
Cortisol
Gall Bladder
Kidney
Aldosterone
Stomach
Progesterone
Phase II
Cholesterol
Gastrointestinal
Thymus
Seratonin
Phase I
Cytochrome
p450
Immune
DMG
Betaine
Tryptophan
Liver
Cortex
Spleen
Acetylcholine
Melanin
Thyroxine
Choline
Medulla
Thyroid
Epinephrine
Dopamine
Tyrosine
Tyrosine
Neurotransmitters
Adrenals
Norepinephrine
Norepinephrine
STRESS
Pituitary
Hypothalalmus
Pineal
Carbohydrates
Proteins
Fats
Vitamins
Minerals
Amino Acids
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Bacteria
Viruses
Toxicity

At this point in the class, I review the basic procedures that have been related to the correction of visceral problems. One of the problems that I see in the teaching of applied kinesiology procedures is the failure to expand the use of a procedure from its original application. For example, Dr. Goodheart first used fascial massage with thyroid problems. This same procedure may be needed in all organ-muscle relationships and should be tested for. This same pattern exists for the interrelationship between the ligament interlink and the organ function first described by Schmitt, the concept of testing with eyes open and closed, visceral manipulation, memory recall, etc. During the class, a list of all of the possible treatment and testing procedures is reviewed and then these are applied to the problems found in the class.

Conclusion

Following these concepts, the class follows each of the branches of the tree and discusses the coordinated approach to handling symptoms related to the various systems of the body.

In teaching this way, I find that the attending doctor gains an overview of both structural and chemical approaches to more completely treat the patient.

It is extremely rare to find a patient with a symptom pattern that does not need both nutritional management and structural corrections for the alleviation of his problems.

I hope this adds insight into the teaching of these topics and/or a new outlook on your handling of these sometimes difficult patients.

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Division II

Critical Review

Homocysteine

John W. Brimhall, D.C., DIBAK

Abstract

Plasma homocysteine is now recognized as a major risk factor in vascular disease as well as being linked to many other conditions such as neural tube defects, multiple sclerosis, rheumatoid arthritis, spontaneous abortion, placental abruption, renal failure, non-insulin-dependent diabetes, neuropsychiatric conditions, etc. Homocysteine is an intermediate metabolite of methionine metabolism. A small percentage of the population (2.5-5%) is thought to have a genetic predisposition to high homocysteine. Many more people are showing increased levels due to inadequate nutrition or utilization of nutrients, e.g., B12, B6, folic acid and betaine. Supplementation of these and other nutrients is showing significant reduction in toxic levels of homocysteine.

Introduction

Forty percent of Americans die of blood vascular disease. High homocysteine levels may be the most neglected risk factor and possibly one of the most significant along with smoking, dyslipedemia, hypertension and obesity. In addition to cardiovascular disease high homocysteine levels have been associated with many other conditions ranging from: placental abruption, neural tube defect, complications of diabetes to alcoholism and neuropsychiatric disorders.

Homocysteine itself is an intermediate metabolite of methionine and is metabolized in two pathways: 1) The re-methylation pathway, which returns it to methionine as an end result and 2) the trans-sulfuration pathway which breaks homocysteine into cysteine and taurine and then all the way to SO_4 if all of the necessary cofactors are available. This turns a bad lemon into good lemonade. Remember SO_4 is the common link to detoxification of the liver, adrenal and joint repair.

Homocysteine being at a metabolic crossroads can affect all methyl and sulfur group metabolism existing in the human. Elevated levels could interfere with the biosynthesis of: S-adenosylmethionine, carnitine, chondroitin sulfate, coenzyme A, coenzyme Q10, creatine, cysteine, dimethylglycine, epinephrine, glucosamine sulfate, glutathione, glycine, melatonin, pantethine, phosphatidylcholine, phosphatidylserine, serine and taurine. Nutritional intervention with the co-factors for adequate metabolism offers the only current treatment plan and has shown to be very successful in treatment and prevention of the many listed symptoms and clinical conditions.

Discussion

The research is ever-increasing that documents that higher homocysteine levels are more dangerous than high cholesterol. Dr. Kilmer Mc Cully was the first to propose this relationship to high homocysteine and vascular damage and heart disease as early as 1969. His ideas were considered radical by the medical community and in fact he was ostracized from the Harvard Medical Community.

Homocysteine is a byproduct of the normal break down of the essential amino acid methionie. It becomes a toxic molecule at higher levels and promotes the development of atherosclerosis. A Tuft's University study, that was published February 2, 1995, showed levels as low as 11.4 u/mol per liter were toxic in both sexes which had been previously considered a non toxic level.

Other conditions linked with high homocysteine levels are an increased risk for alcoholism, Alzheimer's disease, depression, diabetic complications, multiple sclerosis, neural tube defect, osteoporosis, Parkinson's Disease, placental complications, renal failure, rheumatoid conditions, schizophrenia and a tendency toward spontaneous abortion.

Researchers have shown that excessive homocysteine levels have been directly related to 42% of strokes, 28% of peripheral vascular disease and approximately 30% of premature heart disease. The New England Journal of Medicine, published July 1997 showed high homocysteine levels in 587 patients with heart disease. After 5 years, 3.8% of those patients with low homocysteine levels (below 9u/mol) died compared to nearly 25% of patients with levels greater than 15 u/mol. This study was conclusive that high levels of homocysteine yield not only reoccurring heart attacks, but higher incident rate of death.

Foods that contain high methionine that can yield greater homocysteine levels are red meat, avocado, sunflower seeds, wild game, poultry and ricotta cheese. One would hope the rationale is not to limit these foods like the anti cholesterol craze but to increase the proper nutrients that allow complete utilization of the amino acid methionine.

Dr. Rima Rozen at McGill University in Montreal showed that there can be an ineffective enzyme connection due to a mutated or defective gene. Other researchers have shown inadequate nutrients or faulty digestion and assimilation yield elevated homocysteine. A genetic predisposition is considered to be present in 2-5% of the population. However nutrient deficiency of one or more of the essential protective nutrients may be a problem in over half of the American population.

Homocysteine enters the blood stream and promotes oxidation of lipids and causes platelets to stick together. This further enhances the binding of Lipoprotein (a) to fibrin which promotes further free radical damage to the arteries. Research has further shown there is a good side to this story. There are two major biochemical pathways used by the body to reduce homocysteine. Whether the elevation has been a deficiency or a defective gene it has been successfully treated through a combination of nutrition, such as folic acid, B6, B12 and trimethylglycine (TMG).

As a part of the Tufts University study it was shown that the dietary intake of vitamins B6, B12 and folic acid helps clear homocysteine from the circulation. They showed that levels of folic acid and B6 were inversely correlated with disease risk because of the nutrient's ability to regulate homocysteine stores. Further studies showed some people could not utilize B6 adequately because they could not convert it to its active co-enzyme form, pyridoxyl-5'phosphate.

Homocysteine, like cholesterol, has a necessary function in the body and then is converted, with the necessary nutrients or cofactors, to make other beneficial compounds. There are two pathways of homocysteine metabolism: 1. The re-methylantion pathway and 2. The trans-sulfuration pathway. Refer to *figure 1*,

Insert Figure 1

where it shows the break down of methionine in the presence of magnesium, forming SAM (s-adenosyl-methionine). Then in the presence of a methyl donor such as betaine, SAM is converted to SAH (S-adenosylhomocysteine) and then on to homocysteine. With adequate B6, it is converted to cystathionine and then the cysteine to cysteine-sulfinic acid. Then on to B-sulfinylpyruvic acid, to SO_3-2 and then to SO_4-2. This SO_4 end product is one of the common links to liver detoxification, adrenal de-stress and joint repair. Incomplete conversion to the SO_4, due to lack of cofactors, could yield the toxic sulfite, SO_3-2, this is the trans-sulfuration pathway. The top of *figure 1* shows the re-methylation pathway. Here homocysteine receives a methyl group (CH3) by either methylcobalamine or betaine (trimethylglycine). Methylcobalamin first received its methyl group from S-adenosylmethionine (SAM) or S-methyltetrahydrofolate, an active form of folic acid. In their presence homocysteine is converted back to methionine.

Statistics show that 40% of Americans die from blood vascular related disease. Now research is proving this may be due largely to malnutrition and inadequate supplementation. As previously stated, another factor that should be considered here is that some people are not able to convert B6 efficiently and may need to supplement with the active co-enzyme form of B6, pyridoxyl-5'phosphate. The addition of the methyl donor betaine, sometimes called trimethylglycine (TMG) should be added. Anhydrous betaine (without water), functions as a methyl donor in conversion of homocysteine to SAM. This complete conversion is valuable in liver detoxification, depression, arthritis and even fibromyalgia. The methyl groups have been shown to protect cellular DNA from mutation. Research has indicated that some people with cancer have abnormal methylation patterns.

Magnesium is necessary in the first conversion from methionine to SAM as well as being needed as a co-factor in 80% of the enzyme systems of the body. Magnesium has also been shown to be atherosclerotic preventive on its own. Magnesium can also raise levels of HDL cholesterol and inhibit platelet aggregation and improve heart-muscle function. Magnesium has also been shown to be helpful in lowering blood pressure and to dilate blood vessel walls. Current research shows the RDA for magnesium is not reached by many Americans.

Another nutrient that should be considered in small amounts is molybdenum. As referred to in chart one cysteine is produced from methionine requiring magnesium and B6. The sulfate is produced by self oxidation of cysteine through the toxic sulfite (SO_3-2) molecule. This step requires the essential trace mineral molybdenum to go to completion. Without adequate molybdenum there is increased sulfite production and yields a decline of the patients condition. (Schmitt)

Homocysteine is a critical intermediate in both methyl and sulfur group phase II liver detoxification. Sulfur conjugation requires N-acetylcysteine (NAC), as well as being used in mercapturic acid synthesis for detoxifying many compounds including aromatic hydrocarbons, some phenols, halides, esters, epoxides and caffeine. Therefore the addition of N-acetylcystein may be helpful.

Another nutrient that is shown to be helpful as a cofactor in absorption, activation or utilization is B3 (niacin), which is used to convert the intestinally acquired folate to DHF (dihydrofolate) and the B3 is further required for conversion to THF (tetrahydrofolate). Zinc and selenium are also used in the conversion process along the way with calcium and magnesium.

Diagnostic Consideration

Testing of homocysteine is accomplished through blood tests. Many studies show the upper limit of normal to be 12-16 uMol/L. We will probably see this drop as studies are showing 11 and lower to be significant. Ask your lab for a plasma homocysteine determination.

Kinesiological Determination

Pure homocysteine can be ordered from Nutri-West of Douglas, Wyoming, at 1-800-443-3333. They do not sell it for human consumption, but for testing only, due to potential toxicity.

An AK challenge can be accomplished by testing any intact strong muscle before and after administration of just a few sprinkles under the tongue of the homocysteine. If the previously strong muscle weakens, administration of the useful nutrients discussed e.g., B12, B6, folic acid, betaine, etc. will strengthen the weakness. Some companies are making all inclusive synergestic products for reducing homocysteine, or you may supply them individually. There is a high percentage of the population that weakens to the oral challange of homocysteine. I have found all of these to strengthen to the administration of the nutrients as a group. Giving equal doses three times per day is recommended.

I personally do not like administration of toxic substances in an oral challenge. So I deviate from standard protocol to an energy field challenge in most cases. It is very apparent in testing and will weaken an affected area of the patient e.g., over the heart or head area.

Conclusion

Elevated homocysteine levels are a significant risk factor for blood vascular disease and deaths. Elevated levels have also been implicated as risk factors in neuropsychiatric, rheumatoid, glandular and prenatal disease, etc. Testing can be accomplished by blood plasma and applied kinesiology. Supplementation with nutrients is the method of choice and has shown to be optimal in those genetically predisposed as well as those considered to be normal. The nutrients of choice are betaine, Vitamin B12, folic acid, Vitamin B6 and other co-factors. It is estimated that over 1,000 articles have appeared in the scientific literature in the past five (5) years on homocysteine.

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Percussion and Applied Kinesiology

John W. Brimhall, D.C., DIBAK

Abstract

Use of a percussion instrument in the field of manual medicine was first accomplished by Robert Fulford, D.O. in the 1940s. He used it to enhance craniosacral motion and to free up the primary respiratory mechanism. The basic technique is to place the percussion head on an area of major restriction and to monitor the opposite side of the restricted area with your free hand. Your monitoring hand is to restrict the movement the body tries to unwind into until you get a deep internal release from the fascia. Other techniques have been developed for myofascialgelosis and trigger point release. Correction of subluxations, fixations, scar tissue, extremities and cranial releases have been developed. The percussion hammer can be a great adjunct to the practice of manipulation and health care.

Introduction

I took my first course from Dr. Fulford in 1991. I presented my first paper and demonstration to the ICAK a couple of years later. Since that time Dr. Goodheart and many other physicians have found the percussion hammer to complement their practice. Dr. Goodheart developed a very light contact over restricted areas to free the myofascialgelosis referred to by Janet Travell. We have further developed many uses for the hammer including visceral manipulation, scar tissue release, percussion during motion, different cranial releases and TMJ procedures, etc.

We have worked with the company, I.M.P.A.C., to develop a new percussor better adapted to the practice of health care. The original Fordom unit was originally developed for the lapidary industry, yet has served well.

Discussion

The percussor allows one to work with the fascia of the body at a very deep and long lasting dimension. Fascial restrictions underlie many persistent subluxations, fixations, chronic pain syndromes, and scar tissue. Percussion allows one to free both the superficial and the deep fascia.

You can align the spine, correct a TMJ, an illeo cecal valve or release a spastic bowel with percussion. Techniques are available to adjust the tibia, fibula, patella and realign the plantar fascia.

Dr. Fulford adjusted everything in a static position, with a very light contact with the hammer, and a more firm contact with the monitoring hand. The monitoring hand in most cases is opposite the contact and line of drive of the hammer. The body part percussed tries to unwind. The idea of fascial release is to restrict the unwinding with your monitoring hand until you get a deep fascial-energy release.

The fascia and the bones of the body have electrical properties that let them carry electrical current. The

fascia covers every muscle, organ and system in the body. It is continuous and all inclusive. Fascia carries an electrical charge and is in constant communication with the nervous system throughout the entire body.

Dr. Fulford stated that the CSF was the highest force in man. It is formed in the brain and is pumped throughout by the rhythmic contraction of that part of the fascia called the dura mater. The craniosacral system contracts 6-12 times per minute and has far reaching effects on sensory, motor and overall neurological function. The craniosacral is a physiological system that exists in all animals possessing a brain and spinal cord. It forms in the womb and continues to function until death.

Respiration is a body rhythm as is the cardiovascular system also set on rhythm. They are independent of the CSF, yet related to and influenced by each other. The cardiovascular system is very electric and uses its blood vessels as signal transmitters. The heart acts not only as a pump, but as a generator of electricity or charged ions throughout the whole body. The fascia around the heart is called the pericardium. Some researchers have referred to the pericardium as a main bank to store electrical energy. Energy is also stored in the dura mater and other fascia.

When there is obstruction or resistance to the flow of energy, homeostasis is no longer achieved and malfunction may ensue. The percussion instrument releases the fascia through biomechanical and bio-electric unwinding. This allows the tissues, organs and fluids to flow creating motion and life.

Physical Trauma and Energy Cyst:

The patterns of collagen/fascial fibers are determined by the electrical forces passing through it. Any trauma, including emotional, is an electrically charged event which can influence our make-up. According to Wolff's Law our tissues grow and regenerate according to the demands placed upon it. Based on this law, traumas are recorded events in the tissues of the body. These recorded traumas can cause an "energy sink." Where previous trauma has occurred, subsequent injuries are recorded over that original fascial plane. This blockage of energy creates the energy cyst. By the law of quantum physics, in order to dissolve this energy cyst, we need to match that energy and surpass it. In doing so, energy homeostasis is achieved.

The term peizo-electric effect, refers to the ability of some materials to transform mechanical force into electrical energy. Percussion creates enough energy to overcome the energy sink effect on damaged and restricted tissue to allow normal circuitry to be re-established and allow normal flow and symmetry. The combination of motor speed, pressure applied and the vector yields the desired result for release. One must be holding back the tissues with the monitoring hand to let enough energy build to surpass the quantity of injury that caused the fascia deformation.

Dr. Fulford always said intent was more important than technique. Therefore, one's thoughts and intent need to be pure and focused. His technique was to hold the hammer next to the tissue but not quite touching. He would adjust the speed to where the tissues engaged or sucked the hammer in the fascia beginning its journey for release. Remember he said the hammer was an extension of the operator's pure thought to release the restriction or energy sink.

I'm going to repeat that the opposing or free hand is not to follow the unwinding tissue, but to resist the unwinding to allow a deep fascial release as the energy sink is freed. It is important to feel this subtle release and get off the spot as to prevent a re-torque in a different direction. This is most critical on the cranium. It is better to be on an area too short a period of time or too soft a touch rather than too long or hard. This release is sometimes very subtle and many people do not feel it at first.

Science verifies that all life is a vibration. The highest form of vibration is spirit and the lowest is dense

matter. Dr. Fulford said the percussor helped to improve the vibratory rhythm of man at all levels by pure love and loving intent with its use.

Shock Release

Shock release is a technique that helps free the breath and release internal tensions. With the patient supine, monitor the rib cage for restriction right to left. Lack of motion and/or resiliency may be due to the lung lobes or diaphragm pulling cephalad as a result of trauma, anxiety, or fear. The fascia pulls the ribs lateral to medial and slightly cephalad. Due to polarity, when performing a shock release technique, stand on the right side of the patient's body if the patient is a male and the left side of the patient's body if the patient is a female. Shock release is from Wihelm Reich's technique. It helps to re-establish the diaphragm's position and increase the breath.

1. Place fingers of both hands below the zyphoid process along the linea alba between the zyphoid and umbilicus.
2. As the patient breathes out, press downward until you reach the resistance point and maintain slight pressure. It should feel like butter melting as it releases.
3. Hold and notice with all your concentration when it slowly starts to give under your hands. As the pressure builds, you maintain your hold and wait for the release.
4. If you feel the tissue shifting under your hands, follow it through the torsion and then hold it until softening and release.
5. As the wall of restriction releases, you slowly let your hands come out of the deep space.

We need to get the emotional release centers freed as well as any of the subluxations in the spine, relating to the diaphragm. For shock release on a child, use only one hand. Explain to the patient that they might have a good cry or emotional release over the next twenty-four hours.

Autonomic Nervous System

The autonomic nervous system, including the celiac and superior and inferior mesenteric ganglia are influenced by the fascial restrictions and will be stimulated by release. The actual emotional feeling of the trauma or the event is stored in the gut, however, the memory of the feeling is in the brain. The brain will influence the flow of the CSF. Right nostril to left hemisphere and vice versa. There is a nasal pattern that helps the brain. A deep nasal breath will strip a negative ion charge from the brain and bring alertness to the mind and assist in release of the trauma as recorded by the brain. The CSF is ionized by our breathing mechanism. The right nostril is positive and the left is negative.

Breathing is the most elemental of our body's functions and it can be involuntary and conscious or unconscious. Therefore, breathing is the link between our mind and our body. The CSF is pumped by our cranial movement, which should follow a harmonious pumping pattern. Unbalanced breathing affects the sleep cycle and can cause mental disturbance.

A Swedish study showed a correlation between good and bad breathers and their development in the first seven years. If a full, relaxed first breath is not taken after the birth of a child, his body and lungs may never fully expand. Mouth breathers can not take stress well. Under stress they hold their breath and have a decreased vitality and decreased tolerance for life's problems. We can extrapolate from this the impor-

tance of the habit of conscious voluntary breathing exercises. Thereby assisting in the balance between body and mind.

Toxin Elimination

Our elimination system needs to be fully operational. Our wastes are eliminated by the body: 3% by the bowel, 7% by urine, 20% by the skin and 70% by breath/water vapor. So you see if we can improve the breath, we can improve overall health.

Percussor Technique

One must keep these rules and insights in mind for maximum results.

1. Feel the subtle motion or energy movement of the organs.
2. Keep the angle and center of the plunger at the point you want the release to occur.
3. Motor speed will change (slow) as the energy builds in the fascia. As the release is taking place the motor will speed up again. This is much more noticeable with the Fordom unit as the motor is much weaker.
4. Monitor with the other hand on the opposite side of the joint or organ area, etc.
5. You may have to change the LOC of the hammer head on the skin. Alter angle of the percussor so you can feel the wave coming through to the other hand when the fascia animates.
6. Let the fascia's energy build in your hand until it gives. **CONCENTRATE** on the release of that blocked fascia (energy sink) with your intention.
7. Get off the spot when the patient's release is evident. Breathing change, heat, motion or increased craniasacral fluid rhythm will manifest at the release.

Knee Torque

Dr. Fulford's research states that left knee distortion is trauma caused from pregnancy or birth. Distortion of the right knee is injury or trauma during one's lifetime. So often times he started at the left knee, even if it was cranial symptoms manifesting.

To evaluate a patients knee for a torque pattern, place the patient supine. Visualize a vertical pattern which bisects the patella and anterior surface of the shaft of the tibia. The tibial tuberosity should fall under this line. A torque pattern exists if the tibial tuberosity lies lateral or medial to the vertical drop line.

In detorquing the knee, percuss the lateral aspect just proximal to the knee joint. You can palpate proximal to distal on the medial thigh of the patient. A depression will be found at the distal portion of the lateral quadriceps and the tensor fascia lata, (TFL). This depression is the point of contact for the percussor. The listening hand is placed on the medial side of the knee opposite the head of the percussor. The doctor is to concentrate on the feel of the percussion waves. As the fascial release takes place, you will feel a subtle flip of the tissue. For tough cases or children, go to the inside of the tibial plateau and monitor the outer side. You then percuss the proximal fibula head monitoring opposite on the inner tibia. Once the torsion of the knee is removed, it will often free the rest of the body from the diaphragm to the back of the neck and the skull.

Ankle/Foot

During this evaluation, an assessment of the gross and subtle movement is made as well as observing the resting position of the distal tibia and fibula. When the ankle is at rest, with the toes pointed toward the ceiling, the distal tibia and fibula should be parallel. When these are found to be out of alignment the fibular side of the ankle must be released first. The head of the percussor should be placed over the distal fibular head and percussed. The doctor's listening hand should be firmly supporting the medial side of the ankle and foot preventing it from moving as the percussor increases the energy and pressure in the fascia of the foot and ankle. As the fascia unwinds and releases, the amount of resistance in the listening hand and the percussor will decrease. Next, place the percussor over the insertion of the achilles tendon. Hold the calcaneous with your listening hand and feel again for the release of the fascia. Not only will this technique make manipulation of the foot and ankle easier, but can release from the sacroiliac up to the TMJ. The navicular and cuboid bones many times need to be percussed.

Femur Head

Dr. Fulford found that the most beneficial results were obtained by percussing the right femoral head only. Whenever percussing a bony prominence, ***slow the hammer down***. Place the percussor perpendicular to the head of the femur while the listening hand stabilizes the medial side of the knee, or thigh. Many times I will monitor the left or opposite femur area. I will also percuss the left femur head directly if I feel restriction after doing the right first.

Sacrum/Sacrococcygeal Angle

Free motion of this area is essential for the flow of CSF. Located on the ventral side of the sacrum-coccyx is the base of the sympathetic chain ganglia. This sympathetic chain ganglion acts as the connection to the sphenobasilar system. When the sacrum and coccyx are not freely moving as they are designed to be, CSF flow may be altered. Many cranial problems can ensue and the patient may present with any number of problems, such as dysmenorrhea, unrelenting pain in the pelvis or low back, upper cervical or occipital dysfunction, headaches or migraines, as well as neurological disorganization problems like hyperactivity, coordination difficulties, decreased concentration and in many cases ADD and ADHD. Evaluation of the pelvis by palpation should be performed taking into consideration the PSIS, ASIS and sacral base especially at the 2nd sacral segment, and the apex by lateral to medial palpation bilaterally. With the percussor, release all areas of restriction or the one area of greatest restriction. Quickest results are usually obtained with the patient side lying in a partial fetal position. The doctor should be positioned comfortably sitting behind the patient. The listening hand and arm should be placed on the upside of the patient's pelvis monitoring the release of the fascia.

Shoulder and AC Joint

The percussor technique for the shoulder is highly effective in the release of frozen shoulder syndrome of many etiologies as well as bursitis problems as a result of restricted shoulder motion. In evaluation, use slow passive motion to observe. With the patient seated, the doctor stands behind the patient and laterally abducts the patient's arm. Observation of the glenohumoral joint and scapular motion is key. Next, the doctor should observe the motion and the position of the clavicle. Stabilize the glenohumoral joint and percuss

anterior with percussor point of contact at the glenohumoral and AC joints. The next point of contact should be at the inferior angle of the scapula and infraspinatous. Then consider the levator scapula of the involved side and the uninvolved levator. Next, percuss directly lateral to medial over the head of the humerus stabilizing on the opposite shoulder. Finally, percuss the sternoclavicular joint if indicated. You are now ready to re-evaluate the patient's range of motion. Residual restrictions may be cleared by manipulation of C_7 and/or the first rib. You may need to release only one or two of these contact points mentioned. We listed all possible areas for reference.

Spine

Dr. Fulford stated that if you release C_3 restrictive lesions as well as the Lovett reactive L_3 restrictive lesions, CSF will flow better and the rest of the body will more easily correct. If the release of the primary area of complaint is too painful or acutely injured, begin with its Lovett reactor. When percussing from the pelvis to T_8, monitor at the hip and pelvis. When percussing from T_8 and up, monitor at the shoulder. Of course any vertebra may be percussed.

Elbow and Wrist

Evaluation of the wrist and elbow is very similar to the shoulder. The doctor needs to observe passive range of motion and palpate for motion restrictions noting points of tenderness. Percuss perpendicular to the area, which you wish to treat. Feel for the release, then re-evaluate range of motion and area of point tenderness. Of course your monitoring hand is opposite or across from the percussion head.

Cranial Release

To release the occiput, the patient is supine and his right arm fully extended with the hand under the buttocks. You percuss into the right shoulder while the listening hand monitors at the occiput.

To release the frontal bone, the patient is lying supine with the left arm fully extended, hand under the buttocks. Put the percussor on the left shoulder and the monitoring hand on the frontal bone feeling for release.

To release the parietal/ethmoid bone, the patient is supine and you percuss the parietal bone on the ossification centers on the side of the head. You monitor at the metopic suture. You will feel a flip release on the forehead. Dr. Fulford stated that it was the cribiform plate of the ethmoid releasing.

To release the cranium posterior to anterior, we use a very low setting and percuss the external occipital protuberance with very light pressure. The listening hand is on the frontal bone. This will clear the glabella cranial fault and correct muscle weakness induced by breathing in through the mouth.

To treat the TMJ, I turn the percussor to the lowest setting and place the pad in the plane line of the TMJ, just below the malars. The monitoring hand is on the mandible on the opposite side. You will feel it unwind the entire mechanism.

Dr. Goodheart's myofascialgelosis technique differs in that he feels the percussion waves come through to the listening hand and then backs off to where the waves are not felt. This is accomplished with light force and a slow percusson setting. This technique returns the abnormal gel state to its more normal fluid sol form. An increased range of motion and improved function of the area treated is the norm.

The percussor can also be used for neurotherapy or scar tissue release. As stated, never percuss on an acute sprain or new surgery. Old surgeries can restrict CSF flow, and cause lack of organ motility, mobility and retain energy sinks. The hammer is placed on a low setting and light pressure. The monitoring hand goes opposite, if possible, from the area being percussed. The monitoring hand resists the unwinding and a deep release will usually ensue.

No article can replace proper hands on instruction. Classes are taught across the country approximately every month. Learn on the extremities and go to the spine. Next, learn the cranium and treat after you mastered the feel. Miracles can be accomplished if properly approached. Yet, Dr. Fulford tells of two students deviating from his instructions eliciting seizures in one of them.

Contraindications

Do not use percussion on any of the following:

- Recent fractures
- Recent surgical areas
- Extremely tender areas
- Areas of cancer
- Extreme osteoporosis
- Bruises
- Thrombophlebitis
- Open lesions or wounds
- On the cervical spine or cranium if the patient has a history of a detaching retina.

Conclusion

Percussion has been a relatively unknown technique even though it's been around for over 40 years. It was developed by Robert Fulford, D.O., and he was basically saving it for the osteopathic profession. Yet it is a natural for chiropractors and applied kinesiologists. With proper knowledge and application, it can be used in correction of myofascial, myofascialgelosis, subluxation fixation, extremities, TMJ, cranial, visceral, trigger point and even scar tissue release. Intent is more important than technique and one must be and can become very skillful in knowledge and application.

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Restoring Spinal Polarity

Bill Conder, D.C.

Abstract

The polarity of the human spine is discussed. Spinal polarity reversal is proposed as an adaptive energetic condition which may manifest as conventional applied kinesiology findings such as fixations of the thoracic spine, imbalance in the governing and conception vessel meridians, switching, and Category I. A method for detecting and correcting the reversal of spinal polarity is presented.

Introduction

During evaluation of a patient for a Category One pelvis an inconsistency was observed in results between the two AK protocols:[1] The patient TL method yielded negative results while the sacroiliac-ischium challenge method was positive, in the same patient, during the same office visit, and without treatment between the two evaluation procedures. Exploring the patient TL method, possible sources of the inconsistency were noted:

1. The position of the arms that enables TLing the SI joints bilaterally simultaneously requires humerus internal rotation and adduction, the action of the teres major muscles. Bilaterally weak teres major muscles is an indicator of AK thoracic spine fixations; and,
2. The doctor's stabilization during the hamstring muscle test, used as an indicator muscle in this pelvic categorization method, constitutes an electromagnetic challenge to the muscle. That is, the relatively negative palmar surface of the hand should not affect a strong muscle but will cause a hypertonic muscle (one that does not exhibit autogenic inhibition) to weaken and may cause a weak muscle to appear strong. (Photograph 3-69 on page 105 of Walther's *Synopsis* clearly shows proper patient arm position and doctor stabilization hand placement.)

The patient TL method of evaluating for Category I pelvis, therefore, introduces at least two "invisible" variables to the evaluation which may alter outcome dramatically. For example, if contraction of one or both of the teres major muscles is compromised in some way, an indicator muscle test, in this case the hamstring, may reflect it; and if the hamstring muscle for any reason does not demonstrate autogenic inhibition it will malfunction hypertonically without stabilization but may weaken with palmar hand stabilization. If bilateral simultaneous contraction of the teres major muscles does affect the outcome of an indicator muscle test either to make a strong muscle weaken or a normal muscle to become hypertonic, the electromagnetic challenge of palmar hand stabilization over the belly of the hamstring may reverse that outcome. Hidden variables and their effects in our techniques and protocols may result in our chasing the wild goose. Or, at best, ironically they may result in our obtaining moderately good treatment outcomes via inaccurate evaluation procedures.

In the case indicated above, a Category One pelvis actually was present. However, in subsequent evaluations performed in the same manner on other patients, what appeared to be a Category One pelvis as indicated by the patient TL method was more akin to a Category One "shoulder" projected to the pelvis by a kind of switching adaptation caused by a reversal of spinal polarity. Using this distinction in practice, very few true Category One pelvic conditions are found and many more Category One shoulders, that is to say, reversed spinal polarities, appear.

The notion of shoulder girdle distortion in relation to Category One pelvis is not new to conventional AK understanding. It is, however, conventionally considered to be secondary to pelvic torque and to manifest as Thoracic Outlet Syndrome. It is suggested here, though, that what eventually manifests as shoulder girdle distortion, and Category One pelvic torque subsequently, is a result of hyper-stimulation of the sympathetic branch of the Autonomic Nervous system focused initially at the tissues of the cervico-thoracic junction via, possibly, the stellate ganglion.

Methods

Many indicators can be found arising together when spinal polarity is reversed. Most will be present at the same time. These indicators include (* denotes primary indicators always present with reversed spinal polarity):

- Bilateral teres major hypertonicity when tested simultaneously (an indicator muscle will react positively immediately following the simultaneous bilateral teres major muscle test)*
- Positive indicator muscle test following a cephalad to caudad tracing of the governing or conception vessel (caudad to cephalad tracing of either meridian will not cause the weakening response of an indicator muscle as it should normally)*
- Positive indicator muscle test in conjunction with either doctor or patient TL to the hypothalamus reflex located at the glabella*
- Positive indicator muscle test in conjunction with doctor TL to the second sacral tubercle
- Positive indicator muscle test with simultaneous bilateral K-27 TL
- Positive indicator muscle test with simultaneous bilateral patient sacroiliac TL (patient prone and without doctor stabilization)
- Positive indicator muscle test with stimulation of yang lower extremity exit acu-meridian points (which indicates that the patient is asleep)
- Negative indicator muscle test with stimulation of yin lower extremity entry acu-meridian points (this stimulation should cause a positive muscle test if the patient is awake and grounded)
- Positive indicator muscle test with doctor or patient TL (using index finger tip) of all Yang Beginning and Ending, Stomach 12, and Governing Vessel 14 acu-meridian points
- Positive indicator muscle test with challenge of C-2
- Psoas muscle weakness and deltoid muscle failure to demonstrate autogenic inhibition
- Various patterns of neck flexor and/or sternocleidomastoid weakness

- Positive indicator muscle test with the introduction of homeopathic Hypothalamus 30X over the patient's Stomach Alarm point
- Positive indicator muscle test with the introduction of homeopathic Ignatia 200X over the patient's Stomach Alarm point
- Positive indicator muscle test with doctor or patient TL to C-7, T-1, or Governing Vessel 14 acu-meridian point, which negates all of the other positive indicators by two-point TL that may be present from the above list*

Treatment

Chiropractic adjustment of C-7 to correct for spinous rotation to the side of "open wedging," as in a Gonsted Simple Listing PLS or PRS, appears to be the single most effective tool to treat this condition. Additionally, adjustment of T-1, a first rib head, or C-6 is necessary. Secondarily, upper cervical (C-1 or C-2) adjustment, stimulation of the teres major NL, origin/insertion or muscle spindle therapy of the sternocleidomastoid muscles, trigger point therapy of the scalenes, and so on according to what is found subsequently, helps to "clean up" remaining effects of the imbalance.

Discussion

The wide range of indicators, which may include others as yet undiscovered, and the power of a single chiropractic adjustment to clear those indicators, is quite remarkable. Perhaps if we were acupuncturists we would needle GV-14 and obtain similar results.

As effective as the treatment recommended above is, the condition recurs, though with diminishing effect. The recurrence of the condition in a variety of patients seems to suggest that something that these patients do or are exposed to is "causing" or contributing to the condition. It is suggested here that, in general, the reversal of spinal polarity is the result of increased sympathetic autonomic nervous system stimulation (that is to say, a kind of shock) by any of a variety or a combination of a variety of effectors monitored at the hypothalamus. This sympathetic nerve hyperactivity persists unresolved, ungrounded as it were, in the body-mind affecting all areas of function. Chronic non-resolution of hypoxia, dehydration, endocrine metabolism imbalance, fight-or-flight reaction, and so on, singly or in combination produces this subclinical shock which grounding and repolarization serve to correct.

"Shock," "grounding," and "polarity" are words used in reference to both electrical circuitry and in human body function-disfunction. Clinical shock is diagnosed as a circulatory system disorder that manifests as a decrease in blood pressure with an increase in heart rate often accompanied by unconsciousness. Electrical shock, causing extreme nerve stimulation and muscular convulsion, can be caused by passing an electric current as small as 0.01A through the body. In electrical circuitry, the ground connection is used to protect against shock hazzard. In some traditional and new age healing arts modalities, one may hear the phrase "grounding one's energy" as a reference to the importance to health and consciousness of having one's feet on the ground as it were. It seems that the effect of "having one's feet on the ground" is not just figurative but also literal in the electrical sense.

A drop in orthostatic blood pressure is accepted as an indication of "adrenal fatigue," or "hypoadrenia" and sometimes dehydration. Both adrenal tone and fluid balance are monitored by the hypothalamus which may trigger adaptive mechanisms to maintain function and allow for the compromised state.

Unconsciousness, as induced by sleep or anesthesia, has been defined by Becker as a reversal of cortical polarity.[2] Microcurrent technology and magnets are used to control pain. General or local unconsciousness or polarity-reversal, as synonyms of anesthesia, may help to understand the mechanism by which electrical current and magnetic fields achieve this pain control. The reversal of spinal and whole body polarity may be an adaptive mechanism by which the autonomic nervous system permits lower energy function under less than optimal circumstances. The persistence of reversal of spinal polarity, and its correction, may be a fruitful consideration in the treatment of Post Traumatic Stress and Chronic Fatigue Syndromes.

On the other hand (!), it is observed that the oscillation of polarity, that is the periodic reversal of polarity and subsequent repolarization, is normal and necessary. The cycle of waking and sleeping is an example of this normal oscillation of polarity. Injury causes a positive current to manifest in a negative field. It appears, therefore, that what is pathologic in polarity reversal is its non-resolution. Appropriate polarity reversal has a periodicity or frequency aspect.

Comparison studies of the effect of treating spinal polarity reversal employing chiropractic adjustment of C-7, or acupuncture of GV-14, or SOT pelvic blocking needs to be performed

Conclusion

It appears that there exists a steady state DC electromagnetic current and field pattern in-around the human body. That it is polarized suggests that the continuously flowing current abides a specific direction in the body. Interference with this current interrupts the polarity. Injury causes an interruption of normal polarity.

Reversal of spinal polarity may be an adaptive reaction to injury stress overload. One might say that this reversal results in decreased sensitivity, decreased vitality-energy, and decreased consciousness in addition to compromised kinesiologic, physiologic, and neurologic functions. Restoration of normal spinal polarity is not only helpful in contributing to the health of the patient, but provides the applied kinesiologist with a less distorted patient symptom picture.

These indications suggest that there are principles of polarity and electromagnetism that comprehend musculoskeletal, acu-meridian, physiologic, and neurologic dimensions of human function. We know the importance of correcting the condition conventionally referred to in AK as “switching.” Based on the observation of the effect of the reversal of spinal polarity, switching is a component and possibly an adaptive reaction of the more profound loss of spinal polarity. The restoration of spinal polarity should stand high on our list of priorities of patient care.

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Functional Spinal Cord Neuropathy Secondary to Acceleration/Deceleration Injury

John M. Corneal, D.C., DIBAK

Abstract

Acceleration/Deceleration accidents causing hyperextension/hyperflexion injury of the cervical spine create significant functional changes. These changes eclipse current medical diagnosis and treatment. Traditionally, chiropractic education has explained such injuries in a medical perspective ending such discussion with almost an aside to adjust the spine. Several hundred cases over the last eight years show such injuries cause insidious spinal cord neuropathy that is life threatening. The most effective form of therapy is neuromuscular in nature and applied kinesiology techniques offer the diagnostic insight necessary to treat this dangerous condition.

Introduction

Patients present with a history of some form of acceleration/deceleration injury. These are not necessarily motor vehicle accidents. Any hyperextension/hyperflexion injury, such as falls, slip and catch, missing a step, etc., can cause cervical spinal cord involvement. Because there is spinal cord/central nervous system involvement the symptomatic possibilities are endless. Symptoms may be musculoskeletel and/or organ related. Patients with long-term involvement complain of low energy and fatigue and symptoms related to compromised resistance. They must carefully manage their health as any stress on their systems will result in symptomatic distress. A consistent characteristic in all cases is their intuitive unwillingness to put their heads into extension. They do not sit in the front of movie theaters, paint ceilings, do overhead work, star gaze, or attend airshows. Their preferred position is neck/head flexion. If the injury is decades old, many of these patients have entered professions that involve paperwork, thus working in a head/cervical flexion position a large part of the day. Computer use has exacerbated these patients' symptoms, due to decreased cervical flexion from using computer monitors.

Methods

Examination

Although the symptomatic pictures are unlimited, the following examination findings are consistently present:

1. +3 muscle weakness (Kendall) of the wrist extensors bilaterally. In only the mildest cases is vortex pressure, as described by Walther,[1] needed to reveal the weakness
2. +3 muscle weakness of all neck flexors in a head neutral position only
3. Multiple muscle weaknesses of the upper and lower extremities. These weaknesses do not typically respond to the 5 factors as previously reported by Bandy.[2]

4. Palpable areas of pain such as the popliteal fossa, tarsal tunnel, upper trapezius muscles, etc.
5. Organ sensitivity to palpation. These could include small and large intestines, liver, gall bladder, uterus, etc.
6. Cranial faults.
7. The elimination or reduction of all previously noted indicators with patient cervical flexion. This is a tucking of the chin rather than a moving of the head towards the chest. +3 muscle weakness will become +5, superficial sensitivity is eliminated, or significantly reduced (80%), and organ sensitivity is reduced (60-90%).

Numbers 1,2, & 3 indicate motor involvement. Number 4 indicates sensory involvement. Number 5 indicates organ involvement. If all change with head flexion, only one thing is common to all three-the spinal cord.

Radiographic Findings

A weight bearing standard series is taken with the addition of flexion and extension studies. Some loss of the cervical lordosis is present whether it is in a single motor unit, loss over the entire length, the so-called military neck, or, reversal of the cervical spine. In moderate to severe cases there is an anterior displacement of C5 on C6. This displacement sometimes increases on flexion. On cervical extension C5 will move into a posterior displacement. Total anterior to posterior displacement sometimes is as much as 4-6mm. If the injury sight is not C5, the next most frequent sight is C4, and the least frequent C6. The anterior and posterior motion is an indication of anterior and posterior longitudinal ligament laxity. The age of the injury does not appear to affect the laxity. This motion was found in cases that were five to ten years post injury.

Treatment

Treatment begins with the examination and treatment of all muscles involved directly or indirectly in cervical flexion and extension. Most highly involved are the scalenes, with emphasis on the middle scalene, and sternocleidomastoid. Frequently, the hyoid muscles are involved with emphasis placed on the sternohyoid and the geniohyoid. If involved, the platysmus will require multiple therapeutic sessions because involvement of multiple fibers will mean that after one area is treated another area will appear. The deep neck flexors such as the longus colli and intertransversarii are very painful to treat but treatment can be imperative to resolution of the condition.

Because these are injuries of force more than speed, golgi tendon organ proprioceptors are most frequently functionally disturbed. Second is spindle cell proprioceptor involvement needing strain/counterstrain therapy, and lastly, spindle cell toning techniques.

Cervical adjustment is necessary in less than 1% of the cases.

Ligament and disc nutritional support can be administered at the physician's discretion.

Results

Minor injuries are resolved in one treatment. Proper treatment brings immediate change of the examination findings usually 100% resolution except for the organ indicators. The organ indicators improve 60-90%. This reduced response is probably due to tissue inflammation.

Most patients report 75-90% improvement in structural and muscular symptoms immediately following the initial treatment. 99% return for the follow-up visit feeling as good or better than after the first treatment. Organ related symptoms show immediate response. 95% of the patients have total resolution of organ symptoms within a maximum of six months depending on genetic prowess, life style, and length of the compromise.

It was interesting to note in post treatment radiographs two days after initial treatment that there appeared to be no change in the noted anomalies although objective and subjective indicators had changed dramatically. Three-month post treatment radiographs showed a decrease in posterior and anterior displacement indicating longitudinal ligament tightening, thus stabilizing the annular fibers of the disc. The author's observations concur with Bandy[3] that it appears to take up to six months healing time in severe cases. Being much more of a clinician than a scientist I abandoned further patient radiation exposure, satisfied with the clinical results.

Rarely is cervical adjustment necessary. Once normal proprioceptor function is restored the structural malpositions, fixations, and subluxations are resolved through normal muscle tone and length. If adjustment is indicated it is an anterior to posterior adjustment as described by Walther[4] for cervical disc syndrome. Cranial faults are eliminated through muscle balance as well. This finding was recently noted by Leaf.[5]

In the author's early stages of therapy development the patient was cautioned against extended periods of head extension. Supplementation was prescribed for disc and ligament support. After eight years of development, it is observed that clinical outcomes appear based more on the doctor's competency in resolving the neuromuscular anomalies than any other therapeutic regiment. Nutritional support has been directed at chemical imbalances secondary to organ/tissue stress rather than directly to the cervical injury with better overall results.

Discussion

I consider this injury the most dangerous of any condition seen in a chiropractic practice. Undetectable in a medical milieu, the entire system is affected. It reduces the entire body function. Slowly and prematurely the genetic reserves are exhausted as the entire body struggles to perform normal routines while neurologically compromised. The result is the premature failure of the system determined by the genetic constitution of the individual.

The key to diagnosis is the observation that positive examination findings are improved with head flexion or they are exacerbated with head extension and, that these positive examination findings are distributed over a greater area than just the brachial plexus.

The question that remains is what is the focus of the spinal cord irritation? Is it disc in nature, pressure caused by segmental misalignment, or some other yet to be discussed etiology? Observed responses to therapy would seem to rule out the existence of disc injury. Rather, as Goodheart[6] stated, if there were disc involvement, it would appear to be inflammatory in nature. The instability of the disc caused by laxity of the anterior and posterior longitudinal ligaments on flexion and extension would support this hypothesis.

It would appear that the loss of cervical curve is not a condition, but compensation by the system to stabilize the injury. It is creating cervical flexion to relieve spinal cord pressure while allowing the head to be level. Current thinking that treats this condition with a posterior to anterior adjustment to reestablish a lordotic curve needs critical review. Posterior to anterior cervical adjustments are, in fact, contraindicated. Previously treated individuals have reported worsening symptoms with traditional manipulation. Others have reported neurological symptoms immediately following such treatment including visual changes, flashes of light, severe headaches, nausea, and vertigo.

Conclusion

Practitioners of the healing arts that practice applied kinesiology techniques have an opportunity to uncover and treat a potentially devastating condition that is wide spread in the general population. With simple therapeutic technique life threatening spinal cord compromise at the cervical level can be completely eliminated in a short therapeutic time frame.

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Acid/Alkaline – Terminology and Physiology in Applied Kinesiology

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Abstract

Since its start in the mid sixties, applied kinesiology has always been dealing with the acid/alkaline situation especially in chronic cases. The founder, George Goodheart, introduced a terminology that was based on the teachings of Hawkins and Lee. This paper is presented to discuss the physiology and present common terminology in order to facilitate the integration and use of applied kinesiology in complementary medicine.

School medicine, seldom being successful in the treatment of chronic disease, has avoided issues of acid-alkaline imbalances. These are however one of the most important topics in acute care, especially in intensive care units.

Complementary medicine, being involved with the treatment of chronic conditions, has been putting more and more importance in the acid alkaline imbalances. The writings of Sander, Glaesel, Worlitschek, Pischinger, Heine, Rauch and others form the basis of the treatment.

The terminology in school medicine differs from that used classically in applied kinesiology. However, the same basic physiological principles form the basis for both groups.

I. Physiological facts and definitions

A. The amount of acidity or alkalinity is measured as pH with a pH of 7 being neutral (like water), a pH of 1 being extremely acid (like HCl), and a pH of 14 being extremely alkaline (like $NaHCO_3$).

Acid: a substance which can donate H^+ ions in a watery solution

Base: a substance which can take up H^+ ions in a watery solution

Acidosis: A decompensated decrease of the plasma pH below the range of normal.

Alkalosis: A decompensated increase of the plasma pH above the range of normal.

Buffering system: A mixture of weak acids and correlating bases. In the human body, the combination of the bicarbonate/carbonic acid buffering system with the breathing out of CO_2 makes a very potent and rapid buffer.

Blood pH: Blood/serum levels are 7.32 - 7.43 for venous blood and 7.35 - 7.45 in arterial blood. The pH is kept within this narrow range by a number of buffering systems, as described by the equation:

$$pH = pK + \log \frac{\text{bicarbonate + proteinate + hemoglobinate + phosphate}}{\text{Carbonic acid + lactic acid + other acids}}$$

pK is defined as the value given a solution in which the acids and bases are in balance. In other words, the value at which there is the highest buffering capacity. For human plasma this is 6.1.

$$pH = pK + \log \frac{Base}{Acids}$$

$$pH = 6.1 + \log \frac{20}{1} = 6.1 + 1.3 = 7.4$$

What this means in simple words is that our blood has a ratio of bases:acids of 20:1; i.e. nature provides us with 20 times more bases than acids. The purpose and reason is obvious: we have to be prepared to deal with a lot more acids created in daily life than with bases!

The relationship of the acid - alkaline state with the essential minerals K^{+}, Ca^{++} and Mg^{++} is described in the equation of Szent Gyôrgi:

$$\frac{K^{+} \times HCO3^{--} \times HPO4^{--}}{Ca^{++} \times Mg^{++} \times H^{+}}$$

B. Different pH in different areas – diagnostic and therapeutic consequences

The pH is remarkably different in various compartments:

1) Saliva

Oral pH has optimum levels of 7.0 - 7.4, i.e. neutral or slightly alkaline.

George Goodheart, based on the works of Hawkins and others, always reminds us how important saliva pH is:

The carbohydrate digesting enzyme ptyalin becomes ineffective in a pH below 6.5.

Optimum saliva pH helps regulate HCl secretion in the stomach.

Hawkins points out that fresh saliva usually contains more $C0_2$ than room air, which means that actually two measurements of saliva would be most useful: the first measurement one minute after collection followed by a second measurement one hour later. He made the observation that the more the pH increases after one hour - due to the evaporated $C0_2$ - the better that is as an indicator for the patient's health!

- clear, watery saliva always indicates a lack of Calcium!
- B-Complex increases ptyalin (more so than B 1 alone)
- the higher the phosphorus content of the patient's diet, the more acid the saliva
- smoking lowers saliva pH
- sweating elevates saliva pH
- psychological stress makes saliva more acid
- low stomach HCl and/or low thyroid function lowers the digestive capacities for organic acids as in fruits and vegetables

2) Stomach

Stomach pH is highly acid with an optimum of 1.5 - 2.5. The HCl is excreted by the main cells of the stomach according to the following equation:

$NaC1 + C0_2 + H_20 <===> NaHCO_3 + HCl$

While the HCl acidifies the stomach, the $NaHCO_3$ is transported to the liver, pancreas and other basophilic organs via the bloodstream.

The carbonic anhydrase is a zinc dependent enzyme, i.e. any factor(s) that contribute to a lack of zinc may more or less interfere with its capacity.

3) Small Intestine

Thus, duodenal pH becomes highly alkaline through the bile and pancreatic juices as well as the various excretory glands (Brunner, Lieberkuhn etc.). Throughout the small intestine, the pH gets lower and lower, primarily due to metabolic processes and the action of bacteria - the most important of which is Lactobacillus acidophilus.

4) Large Intestine

In the large intestine, the main beneficial bacteria is the L. bifidus type which helps keep the stool pH on the acid side - with a pH of less than 6.5 being the desirable threshold. With a stool pH of above 6.5, the excretion of ammonia would be impossible, leading to hepatotoxicity due to intestinal intoxication (hepatic encephalopathy).

5) Urine

In the urine, major pH shifts are physiological during a day's cycle. Most authors agree that a slightly acid first morning urine is optimal (6.2-6.5), with the average patient's morning urine often being in the 5.0 to 5.8 range.

The kidneys are probably the most important organs in acid/alkaline control, and the morning urine just shows the sum total of the kidneys' excretion during the night, collected in the bladder.

Measuring urine pH alone during daytime does not make a lot of sense, as the shifts from acid to alkaline are very sharp, i.e. go from very high to very low within a short period of time and vary in every patient.

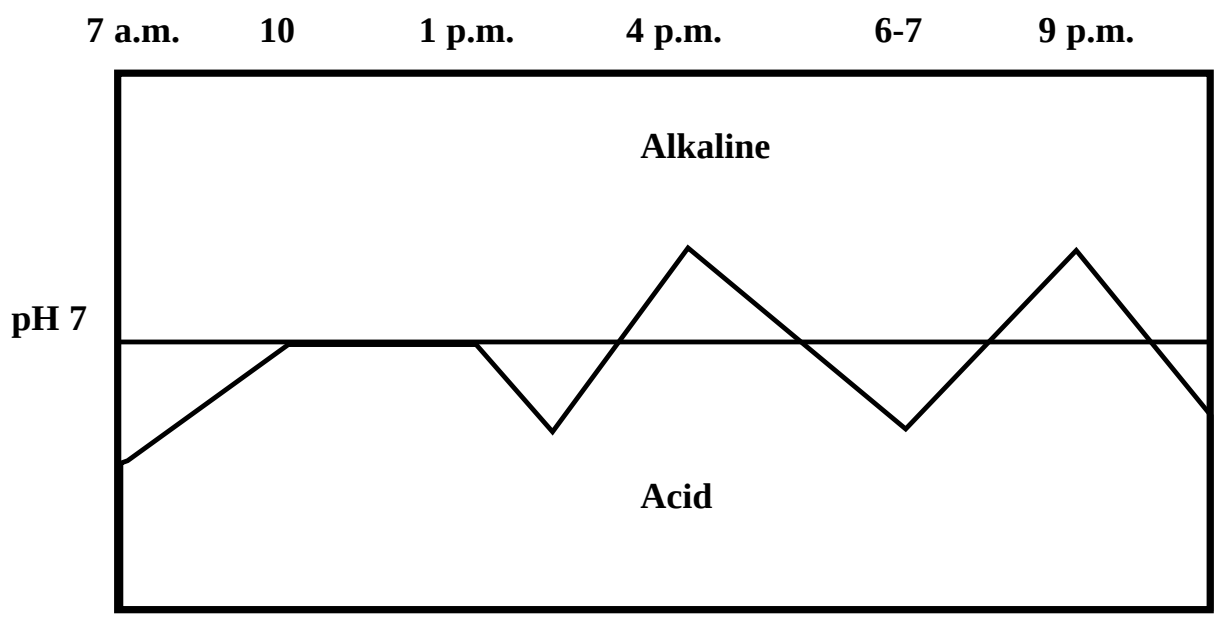
Ideally, the shifts in urine pH are:

7 a.m. acid -> alkaline flooding, leading to a neutral urine at 10 a.m. changing around 1 p.m. to acid -> alkaline flooding, leading to an alkaline urine at 4 p.m. changing to -> acid urine around 6-7 p.m. and finally to alkaline urine at 9 p.m.

6) Vagina

Vaginal pH has an optimum of around 4.5 to 5, i.e. quite acid, due to the bacterial Lactobacillus flora named after Dôderlein. It is the beauty of nature that the sterile baby is *infected* with these bacteria which help implant the Lactobacillus strains in the small intestine!

Table 1



7) Intraarticular

Intraarticular pH is alkaline with a pH of 7.4. Changes in the pH, either acid or alkaline, diminish the chondrocytes, increase the intracytoplasmic filaments, create an increased looseness of the collagen fiber mesh work and split the collagen fibers.

8) Skin

In babies, the skin/sweat pH is around neutral - and never does a human smell better (at least with empty diapers!). Later on in life, sweat is one of the main additional routes except breath, urine and stool via which we excrete acid. The often quoted optimum skin pH of 5.5 is normal, because we all have to excrete acids, but it is far away from the optimum value of a healthy baby!

9) Intracellular versus extracellular

A big source of misunderstanding is the lack of differentiation between intracellular and extracellular. What happens if, due to a lack of K^+ ions inside the cell, H^+ moves from extracellular to intracellular? The plasma value for pH will increase, i.e. show a more alkaline state - but inside the cell H^+ has increased, which really means increased intracellular acidity!
98% of blood potassium should be intracellular and only 2% extracellular!

Regarding the role of K^+ versus H^+, Burnell, Teubner and Simpson (1974), performed the following interesting trial: dogs were fed a potassium-free diet. This led to a decrease in plasma bicarbonate while in the urine pH increased due to the reduction of acid excretion.

Then, when potassium was reintroduced in the diet, urinary pH dropped deeply: the K^+ removed the H^+ from the intracellular space to extracellular (plasma!), from where it was then removed by the kidneys into the urine!

10) Respiration

As was stated earlier, the kidneys are important in the maintenance of the acid base balance. Almost as important is the functioning of the lungs. The rate of respiration is controlled by receptors that are sensitive to concentrations of CO_2, H^+ and O_2, in descending order of importance. Basically, the respiration rate increases until the levels of CO_2 have fallen. A drop in carbonic acid concentration will cause a corresponding shift from acid to basic buffers resulting in an elimination of H^+ loads.

During energy production, there is a high level of CO_2 created in the blood. This is then discharged through the lungs leading to changes in relative levels of H^+ ions. The major factor in the blood that controls these levels is hemoglobin.

Increases in the rate of breathing when there are no similar increases in the delivery of CO_2 to the lungs diminishes the CO_2 tension of the alveoli and results in decreased levels of H^+ ions and a rise in pH. This is respiratory alkalosis. Holding one's breath, stopping the discharge of CO_2, causes an elevation of CO_2 in the blood, a rise in the H^+ ions and a decreased pH or respiratory acidosis. Most commonly, decreased physical activity in fresh air contributes to increased acidity!

C. Consequences

So, in order to communicate properly, we have to define where, in which compartment of the body, we discuss the acid/alkaline topic.

This is really the problem when mainstream medicine people discuss the acid alkaline topic, and so it may be useful to begin the adaptation of some of the existing AK terms.

II. AK and the Acid-Alkaline Topic

A. Bilateral PMC Weakness

This finding is classically associated with Achlorhydria or Hypochlorhydria, and besides all other factors to correct - the supplementation of HC1 is suggested.

This may be necessary occasionally, but the more biological approach is to diagnose and treat any causes that might contribute to partial or total inhibition of the carbonic anhydrase reaction.

This automatically leads to zinc as the key mineral for carbonic anhydrase. This is very often low due to heavy metal intoxication like amalgam problems.

Another fact to consider is the stimulation of gastric secretion. Goodheart calls himself a "'constitutional' therapist according to Aschner, who has written extensively about the importance and treatment of the stomach weakness." A variety of herbal remedies, classified as "Amara," may be tested against the bilateral PMC weakness, and usually give excellent clinical result. *As a rule, anything that regulates gastric secretion will also positively influence all other digestive secretions.*

B. Are there acid and alkaline forms of K^+, Cu^{++}, Mg^{++} ?

Definitely $CaCO_3$ which is commonly contained in alkaline powder mixtures is very alkaline, but it remains in the intestines due to its very poor absorption.

Calcium citrate is commonly considered a cheap and effective form of calcium supplement, but also the calcium preparations made from raw bone are very effective.

Magnesium is usually given as the citrate, aspartate or glycinate form. The latter has the least effect as a laxative whereas magnesium sulfate - given orally - is a primary laxative.

Potassium can be given as aspartate, citrate or chloride. Be careful with $KHCO_3$ which is potentially kidney-toxic!

What seems to be hard to accept is the old differentiation into acid and alkaline forms of these minerals, as the effect that any mineral supplement has on the body really depends on a multitude of factors from resorption to the body's capability to process the acids to which the minerals are bound.

C. The effect of foods on saliva, urine, plasma, intracellular pH

This probably is the area that creates most misunderstandings. Changes in relative values of the H^+ ions can be caused by changes in eating patterns as well as metabolic changes in the body. While most meals are basically neutral or slightly acid, certain eating patterns when carried to extremes can alter body pH. However, it takes more than just a serving or two of a food group to change the pH of the body. An example of this is the actions of citric acid. From Biochemistry by McGilvery, "citric acid cycle intermediates are common constituents of fruits and vegetables, where they are partially or completely ionized. Their solutions are acid, but complete combustion takes up H^+." Another example of this is the intake of vinegar. Vinegar or acetic acid is oxidized in the body into CO_2 and H_2O. This results in no extra H^+ ions. Consequently, if the vinegar is completely oxidized, there is no change in internal pH changes in the body. The vinegar may effect digestion and other processes that are taking place essentially outside the body in the digestive tract, but not inside in other tissue areas. This a good example of the confusion that foods can have on the maintenance of the acid/alkaline balance. Generally, the digestion of most amino acids has no effect on the H+ balance. However, the oxidation of cysteine and methionine containing proteins is one of the major sources of H^+ in the diet. Hawkins, as reported in the AK literature by Goodheart, described the general effects of foods on the differing areas of the body. That chart follows.

III. Buffering

One of the most important factors in health is the ability of the body to balance itself. In response to changes in pH, differing systems are called into play to reestablish homeostasis.

For example, in the case of gastric reflux, it is the ability of saliva to counterbalance the acidity of the gastric juices in the oral cavity. In a study from France, it was found that normal salivary composition is changed by increasing inorganic phosphates in patients with gastric reflux. These changes allow the body to better balance the effects of the increased acidity in the oral cavity.

In exercise, lactate levels rise and the respiratory rate changes in relation to these elevating levels. This shows the importance of the respiratory system in the maintenance of the acid-base balance. This can be readily seen when the kidneys are failing and the breathing pattern becomes rapid and shallow. Exercise also raises the levels of potassium in muscle cells and enhances the ability of the body to counter systemic acidosis.

FOOD GROUP	SALIVA	URINE
Vegetables potatoes fruit	Increased alkalinity	Increased alkalinity
Meat, fish eggs	Increased acidity	Increased acidity
Butter, cream fats & oils	Increased alkalinity	Increased acidity
Grains(breads & cereals)	Increased acidity	Increased acidity
Milk	Increased alkalinity	Increased acidity

Compensation for changes in the pH of the body is also handled by the kidneys. Here, the process centers around the reabsorption of potassium. Excess levels of H+ ions interfere with the excretion of potassium in the distal nephron. Another factor that occurs in the urine is that no bicarbonate is excreted.

The largest and potentially long term damage to the body due to uncompensated low level acidosis is its effects on bone. It has been documented that within a few hours of the establishment of an acidosis state, carbonate is lost from the bones. Conversely, when an alkalosis situation exists, carbonate is added to bone.

The buffering capacity of the urine is actually much more important than the pH alone. It can easily be measured according to the method of Sander, which has been re-established in medical diagnosis slightly modified by Dr. Bayer.

Five urine samples are taken at 6.00, 9.00, 12.00, 15.00 and 18.00 hours. The urine is then titrated both with acids and with bases, and the "Acidity Quotient" is calculated according to the method described by Sander. Ideal values are shown in *Table 2*.

IV. Conclusion

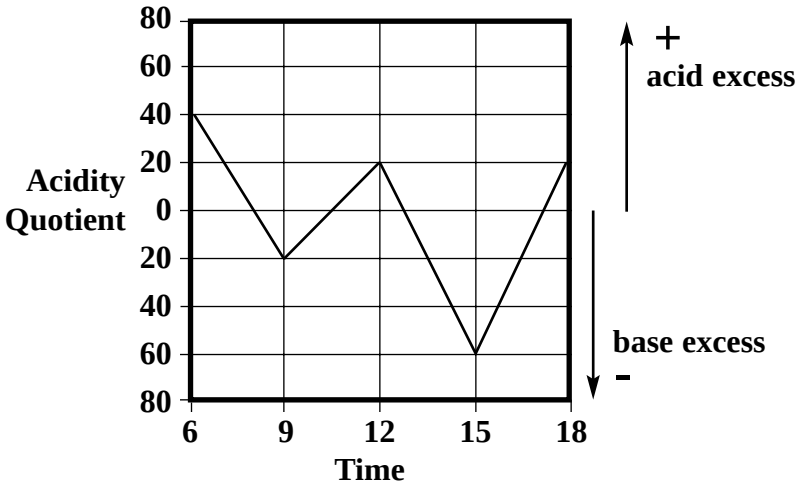
There is really not so much difference between AK and mainstream medicine once terminology has been cleared.

It is absolutely vital for a balanced acid-alkaline status to correct any disturbance of intracellular metabolism, as this is really where most of the H^+ -excess comes from.

Once nutrition has been modified to supply the body with enough good minerals and good water, then fresh air, the right amount of sunlight and good motion are essential.

The intensive therapy with highly alkalizing agents like $NaHCO_3$ is sometimes necessary at the start, but should be limited in time.

Table 2



Everything that is helpful in a given patient to stabilize or correct the function and metabolism of the cell walls and the mitochondrial membranes should be carefully tested with AK:

- Unsaturated fatty acids
- Antioxidants
- B-Complex or single vitamins when deficient

Testing for imbalances in the respiratory system should be conducted and corrected where found.

Finally, a paper based on dietary modification in cats may be appropriate. These cats had their acid/base balances deliberately altered and were offered diets of varying protein intakes. The idea was to see what diet the cats would eat in response to the change in their internal pH. Amazingly, or not, the cats shifted their normal diet to one that was consistent with balancing their pH back to normal.

What does all this mean?

Basically, the topic of acidosis and alkalosis is far more complex than the simple understanding that has been widely held in the teaching of applied kinesiology. First, one must consider what you are talking about, the area of the body that is being referred to. In the end, the basic fact is that our blood has a ratio of bases to acids of 20:1. Therefore, nature has provided us with 20 times more bases than acids. The perpose and reason is obvious. We have to be prepared to deal with a lot more acids created in daily life than with bases.

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Ligament Stretch Reaction as a Predisposition to Mitral Valve Prolapse

Steven J. Hansen, D.C.

Abstract

Five patients reporting having mitral valve prolapse at consultation were found with a ligament stretch reaction. Anatomy and physiology of the mitral valve are explained. Examples of connective tissue disorders are given with the incidence of mitral valve prolapse. Relation to ligament stretch reaction is hypothesized.

Introduction

The patient consultation is an extremely useful fact finding component of the patient work up. This is where the patient relays information about his or her complaint. Often patients will omit information from their questionnaire because they don't think it is important or relevant to their problem. With proper questioning, this information can be gathered. Many symptoms are often related to dysfunctions such as ileocecal valve/digestive disturbances, diaphragm, lymphatic congestion, or hypoadrenia/endocrine imbalance, etc.

An observation made in the office is that those patients presenting with a medically diagnosed mitral valve prolapse were found hypoadrenic, specifically with a ligament stretch reaction. A ligament stretch reaction is an indication of long term hypoadrenia. A mineral imbalance occurs due to depressed adrenal function causing weakening of the ligaments. With exertion, the ligaments and tendons micro avulse causing pain the next day. Pain after osseous adjusting is also common. The ligament stretch reaction is diagnosed by stretching a ligament and observing weakening of any strong indicator muscle tested immediately after the stretch.[1]

Evaluation

Five patients presented for evaluation of various complaints such as shoulder pain, neck pain and back pain. These patients described joint pain after stretching and activity and pain following both chiropractic and osteopathic manipulation. They also reported going to their medical doctor for heart related symptoms such as palpitations, tightness in the chest, etc. and were diagnosed with mitral valve prolapse.

Their examinations consisted of standard procedures including posture, temporal sphenoidal line palpation, manual muscle testing, orthopedic and neurologic testing. Indications of functional hypoadrenia were present. Sartorius muscle weakness, Rogoff's sign and category two were discovered. The ligament stretch reaction was diagnosed in the manner described previously.

Treatment

These patients were first treated to stabilize the ligament stretch reaction. This included dietary measures such as eliminating all stimulants including coffee, tea, cola, and refined sugars. Nutritional supplementation included Standard Process' Whole Desiccated Adrenal, and Allorganic Trace Minerals verified by oral nutrient testing. Cranial faults were evaluated and corrected in weight bearing position. Cervical and pelvic muscle imbalances were corrected using golgi tendon organ, muscle spindle cell and strain counter strain techniques. Once the ligament stretch reaction was stabilized, any subluxations and fixations were adjusted as determined by muscle weakness patterns, therapy localization and challenge.

Discussion

The mitral valve is situated between the left atrium and ventricle. It is conical shaped, pointing down into the left ventricle. It consists of two flaps or cusps made of strong, fibrous material attaching around the atrioventricular opening forming its base, and tapering into the ventricle forming its apex. The tip of each flap attaches to strong fibrous cords called chordae tendineae that further attach into the small papillary muscles anchored to the wall of the ventricle.[2]

During ventricular contraction, pressure within the ventricle increases. The papillary muscles contract to exert tension on the chordae tendineae. This keeps the mitral flaps from folding back into the atrium causing a back flow of blood into the atrium.[3]

Damage to the valve occurs from infection, physical trauma, spontaneous rupture of the chordae tendineae or injury of the papillary muscles due to myocardial infarction.[4] Then upon ventricular contraction the leaflets of the mitral valve bulge back into the atrium causing regurgitation heard as a click or murmur.[5]

Mitral valve prolapse is seen with disorders of the connective tissue. This is due to the cardiovascular system containing connective tissue. Specifically Marfan syndrome, the genetic connective tissue disorder, affects the retina, lens, aorta, mitral valve and musculoskeletal system. Mixed connective tissue disease is also seen with a 26% incidence of mitral valve prolapse. Generally ligament laxity is commonly seen with mitral valve prolapse.[6] Malnutrition as seen in anorexia nervosa, causes muscle and connective tissue wasting and is also seen with a high incidence of mitral valve prolapse.[7]

It is well documented that hypoadrenia causes ligament integrity problems as evidenced in the ligament stretch reaction. The patient then is more prone to ligamentous trauma.[8] A component to the mitral valve injury may include integrity problems of the chordae tendineae because of hypoadrenia. This is similar to laryngitis being a symptom of vocal cord disturbance in the hypoadrenic patient.[9]

Conclusion

Applied kinesiology methods offer a unique way of evaluation using manual muscle testing. The ligament stretch reaction is easily tested and is a common underlying factor in many musculoskeletal problems. It should be evaluated in problems such as joint pain after movement and exercise. It should also be considered with mitral valve prolapse.

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The Relationship of Food Allergies and Vertigo: A Case History

Steven J. Hansen, D.C.

Abstract

Case history of a 14-year-old male diagnosed with vertigo is presented. Physical examination, nutritional findings, treatment plan and outcome are presented as they relate to food allergies.

Introduction

Dorland's defines vertigo as the sensation of rotation or movement of oneself or of one's surroundings.[1] Patients may say they feel dizzy, off balance or the room is turning. The etiology is due to a disturbance of the equilibrium mechanism and should not be confused with the light headedness associated with orthostatic hypotension.

Vertigo has two classifications. Peripheral vertigo is severe, episodic and includes lesions of the vestibule, semicircular canal and eighth cranial nerve. Central vertigo is persistent, possibly affecting speech, vision, coordination, seen with headaches and includes the vestibular nuclei in the brain stem and temporal lobe connections. Disturbances include tumors, circulatory disturbances such as strokes and transient ischemic attacks, inflammatory reactions of the eighth cranial nerve and labyrinth, infections and traumatic injury.[2] Visual disturbances and the righting reflexes of the cervical ligaments and musculature may also be implicated in vertigo.[3]

This paper is presented to review the relationship between food allergies, histamine and vertigo. A case history is presented.

Case History

A 14-year-old Amish male came to the office complaining of dizziness, upset stomach and headaches. He described feeling off balance as if the room were turning. The onset was approximately two weeks, insidious, constant in intensity with no prior episodes. His mother said she had taken him to a medical doctor one week before seeing me. He was prescribed meclizine, which he said gave no relief.

In the patient history, he noted having encephalitis at age five. At age six he suffered head trauma from a fall from a piece of farm equipment. At age twelve he had a tooth extraction. During the previous spring, he had three episodes of headaches.

Findings

The patient could walk a straight line and exhibited no nystagmus. The external auditory meatus were clear of obstructions with no signs of infection. Postural analysis revealed an anterior rounding of the shoulders

with the right shoulder high. Multiple tender points were palpated over the temporal sphenoidal line particularly over the areas relating to digestion. Palpation of the first rib head, upper trapezius, and pectoralis major muscle groups were tender. Bringing the body out of distortion by cervical flexion improved the rib head tenderness, indicating a possible anterior cervical subluxation or cervical muscle imbalance. Scapular adduction also improved the rib head tenderness, indicating a possible lumbodorsal fixation, resulting in the lower trapezius weakening, causing the shoulders to round forward.[4] The abdomen was tender in all four quadrants particularly over the ileocecal valve. Manual muscle testing revealed bilateral weaknesses of the opponens pollicis, psoas and popliteus muscle groups. Cervical flexion strengthened the muscle groups. Challenge verified an anterior cervical subluxation of C-5.

Initial treatments were directed toward correcting the cervical anteriority of C-5. Adjustments included C-5 anterior, a universal cranial fault, an internal frontal cranial fault and a sphenoid tilt. The cranial faults were corrected weight bearing.

Subsequent examinations for food allergies revealed a weakening of a strong indicator muscle against oral testing of corn, wheat and histidine. Cervical flexion strengthened the positive finding. Further treatments were directed toward correcting the cervical muscle imbalance using muscle proprioceptive (golgi tendon organ, neuromuscular spindle cell) and strain counter strain techniques. Involved muscles included the sternocleidomastoid, scalene, intertransversarii, platysma, upper trapezius and cervical extensor group. Wheat and corn were restricted from the diet. Nutritional support was given including Standard Process' Multizyme, Zinc Liver Chelate, Allorganic Trace Minerals and Chlorophyll Complex Perles as determined by oral nutrient testing.

A bilateral lower trapezius muscle weakness revealed a lumbodorsal fixation. Palpation and challenge determined correction. Spinal and pelvic subluxations were detected using therapy localization, challenged and were adjusted. Muscle weakness of the psoas, quadratus lumborum and abdominal muscle groups were corrected using muscle proprioceptive techniques.

Outcome

The patient had frequent exacerbations due to traumas incurred on the farm, i.e., ran over by a cart, hit by a bailing bar, fell 40 feet into a silo. Cessation of vertigo began when objective findings of food allergies diminished as determined by manual muscle testing. Currently the patient has no recurrence of vertigo, and no objective findings of food allergies.

Discussion

Often patients presenting with vertigo without frank pathology are prescribed medications for symptoms without truly identifying the cause. Medications are prescribed to sedate the labyrinthine function (Dramamine) or depress the CNS/hypothalamus (perphenazine) or interestingly enough, are given an antihistamine (meclizine).[5]

Histamine causes excitation of the vestibular neurons as evidenced on studies on rats.[6] Also, due to its vasodilating properties, histamine alters the blood flow of the central nervous system and vestibular connections.[7] These stimulations to the vestibular center via histamine somehow trigger the vertigo. It is plausible that conditions that stimulate histamine release such as allergies and food sensitivities can be implicated in reactions of vertigo in those individuals who are sensitive to histamine.

Conclusion

The literature suggests that histamine is related to some forms of vertigo. Allergies are intimately related to histamine production and are commonly found in practice. Applied kinesiology offers a powerful tool to help those who have vertigo triggered by a histamine reaction related to allergies.

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Ayurvedic Pulse Analysis:
An Approach Incorporating Applied Kinesiology Protocols

James D.W. Hogg, D.C., DIBAK

Abstract

Ayurveda is a science of traditional health care in India that has been receiving increasing attention recently. This paper gives a brief introduction to some basic Ayurvedic principles, especially the influence of the Ayurvedic doshas and subdoshas on physiology. A traditional palpatory method of Ayurvedic pulse analysis is described and followed with a method developed by the author for evaluating these pulses using applied kinesiology muscle testing procedures. Clinical applications noted by the author in his practice are shared.

Introduction

Ayurveda, a system of health care indigenous to India, has enjoyed increasing interest in the alternative health care community. Ayurveda is, from the Sanscrit, often translated as "the science or knowledge of life." It is a system of analyzing, maintaining and restoring mind/body balance that has much in common with traditional Chinese medicine and is very congruent with the goals and philosophies of the International College of Applied Kinesiology. According to Dr. Ballantine,[1] there was considerable communication and sharing between Indian, Chinese, Himalayan, and Greek health care systems until about the time of the British colonization of India.

I first became interested in Ayurveda as a teacher of Hatha Yoga in Detroit during the early seventies. An East Indian friend of mine and I were discussing my care at Dr. Goodheart's office. He informed me that there was a system of health care in India that seemed very similar called Ayurveda. He said that, although western medicine was widely used by people of his homeland, it was used primarily for acute conditions. For chronic conditions, he said most Indians relied on an older, traditional form of health care called Ayurveda.

Since that day in Detroit I have run across numerous references to Ayurveda, the most popular source of which has been Deepak Chopra, M.D. I have felt great alignment with the underlying paradigm of mind/body balance as well as excited and tantalized by the potential of integrating Ayurvedic principles and procedures into my practice. Despite personal study and a visit to Maharishi University in Fairflield, Iowa for a personal Ayurvedic workup for myself and my family, I was frustrated in my efforts to embrace and incorporate Ayurveda in a significant way into my practice. Part of the problem related to fact that Ayurveda is a much more vitalistic approach to mind/body balance than I have been familiar with even with my background in applied kinesiology and yoga. The other part of the problem had to do with the lack of a good analytical tool to really get into the Ayurvedic system. The best I could do was to use bits and pieces, particularly some of the herbals like Ashwaganda as an adaptogen or Shardunika for restoring pancreatic function.

The beginning of my breakthrough came in 1994 when I had the opportunity to take a class in Ayurvedic pulse analysis and treatment from John Douillard, D.C. At the time of this Chicago class, Dr. Douillard had been coordinating one of the main clinics for Maharishi Ayur-Ved. He developed the first course in Ayurvedic pulse analysis available to American physicians. As you may know, pulse analysis is a major analytical tool in Ayurveda just as it is in traditional Chinese medicine. I was somewhat skeptical of Dr. Douillard's claim that we would be able to use what he taught us in our office Monday morning. Let me say that I was delightfully surprised at Dr. Douillard's skill as a teacher as well as the seeming ease with which I became competent in Ayurvedic pulse analysis. This was the tool I was looking for to really begin my clinical exploration of Ayurveda. Of course, as soon as I gained some confidence in the classic technique, I looked for a way to translate it into a muscle testing format. The rest of this paper will serve as a brief introduction to some basic Ayurvedic theories as well as the technique I've developed for analyzing the pulse points and some of my clinical observations regarding Ayurvedic pulse analysis and standard applied kinesiology findings.

Discussion

Before I begin a discussion of Ayurvedic "doshas," basic mind/body types and "subdoshas" areas of bodily function controlled by the doshas, I want to make it clear that I consider myself still to be a beginner in the study of Ayurveda. No doubt there are some of you reading this paper who are much more advanced than I. I am also aware that there are different traditions within Ayurveda and certainly do not pretend to understand, much less represent them all. With this in mind I can only ask you to be patient if it seems that I am trying to "teach my grandmother to suck eggs." My primary purpose is to present a tool that may give more advanced practitioners a way to bring Ayurveda more powerfully into the body of AK technique as well as give those new to, but curious about, Ayurveda a way to get started.

Within Ayurveda there are three main doshas or mind/body types. These are Vata, Pitta and Kapha. There are also combinations of these which are more realistic classifications. These include Vata/Pitta, Pitta/Vata, Vata/Kapha, Kapha/Vata, Pitta/Kapha, Kapha/Pitta and Tridosha, which is an equal balance of all three. Tridosha is probably as rare as pure Vata, Pitta or Kapha, with most people fitting into the other categories. The above are basically ways of categorizing and describing an individual's *Prakriti* or core substance. Prakriti defines our basic mind/body nature, those attributes with which we came into the world. Prakriti is considered to be unchanging. Once someone is classified by dosha this can be used to make recommendations as to diet, daily habits,[2,3,4] types of exercise[4] and other lifestyle considerations as well as help predict strengths, weaknesses and the most likely health problems to arise when their system is out of balance. Please see the references at the end of this paper for detailed information on these constitutional types.

The focus of this paper will be *Vrikriti*. Vrikriti is similar to Prakriti in that it describes how the elementary forces of the universe are manifesting in an individual but differs in that Vrikriti is dynamic, changing and reflects how the individual is adapting to entropy and a changing environment.[5,6] When an individual adapts successfully and fully, then balance is maintained and health is the result. When an individual is unable to fully adapt, Vrikriti loses its balance (the body/mind falls out of homeostasis) and states of disease may occur.

Each of the doshas govern specific area of body function.[6] Vata is responsible for all movement in the body. This includes circulation of body fluids, nerve transmission, peristalsis, movement of substances across cell membranes, cell division and the unwinding of DNA during cellular reproduction. Vata is the lead dosha and exerts powerful influence on the other two. Pitta is concerned with body heat and general

metabolism. It regulates digestion as well as glandular function throughout the body. It also controls intracellular function including glycolysis, the citric acid or Krebs cycle and oxidative phosphorylation. Kapha controls structural integrity. Strength of muscle and bone, the tight junction of cells, and chemical bonds all fall under the jurisdiction of Kapha. In particular Kapha is responsible for the health and strength of the joints and connective tissue.

Each of the three major doshas, Vata, Pitta, and Kapha are broken down into five subdoshas which govern areas of body function. When balance in the system is disturbed, a "spiking" can be observed in one or more of the subdosha pulse points. Each of the subdoshas is associated with specific anatomical regions and physiological functions. When a subdosha is out of balance the person may experience symptoms related to any or all of these anatomical or physiological areas. Following will be a brief description of the above associations, as well as my clinical observations relating subdosha imbalance to some familiar AK findings.

List 1

Vata when out of balance will also tend to throw Pitta and Kapha out of balance.

Prana Vata

- Anatomical area: head, brain, chest/lungs
- Physiology: sensory perception, especially auditory and tactile. Movement of nerve impulses, blood, lymph. Respiration, swallowing
- Effects of imbalance: worry, anxiety, insomnia, neurologic disorganization, respiratory problems Tends to take other vata doshas with it
- Clinical correlations: weakness of deltoids, anterior serratus, switching

Udana Vata

- Anatomical area: throat and lungs
- Physiology: speech, memory
- Effects of imbalance: speech defects, dry cough, ear problems, sore throat, tonsilitis, fatigue
- Clinical observations: weakness of sternocleidomastoid, possibly upper trapezius

Samana Vata

- Anatomical area: stomach, intestines
- Physiology: gastric and intestinal peristalsis
- Effects of imbalance: peristaltic imbalance, gas, diarrhea, malabsorbtion due to poor peristalsis rather than inefficient digestion
- Clinical observations: weakness of rectus abdominis

Apana Vata

- Anatomical area: lower abdomen, organs of elimination, sexual organs
- The colon is considered to be a primary site of Vata and is often the origin of Vata imbalances
- Physiology: elimination (movement) of solid and fluid wastes, sexual function, menstruation
- Effects of imbalance: constipation, diarrhea, menstrual problems, sexual dysfunction, urinary problems, intestinal cramps, prostate problems
- Clinical observations: weakness of tensor fascia lata, psoas, gluteus medius, gluteus maximus, piriformis

Vyana Vata

- Anatomical area: nervous and circulatory system, skin
- Physiology: circulation, especially heart beat, dilation and constriction of blood vessels and therefore blood pressure, sweating, yawning, sense of touch
- Effects of imbalance: high or possibly low blood pressure, poor circulation, heart arrhythmia, stress related nervous disorders
- Clinical observations: no consistent observations to date, possibly weak subscapularis

Pitta

Pachak Pitta

- Anatomical location: stomach, small intestines; Small intestines are thought to be the seat of Pitta
- Physiology: digestion and assimilation; Responsible for the digestive "fire"
- Effects of imbalance: heartburn, acid indigestion, ulcers, anemia, jaundice
- Clinical observations: weakness of rectus femoris, quadriceps, pectoralis major-sternal, hypochlorhydria

Ranjak Pitta

- Anatomical location: red blood cells, liver, spleen
- Physiology: RBC production, blood chemistry balance, distribution of nutrients; Sensitive to cigarette smoke, alcohol, impure food or drink
- Effects of imbalance: anemia, jaundice, various blood disorders, inflamation of skin, anger, hostility
- Clinical observations: weakness of pectoralis major-sternal, hypochlorhydria

Sadhaka Pitta

- Anatomical location: heart
- Physiology: heart function other than rhythm, contentment, lending "heart" or courage, decision making, memory
- Effects of imbalance: heart disease, memory loss, emotional problems "of the heart", indecision, decreased intelligence
- Clinical observations: weakness of subscapularis and supraspinatus, switching

Alochaka Pitta 20

- Anatomical location: eyes
- Physiology: sense of sight; Emotions: "seeing red" other effects of emotion on sight
  Facial expressions involving the eyes
- Effects of imbalance: visual problems, bloodshot eyes, eye disease
- Clinical observations: weakness of upper trapezius

Brajaka Pitta

- Anatomical location: skin
- Physiology: general skin health, tendency to blush or flush
- Effects of imbalance: skin diseases, rashes, acne, boils, skin cancers
- Clinical observations: none to date.

Kapha

Kledaka Kapha

- Anatomical location: stomach
- Physiology: responsible for maintaining health of stomach lining and secretions
- Effects of imbalance: poor or slow digestion; Kledaka Kapha imbalance will tend to create imbalance throughout the Kapha subdoshas. If someone has symptoms of all Kapha subdoshas, look at Kledaka first.
- Clinical observations: weakness of pectoralis major clavicular, hypochlorhydria; Weakness has also been observed in the quadriceps and rectus abdominis but may be the result of hypochlorhydria rather than primary Kledaka imbalance.

Avalambaka kapha

- Anatomical location: chest (the seat of kapha), lungs, lower back
- Physiology: responsible for strength of chest and back muscles; Health and lubrication of heart and lungs. Very sensitive to cigarette smoke
- Effects of imbalance: respiratory problems, congestive heart failure, back pain
- Clinical observations: imbalance of Avalambaka responds well to spinal and cranial/sacral work; Weakness of gluteus maximus

Bokhaka Kapha

- Anatomical location: tongue
- Physiology: sense of taste
- Effects of imbalance: Decreased of deranged sense of taste, salivary dysfunction
- Clinical observations: Therapy localization (TL) to tongue

Tarpaka Kapha

- Anatomical location: sinus cavities, head, cerebrospinal fluid (CSF)
- Physiology: Lubrication of eyes, nose, mouth; Production of CSF
- Effects of imbalance: sinus congestion, allergic rhinitis, sinus headache, cough (usually secondary to sinusitis)
- Decreased sense of smell
- Clinical observations: Weakness of sternocleidomastoids

Shleshaka Kapha

- Anatomical location: all joints of body
- Physiology: lubrication of joints, synovial fluid production
- Effects of imbalance: joint pain, hypermobile joints, joint disease
- Clinical observations: none to date

Ayurvedic pulse point analysis will reveal imbalance in the above subdoshas. It has been an important diagnostic technique in India for thousands of years and is widely used today. I have found in my practice that it often provides useful, sometimes key insight into the real problem underlying a patients' complaint, especially in chronically recurring problems. The next section of this paper will detail the method of pulse point analysis as taught to me by Dr. Douillard and expanded upon in my practice. Any errors or omissions in the basic pulse analysis should be ascribed to my imperfect memory or understanding not to Dr. Douillard's excellent instruction. It should also be noted that Dr. Douillard made mention of the fact that there were other traditions of pulse analysis in addition to the one he was trained in while in India.

The Ayurvedic pulses are located along the radial artery of each wrist. There is some overlap with the Chinese pulse points commonly used in applied kinesiology.[4] The most distal or Vata pulse point is just proximal to the radial apophysis, the same as the most proximal point in the Chinese system. The index finger is considered to be the Vata finger and is always used to feel the Vata pulse point. The Pitta pulse point is just proximal to the Vata point and is palpated with the middle finger. The Kapha point is the most proximal and is palpated with the ring finger. If you keep all three fingers resting comfortably next to each other while palpating the pulse the spacing is about right. For males, the right radial pulse is used, for females, the left. It is interesting to note that another system of Ayurvedic pulse analysis to which I have been exposed uses different pulse point locations but uses the same finger assignments for Vata, Pitta and Kapha.[3]

There are (at least) three levels at which the Ayurvedic pulses may be felt. The most superficial level, at which the pulse can just barely be felt, represents Vikriti, how the body is adapting, both normally and abnormally to various environmental factors. The deepest level, found by pressing hard enough to occlude the pulse and then letting up until it can just be felt returning, represents Prakriti, the unchanging mind/body constitutional type. The deeper the pulse, the more it represents long-standing conditions, with the deepest, the Prakriti being permanent. The more superficial the pulse, the more it represents a brief change in the constitution. For most clinical purposes it is best to focus on a midrange pulse about half way between the most superficial pulse that can be felt and the deepest pulse that can be felt. This represents conditions in the system that are not permanent on the one hand or ephemeral on the other. To put it another way, the mid-range pulse represents conditions with some chronicity to them and represent the metabolic problems most commonly treated in practice.

Let us suppose that we are treating a female patient, palpating the left radial pulse with index, middle and ring fingers placed at the appropriate points proximal to the radial apophysis. We are palpating in the mid-range to evaluate for chronic problems. What are we feeling for? It is said that the Vata pulse is sharp, like a snake striking; the Pitta pulse is bounding like a frog jumping; and the Kapha pulse is slow, majestic and rolling like a swan swimming. Ideally, this is how the pulse should feel at the corresponding points. While I admit that this is a subtlety I am still working on, if you should feel, for instance a Kapha pulse at the Vata point, it would be a sign of imbalance. In my practice I feel for two things. First, which of the pulses is strongest? (You may have to press a little harder on the kapha point because it is not as close to the skin, especially on heavier patients.) If all the pulses feel even and balanced, then everything may be fine. If one point has a noticeably stronger beat, this is the point to focus on for the second consideration.

The second consideration involves evaluation of the five subdoshas located at each pulse point. If you mentally divide each finger into quarters, these are the locations of the first four subdoshas at each pulse point IE. Apana Vata is the section felt under the quarter of your index finger closest to your middle finger. Subdoshic imbalances are felt as little “spikes” in the larger pulse. In the example above, you would feel that the Vata pulse under your index finger was the strongest of the three major pulses and as you focused on the Vata point you would feel a tiny “spike” almost like someone was tapping with a needle from the other side of the skin under the quarter of your index finger closest to your middle finger. On muscle testing, this person would be likely to show weakness of the tensor fascia lata, psoas, gluteus medius, piriformis or gluteus maximus, usually several of these. The fifth subdosha is indicated when you feel “spikes” in all four quarters. You may feel “spikes” in all four quarters simultaneously. In my practice I find it more common to feel the “spikes” alternate between the four quarters rather than all four simultaneously. Frequently “spikes” are felt at two points in a dosha point (e.g. Both Prana and Apana Vata) or two or more points spread over the three main pulse points.

When this was first described to me it seemed ridiculous to think that I would be able to feel these subtle variations by the end of the seminar, but I was pleased to find how little practice it actually took! I think chiropractors have a natural advantage in learning pulse diagnosis since we are used to focusing on tactile information. Once I figured out how to use muscle testing to confirm my palpatory findings, my speed and accuracy took a big leap forward. The use of applied kinesiology to evaluate the subdoshas of the Ayurvedic pulses involves a variation of therapy localization.[4] We have found that pulse and other acupuncture points can be therapy localized by either doctor or patient. Because isolation of the subdosha areas is more complex than isolation of the Chinese pulse points, I find it works best for the doctor to perform the therapy localization. The ideal approach would be to palpate for the "spike" first. Next tilt your finger so that the primary point of contact is the quarter under which you feel the spike. Test a previously strong muscle such as the pectoralis major, clavicular.[7] If there is subdoshic imbalance at that point the previously strong muscle will now test as "weak." During therapy localization, pressure should be kept the same as for the earlier palpation. For purposes of this paper, the pressure should be in the mid-range as discussed above.

The subsdosha points can be evaluated without palpation by simply performing twelve tests, tilting each finger individually to localize the four subdoshas under it. Pressure should be kept in the mid-range between most superficial and deepest palpatory pulse. The disadvantage without palpation is that there is no way to determine which pulse point or which "spike" is most intense which can be important when prioritizing therapy. The three pulse points will therapy localize without isolating individual subdosha areas, but I find this is only reliable when there is imbalance in the second or third of the four subdoshas.

Conclusion

Ayurveda is a natural partner to a wholistic, functionally oriented practice. Pulse point analysis using the above protocol can be easily integrated into an applied kinesiological approach to patient evaluation and can be especially useful when treating chronic or difficult cases. It is my hope that this brief introduction to Ayurveda and the use of muscle testing for pulse evaluation will inspire interest in those new to Ayurveda and provide a useful tool to experienced Ayurvedic practitioners. As always, your questions, comments and feedback are welcome and appreciated.

Summary of Pulse Point Evaluation

I. Palpate radial pulse

A. Left wrist radial pulse for females, right for males
B. First pulse point is just proximal to radial apophysis
   1. Vata = first point, index finger (most distal point)
   2. Pitta = second point, middle finger
   3. Kapha = third point, ring finger (most proximal point)
C. Pressure should be mid-range between:
   1. Lightest pressure at which you can feel pulse
   2. Hardest pressure at which you can feel pulse
D. Note which point has strongest pulse
   1. Deeper pressure may be necessary for Kapha, furthest from skin
E. Focus on point with strongest pulse

1. Divide point into four quarters.
2. Feel for tiny "spikes" in each quarter.

F. Feel for "spikes" in other two pulse points.

II. Muscle testing for pulse points

A. Use mid-range pressure as above.
B. Tilt finger so that quarter under which you feel "spike" is the primary contact point.
C. Test previously strong muscle while maintaining pressure over "spike."
   1. Weakening = subdosha imbalance
   2. Weakening at all four quadrants = fifth subdosha imbalanced
D. Alternately, omit palpation
   1. Perform twelve tests.
   2. Tilt each finger so that you can isolate and test each of four quadrants for each finger.

III. Refer to list 1 for anatomical associations and areas of dysfunction indicated by pulse point evaluation.

A. Therapeutic priority should be given to
   1. Subdoshas associated with strongest pulse point.
   2. Subdoshas highest on chart
      a. e.g. Prana Vata has highest priority of all subdoshas; Kledaka Kapha has highest priority among Kapha subdoshas.
   3. Vata subdoshas in general
      a. Vata imbalance will cause imbalance in Pitta and Kapha

IV.Treatment

A. Standard applied kinesiology corrections may be applied as indicated.
B. Test nutritional and herbal supplements using gustatory or olfactory challenge[7] against weak muscles associated with subdosha imbalances.
   1. Herbal preparations and aromatherapy from Maharishi Ayur-Ved[8] or Bazaar of India[9] can be especially effective when indicated by pulse evaluation and confirmed by muscle testing.

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Anterior Atlas - A Second Look

George N. Koffeman, D.C., DIBAK

Abstract

An assessment of the frequency of anterior Atlas subluxation. A differentiation is made between straight anteriority and rotational anteriority of one side only. My testing procedure and methods of correction of either type of subluxation is given.

Introduction

It has been asserted by Goodheart[1] and others that the anterior Atlas is one of the most frequent subluxations. It is usually deduced from a bilateral challenge of the transverse processes of Atlas A to P. The correction is to contact the transverses bilaterally and thrust A to P in the direction of the challenge.

Carl Ferreri, D.C.,[2] has an adjustment for anterior Atlas using his middle finger to adjust the anterior ring by contacting the junction of the soft and hard palate and giving a short stroke (about l-2 mm). This seems to have a corrective effect of good duration. I interpret this as a bioelectric effect rather than being a biomechanical response.

Discussion

After watching the outcome over time of the Atlas anterior correction, I began to look for a variation to account for frequency of recidivism. In observing posture, I noticed a turning of the head slightly from the mid-line without head tilt. I began to test the Atlas by the bilateral A to P challenge. This would give me the usual muscle weakness expected. I would then challenge P to A bilaterally and abolish the muscle weakness. Next I challenge A to P the transverse on the side of head rotation and re-establish the weakness. But, when challenging A to P on the opposite side, after P to A challenge on the side of head rotation, there was no muscle weakening.

After many tests over months of challenging of all patients, I concluded that anteriority of the Atlas is on one side only in approximately 75% and that straight anteriority of Atlas is not as common as is supposed.

Considering the position of the transverse ligament posterior to the odontoid of axis it seemed to me that it is much more likely the Atlas can rotate anterior on one side than to malposition straight forward.

When my test indicates an anterior Atlas, I use a bilateral contact or, occasionally, Dr. Ferreri’s palate contact.

When I determine that anteriority is on one side only, I have the patient lie supine with head turned away (opposite) from the affected side, I challenge for line of drive and recoil the Atlas on a drop head piece table (Note: it is not necessary to use a drop and I do not always cock the headpiece).

Sometimes I will use a side posture approach but this requires an awkward stance in order to meet the angle of drive requirement.

In the case of an axis involvement where I may want a torque incorporated into the delivery I will use a Grostic type of recoil instead of the Palmer.

The majority of chiropractors have never been trained in the recoiling adjustment. I feel that is a handicap that is difficult to overcome in a situation such as described here.

In the 1940s, when I was at Lincoln College, the technique department taught that an Atlas anterior on one side could be corrected by a posterior rotary adjustment on the opposite side. This was an idea of no merit and if any chiropractor of my vintage is doing this today, they are no doubt contributing to the production of anterior subluxations.

Conclusion

(1) Straight anterior subluxations are not as common as presumed.

(2) The bilateral challenge test is incomplete. The doctor must challenge in four variations to obtain complete information.

(a) Bilateral A to P

(b) Bilateral P to A

(c) Unilateral A to P, each side to determine correct side of adjustment.

(3) The most lasting correction is obtained with recoil adjusting.

(4) All muscle balancing should be done first and checking for ocular lock and psychological reversal completed before attempting to correct the Atlas.

(5) All postural analysis must agree with the findings of the challenges before an osseous correction is attempted.

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Joint Complex Dysfunction and the Decondition Syndrome: Contemporary Terminology and Pathophysiological Concepts for the Applied Kinesiology Practitioner

Philip Maffetone, D.C.

Abstract

The use of the term "joint complex dysfunction" may be more appropriate and accurate when considering the holistic approach used in applied kinesiology compared to the word "subluxation." In addition, this problem is associated with physical inactivity which leads to a decondition syndrome. More importantly, looking at the whole patient, including his lifestyle, is an important component of an applied kinesiology practice.

Introduction

Applied kinesiology (AK) is the technique which most ardently promotes the so-called triangle or triad of health.[1] The triangle is a visual representation of how the AK practitioner approaches patient care. It is believed that health restoration must involve structure, biochemistry and mental factors. The base of the equilateral triangle is body structure, one side body chemistry and the third side focuses on mental processes. Generally speaking, it is the job of the applied kinesiologist to help balance the three sides of the triangle; that is, to promote structural, biochemical and mental integrity, which allows the body to achieve an optimal state of health and fitness.

While the overall goal of AK is to promote balance in all aspects of the patient, one component of AK is specifically directed at restoring normal spinal function, a goal that is consistent with chiropractic, osteopathic and other techniques. In this paper, we will first discuss the basic components of an AK treatment approach and subsequently describe how such therapy may influence spinal dysfunction. We will then consider basic physical and nutritional assessments which should be included in the assessment and treatment of spinal dysfunction.

Discussion

Basic Components of an AK Approach to Patient Care: Manual Muscle Testing and the Five Factors of the IVF

In general, manual muscle testing is an assessment tool which helps the practitioner determine what factors of the IVF are in need of treatment. The five factors of the IVF include the nervous system, lymphatic system, vascular system, cerebrospinal fluid and the meridian system. The associated treatments involve spinal/extremity manipulation, stimulating so-called neurolymphatic and neurovascular reflexes, cranial manipulation (cerebrospinal fluid factor), and meridian therapy, respectively. The five factors of the IVF can be broadly viewed as aspects of care directed at the structural component of the triangle of health.

Manual muscle testing is also used to assess specific nutritional factors, such as the need for specific nutrients, food sensitivities, and specific dietary recommendations. This is the basic way in which an AK practitioner addresses the biochemical component of the triangle of health. More general nutritional recommendations may also be utilized, which serve to promote better health.

Certain mental and emotion therapies are also used by AK practitioners. In addition, basic aspects of patient care can promote psychological well-being, including educating the patient. Simply stated, a caring, warm, healing environment can do wonders for a patient. In a commentary published in JAMA, Norman Cousins explained the role of the physician:[2]

> *"Patients are a vast collection of emotional needs. Yes, psychological counselors are very helpful in this connection-and so are family and clergy, but the patient turns most of all and first of all to the physician. It is the physician's station that has most to offer in terms of those emotional needs. It is the person and the presence of the physician just as much as and frequently more than what the physician does that create an environment for healing. The physician represents restoration. The physician holds the lifeline. The physicians words and just his prescriptions are attached to that lifeline.*

This aspect of medicine has not changed in thousands of years. Not all the king's horses and all the king's men – not all the tomography and thallium scanners and two-dimensional echograms and medicinal mood modifiers – can preempt the physician's primary role as the keeper of the keys to the body's own healing system."

It is very likely that many of the so-called mental or emotional approaches which are utilized by AK practitioners, probably work due to factors described by Norman Cousins.

In the following sections, we will outline the nature of the spinal lesion as promoted through chiropractic, the deconditioning syndrome and associated aspects of patient care which are often not addressed by many practitioners.

Joint Complex Dysfunction vs. Subluxation

In a recent paper, Seaman demonstrated the inappropriateness and inaccuracy of the term "subluxation," and proposed that the term "joint complex dysfunction" better characterizes the nature of the spinal lesion treated by chiropractors.[3] In brief, the first edition of Webster's Dictionary (published in 1828), current modern dictionaries, and textbooks on biomechanics, medicine and chiropractic, all define subluxation as a partial dislocation or a lesion that is less than a luxation. From a neurological perspective a "subluxation" would result in compression of the related nerve, i.e., a neuropathic process that is commonly referred to as a radiculopathy. Chiropractors commonly use the terms "nerve interference" and "nerve pressure," which equate with nerve compression and radiculopathy. According to Bogduk:[4]

> *"For root compression to be deemed the cause, radicular pain must be accompanied by other features of nerve compression: numbness, weakness, or paresthesia. In the absence of such accompanying features, it is very difficult to maintain that root compression is the cause of any pain."*

The severity of neuropathic/radiculopathic pain, when it exists, should be emphasized. It is known that once neuropathic pain develops, it rarely goes away.[5, 6] Clearly, this does not characterize the type of pain that responds so dramatically to chiropractic spinal manipulation. Indeed, most DCs expect to see a significant reduction in pain after the first visit.

Devor states that, "the acquisition by injured nerve fibers of ectopic pacemaker capability is among the

fundamental pathophysiologic changes that underlie the emergence of neuropathic pain."[7] Neuromas, regenerating sprouts, and demyelination are thought to be responsible for the ectopic discharge of injured nerves.[7,8] Fortunately, it is known that neuropathic pain is a very uncommon occurrence, which suggests that subluxations are very uncommon clinical entities. It is for this reason, the term "joint complex dysfunction" (JCD) may be more useful.

Joint Complex Dysfunction

"Although the term joint complex dysfunction is new, dysfunction of joint complex structures has been described in the literature by chiropractors, physical therapists, and medical doctors. All agree that reduced mobility promotes pathological changes in the structures which make up the joint complex, and that pain, inflammation and stiffness are common manifestations of the lesion. Restoring mobility is often a primary objective of treatment for this very common type of musculoskeletal lesion."[3]

The pathological changes mentioned above refer to the atrophic and degenerative changes that occur in muscles, tendons, ligaments, joint capsules and associated joint complex structures. Associated muscle imbalances such as muscle shortening and trigger points may also develop.[3]

We typically perceive JCD as a condition that develops after spinal injury. However, it appears that a functional JCD - or asymptomatic JCD - can exist long before tissue injury occurs. Indeed, researchers have determined that lumbar intervertebral discs and muscles degenerate without any symptoms in apparently healthy volunteers ranging in age from 19 to 74 years. The asymptomatic disc degeneration is characterized by reduced discal height, loss of water content, and sometimes protrusion and prolapse. The asymptomatic muscle degeneration is characterized by atrophied muscles and enhanced fat deposition within the muscles.[3] In addition to such spinal tissue atrophy and degeneration, most people also exist in a state of cardiovascular deconditioning, due to sedentary living. However, because the symptom of pain is absent, people mistakenly believe that they are generally healthy. Then, at some point, tissue injury occurs which is of a sufficient magnitude to cause inflammation, nociception and pain; and now we have what is referred to as "the typical low back pain patient." At this point the patient begins to think that something is wrong.

The patient described above decides to seek the care of a professional. The medical doctor explains that it is back pain and prescribes an anti-inflammatory drug. This does not relieve the pain sufficiently, so the patient apprehensively enters a chiropractor's office. The great majority of chiropractors would view this patient as one who is suffering from a spinal joint problem that needs a spinal adjustment. Unfortunately, this is not necessarily the case. This patient is suffering from what is known as the "deconditioning syndrome." This term was coined by Mayer and Gatchel,[9] and is used to describe patients with a) the degeneration and atrophy that occurs in hypomobile spinal tissues (referred to by Seaman as joint complex dysfunction, i.e., spinal deconditioning), b) a reduction in cardiovascular/aerobic fitness, i.e., cardiovascular deconditioning, and c) pain. Clearly, such a deconditioned patient requires more than structural therapy, i.e. spinal manipulation and the additional treatment procedures related to the five factors of the IVF. According to Seaman:[3]

> "*Based upon the pathophysiological nature of joint complex dysfunction, a logical treatment approach would necessarily involve restoring joint motion, lengthening shortened/tightened muscles, trigger point therapy, rehabilitating deconditioned tissues, and reducing chemical mediator release. At the present time, neither the chiropractic or medical professions recognize the importance of treating patients in such an integrated fashion.*"

The AK practitioner, however, is trained to look at all aspects of the patient. In addition to the factors relating to the triad, other important lifestyle issues must be assessed and modification made as required. For example, many patients require improvements in their diet, and the addition of aerobic activity.

Too often, practitioners do not consider or address spinal dysfunction as described above. As a consequence, patients may receive imbalanced care.

Spinal Deconditioning: Implications for the AK Practitioner

Although we are focusing this section on the implications for the AK practitioner, the same implications apply to all physicians. Fundamentally, appropriate patient care involves a) assessment, b) assessment-based treatment methods, and c) lifestyle factors that are based on assessment/treatment methods and long term health considerations. Regarding joint complex dysfunction (spinal deconditioning), there are specific assessment tools, treatment protocols, and associated lifestyle factors which demand consideration. In this paper, we will briefly review some of the physical and nutritional assessments.

Physical Assessment

For many chiropractors, assessment is synonymous with a subjective evaluation of spinal function, such as mobility, pain, and muscle tension. For many AK practitioners, the subjective evaluation also involves an assessment of the five factors of the IVF. Once chiropractic care or a variety of AK-specific procedures improve these subjective indicators, it is often assumed the spinal integrity has been restored. However, in recent years, this notion has been challenged. As a consequence of an increasing body of knowledge regarding the deconditioning syndrome, clinicians have been urged to employ objective outcome measures. Liebenson has described this physical assessment and rehabilitation.[10-13] Liebenson explains that, "chiropractors or myofascial therapists who concentrate exclusively on passive intervention (i.e., spinal adjustments, trigger point therapy) to treat a specific pain generator (joint or soft tissue) are also placing patients at risk for deconditioning."[13]

Space does not permit us to outline specific physical assessment and rehabilitation procedures. However, this component of patient care, along with other factors mentioned, fits well with the holistic approached promoted in AK.

Nutritional Assessment

Nutrition and diet assessment is also an important aspect of patient care that is typically avoided by most chiropractors, osteopaths and medical doctors. This is a serious concern because some treatment procedures often reduce pain and make patients feel better, despite the existence of numerous nutritional deficiencies. Such an enhanced feeling of wellness, often permits patients and doctors to believe that a "healing" has occurred. In reality, if nutritional deficiencies are present, the therapy has done nothing more than mask ongoing pathology, i.e., JCD-spinal deconditioning.

Unfortunately, it is all too common for AK practitioners to base their nutritional interventions on only the outcome of manual muscle testing. This is an improper use of AK. For example, the evaluation of nutritional needs with AK methods only, permits an assessment during a specific moment in time and may not reflect the actual daily, weekly, or yearly needs of the patient. It is also possible that the placebo effect

may come into play during the evaluation and administration of supplements or dietary recommendations. In this situation, a patient may "feel better" as a consequence of an inadequate intervention, yet may still harbor unrecognized deficiencies. This scenario illustrates the power of the placebo effect, which has been a focus in recent years. For example, it was determined that some 6,931 patients received medical therapies that were later demonstrated to have no effect on the condition being treated. Nonetheless, 40% of patients reported excellent improvement, and another 30% reported good results.[14]

To get the most out of a nutritional intervention several authors support the use of a 7-day diet diary.[15-18] This assessment tool affords the doctor an opportunity to review a patient's basic pattern of nutrient intake, which is thought to be representative of a patient's standard pattern of nutrient consumption.

It is not uncommon for patients to consume a diet rich in omega-6 (n-6) fatty acids and deficient in the omega-3 (n-3) variety. Most patients consume over a 10:1 ratio of n-6 to n-3 fatty acids. It is thought that our intake of n-6 and n-3 fatty acids should approach a ratio of 1:1; the ratio on which humans evolved and our genetic patterns were established.[19]

In addition, many patients favor an excessive intake of refined carbohydrates at the expense of protein. Researchers at Stanford University have recently suggested that the ratio of carbohydrate to protein in the diet should not exceed 3:1. In fact, they propose that the best diet for all would consist of 45% carbohydrate, 15% protein, 20% monounsaturated fats, 10% polyunsaturated fats and 10% saturated fats.[20] More importantly, each patient has his own requirements, and one job of the practitioner is to help him find his optimal dietary balance.

Many patients consume levels of vitamins and minerals that are even below the RDA. These results are consistent with those reported for women in the United States Department of Agriculture's Nationwide Food Consumption Survey.[15]

It is known that bodily process such as tissue healing,[21-23] energy production[24-26] and neurotransmitter synthesis[27] require an adequate supply of many nutrients. Disturbances in each of these metabolic processes can negatively impact upon the recovery of the patient by serving to promote the deconditioning syndrome and compromise long-term health prospects. In addition, improper ratios of n-6 and n-3 fatty acids, as well as carbohydrate/protein ratios, can enhance inflammatory responses and reduce tissue healing.

Typical foundational dietary recommendations that apply to the great majority of patients involve eating foods which enhance n-3 fatty acid intake, balance carbohydrate/protein/fat intake, and increase vitamin and mineral intake. When the diet is not providing adequate nutrient intake, supplementation is vital to proper restoration of balance. Upon this foundation, it would be reasonable to add nutritional factors that were determined through AK procedures.

Lifestyle factors

The physical and nutritional suggestions mentioned above are invaluable therapeutic measures which need to be converted into lifestyle habits upon completion of treatment. Far too often, however, patients leave the doctor's office only to return to the habits that brought them into the office in the first place. To help prevent a recurrence of the deconditioning syndrome, aerobic deficiency, inflammatory processes, and other problems, patients must continue their healthy lifestyle routines.

Conclusion

At the present time, it is the rare doctor who focuses on addressing the deconditioning syndrome. Many practitioners tend to focus on palliative care, rather than true corrective care. This fact is demonstrated by our focus on passive interventions, i.e., manipulation and other procedures applied by the doctor. It should be understood that the deconditioning syndrome will not resolve unless the patient becomes an active participant in the treatment process. An important goal of AK practitioners is to consider the whole patient. In many cases, this may require a change in office procedures, billing and other aspects of the doctors physical practice.

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The Scientific Rationale for Selected Assessment and Treatment Methods Used in Applied Kinesiology Practice

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Abstract

This paper reviews the art and science of selected assessment and treatment procedures commonly used in an applied kinesiology practice, including some definitions and philosophy. One purpose of this paper is to acquaint the reader with the substantial research in peer reviewed, indexed journals which support procedures used in applied kinesiology. This information may be useful for practitioners, students, teachers, state boards, and institutions. A variety of assessment tools are discussed, including the use of patient information forms, blood pressure changes, vital capacity, body temperature and some brief comments about muscle testing. Treatment procedures discussed include various aspects of diet and nutrition therapy.

Introduction

Applied kinesiology is an assessment process which assists the practitioner in his or her evaluation of the patient's structural, chemical and mental function. This process includes the use of manual muscle testing to assess the function of the patient's neuromuscular state and is now commonly referred to as the functional neurologic assessment. Other aspects include some of the basic examination procedures used in mainstream medicine, some of which have been adopted and used in the assessment of function and dysfunction; history, dietary analysis, blood pressure evaluations, neurological tests, laboratory tests, and many others. The goal of the practitioner is to match the needs of the patient with the most appropriate therapies, which usually include techniques in meridian therapy (acupuncture), other "reflex" therapies (those of Chapman and Bennett), nutrition, hands-on muscle therapies, and manipulation (cranial, extravertebral and spinal). Most importantly, the patient's lifestyle must be considered. Included is the assessment of and recommendations for exercise, diet, stress, and other factors. This approach is not an *alternative* but a *complementary* one, as the potential need for mainstream medical care is sometimes necessary and may co-exist with complementary care.

This complementary approach is one of both art and science. The art encompasses the experience, expertise, and outcome of the practitioner while science includes basic physiology and its many models of energy production, neuromuscular actions and biomechanical activity. An individual human may not, however, always fit perfectly into a particular model. Successful assessment and treatment of a patient usually can not be accomplished effectively by either art or science alone, rather, a blending of both help make the outcome more successful. These two words are analogous to *clinical* and academic as defined in previous editions of *Dorland's Medical Dictionary* (1974): The word *clinical* pertains to the "observation and treatment of patients," and *academic* relates to the "theoretical and basic sciences."

The *art* of complementary medicine is the ability to observe, experiment and implement to find the optimal combination of therapies that best match the patients needs. It is the ability we need to recognize when

the body needs help, beyond what the patient tells us. The art also infers that some of the tools used in clinical practice may not have fulfilled the rigors of scientific endorsement. Many assessment and treatment tools have not been researched, or not researched adequately to determine why they might produce their results. As a result, their scientific acceptance may not exist. Rather, it is the ability of the practitioner to judge a tool by its usefulness to improve a specific clinical picture. In abstract terms, art is the body's dance, with full orchestra.

This dance can be analyzed with numbers; This is the *science*. It is the objective ability to measure our body's activity to determine its needs, and most importantly theorize the mechanism behind these actions. Science is the knowledge we gain by studying textbooks and journals; and it begins as art. An observation is made and it may be years or centuries before it's scientifically substantiated. A good example of this is dietary fiber. Some 150 years ago, Dr. John Kellogg and Sylvester Graham separately and by observation, proclaimed fiber could reduce the risk of intestinal problems, cancer and heart disease. By 1974, science began to accept these observations when British surgeons, writing in the *Journal of the American Medical Association*, reported fiber could reduce the risk of atherosclerosis and intestinal disease, including cancer. Today, it's a well accepted fact of life that fiber is a crucial part of our diet.

Combining both art and science in the clinical realm makes for a more efficient and holistic approach, and shifts the emphasis to the outcome rather than just understanding and accepting the mechanism of a particular therapy. Today more than ever, our health care system is very fragmented, with many specialties and sub-specialties. This has, in part, led to problems; more of the art is being abandoned for high technology.

Although the word holistic has been overused, abused and misunderstood for the past few decades, the fact remains that it is an appropriate word to use when describing the art and science of applied kinesiology. While the art of helping patients is easily seen as holistic, the science is usually thought of as focusing on the fragments of the whole. As Willis W. Harman (1991) writes in his *Re-examination of the Metaphysical Foundations of Modern Science*, "There is increasingly widespread agreement that science must somehow develop the ability to look at things more holistically. In a more holistic view, where everything, including physical and mental, is connected to everything, a change in any part affects the whole. In a holistic science there is no cause and effect (only a whole system evolving. Only when a part of the whole can be sufficiently isolated from the rest that reductionistic causes appear to describe adequately why things behave as they do, do the ordinary concepts of scientific causation apply. In general, causes are limited 'explanations' that depend upon context."

The true holistic approach in applied kinesiology is one where all aspects of the patient are considered. The information value of signs and symptoms are important; none are insignificant. In addition, all the signs and symptoms, as subtle as they may be, must be considered. In a patient with chronic low back pain, for example, many factors must be assessed beyond the low back. Whether this symptom is due to muscle imbalance, ligament sprain or strain, or joint dysfunction, in many cases the back pain itself is secondary an end result symptom of potentially a variety of structural, chemical and/or mental or emotional imbalances sometimes developing over a long period of time. By assessing the patient in a holistic way, through a complete inventory of the whole body and not just the low back, the practitioner can find and correct these obscure but often primary problems. Simply manipulating the low back serves only to treat the symptom. Unfortunately, this type of care may sometimes provide temporary relief giving both practitioner and patient the belief of therapeutic success.

Perhaps the most important feature of an applied kinesiologist is his or her ability to assess function and dysfunction, and restore the latter to the former. The first scientific observation of functional problems may have been made by Hans Selye (Selye 1976). Still a student in the 1920s, Selye observed these general

patterns of signs and symptoms and termed this as a syndrome of "just being sick." He eventually showed that there were clear physiological responses to a variety of stressors, all mediated through the adrenal glands, and taking place previous to the onset of disease. Today, applied kinesiologists can assess adrenal dysfunction with confirmation through salivary hormone tests. Related conditions, such as *seasonal affective disorder* (SAD) assessed and treated in complementary medicine for many years, are also now well recognized. (Rosen et al 1996, Rosenthal et al 1984).

More importantly, we recognize that unchecked dysfunction may lead to disease. For example, early stages of *carbohydrate intolerance* (Maffetone 1997) is referred to as *carbohydrate lipid metabolism disturbance* (Bassett et al 1990). The ensuing hyperinsulinemia is now known to be a precursor to a variety of diseases associated with Syndrome X, including heart disease, cancer and stroke (Reaven 1995). Diet therapy is the method of choice for improving function, and avoiding dysfunction and disease (Jeppesen et al 1997).

This paper briefly describes the research associated with some common assessment and treatment methods used in applied kinesiology which measure and treat dysfunction. The existence of these studies may assist those who are unaware of the scientific aspects of our profession.

Discussion

Selected Assessment Procedures

Several assessment methods used in applied kinesiology are listed here with related scientific studies. Some are very general items taken for granted, such as the use of dietary analysis and symptom survey forms, some more traditional items done in the office setting, and others more common to an applied kinesiology practice.

Prior to any treatment, the patient must be thoroughly evaluated. The first step in this process is taking a history. Sir William Osler said, "never treat a stranger" (Terezhalmy and Schiff 1986). This quote is very applicable in applied kinesiology, as one very important component is the relationship between practitioner and patient. Because of our emphasis on technology, practitioners have such extensive diagnostic information available that the one-on-one history is losing significance in our health care system (Laemmel 1996). Laemmel also states, "In order to achieve a true dialogue, it is necessary that [the practitioner] abandon the role-playing so common to physician-patient relationships and that he meet his patient on a person-to-person basis. In this process he will reveal his self-perception, his relationship to fellow human beings and, not least, his idea of what it means to be a healer."

Fowler (1997) describes skilled history taking more than examinations or test results as the key to a proper diagnosis. In a prospective study of 100 patients, Winkler (1979) showed that in only five percent did evaluations other than the history establish a diagnosis not made by history-taking.

Symptom survey forms are commonly used in clinical practice and are both reliable and valid for a variety of factors including discomfort and pain (Franzblau et al 1997), musculoskeletal disorders (Laubli et al 1991), workplace ergonomics (Baron et al 1996), and other relevant patient issues.

Dietary assessment is an important lifestyle aspect of applied kinesiology practice, and begins with patients writing down what they normally eat. There are three basic types of dietary data collection tools used by health care professionals and researchers. These include 1) direct weighting of foods, which may be the most accurate but is expensive, time consuming and requires a high level of participation, 2) diet recalls, which relies on the patient's memory bias, and 3) diet diary, which may distort usual food intake.

Each method has inherent strengths and weakness, but they still have good clinical value for both practitioner and patient. De Castro (1994) concludes that "the diet diary technique is the method of choice for investigations of the ingestive behaviors of free-living humans." And Bingham et al (1995) showed that although weighed records were the most accurate method of dietary assessment, only an estimated seven day diary was able to approach this accuracy.

Blood pressure recordings are an important assessment made not just during the initial examination, but throughout the course of care. In addition to blood pressure measurements to rule out hyper- and hypotension, evaluation of potential orthostatic or postural hypotension is important and has been associated with adrenal dysfunction. This is accomplished by measuring blood pressure in the lying and standing positions. Berkow (1992) defines orthostatic hypotension as a fall in blood pressure on assuming an upright posture of about 20/10 mm mercury. It is not a disease but rather a dysfunction of the mechanisms involved in regulating blood pressure. Functional aspects of this condition are much more common and can be seen with a fall in less than 20/10 mm mercury. Yang (1990) showed that disease-free patients with orthostatic hypotension had normal epinephrine levels in the recumbent posture but this adrenal hormone failed to rise upon standing. And Polinsky et al (1980) studied 16 patients with orthostatic hypotension, 12 with deficient plasma catecholamine responses with seven having no response to insulin-induced hypoglycemia. El-Sayed and Hainsworth (1996) state that, "salt is suggested as a first line of treatment" in some patients with orthostatic intolerance.

Exercise blood pressure normally increases with the type of exercise and its intensity. In most test situations, an increased systolic pressure may be as high as 180-190 mmHg, with diastolic changes increasing by less than 10 mmHg. Exaggerated blood pressure responses in normotensive patients may be considered a predictor of future hypertension (Nazar et al 1997). Mundal et al (1994) showed that rises in systolic pressure of 48.5 mmHg during bicycle ergometer exercise at a workload of only 100 watts was a significant predictor of cardiovascular mortality.

The mechanisms involved in the normal changes of blood pressure include pooling of blood in the abdomen and pelvis, which temporarily lowers the heart rate, increasing baroreceptor activity in the aortic arch and carotid bodies. This speeds up the heart rate and raises blood pressure. Both of these effects are the result of a sympathetic-mediated response resulting in a vaso motor response, and an increase in catecholamines. Other hormonal activity - including aldosterone from the adrenal cortex - is followed by a slight sodium and water retention. Berkow (1992) states that, "when hormonal responses are faulty, these homeostatic mechanisms may be inadequate for restoring the lowered blood pressure." If blood pressure is not compensated upon standing, the lack of orthostatic tolerance may cause the patient to experience light headedness, but other symptoms may include visual changes, head and neck discomfort, palpitations, anxiety and in some cases syncope (Jacob et al 1997). De Lorenzo (1997) discusses the association of orthostatic hypotension with chronic fatigue syndrome. Orthostatic hypotension is also common in athletes (Convertino 1993), and correlates with the combination of overtraining and adrenal dysfunction observed by the author (Maffetone 1996).

Measuring **body temperature** is another common assessment tool. Deviation from the normal 37ºC (98.6ºF) include nighttime temperatures which may drop slightly, and stimulate sleep onset (Murphy and Campbell 1997). Temperatures that are above normal may indicate infection, inflammation or other serious problems (although in the very young and elderly, and in some alcoholics, infections or inflammation may lower body temperature). Runners can show very high rectal temperatures 41ºC (over 105ºF) following races of 5,000 meters, or about 12 to 15 minutes maximum effort (McArdle et al 1991). Saltin and Hermansen (1966) showed that increases in body temperature paralleled oxygen uptake and exercise inten-

sity; Exercise at 50% VO_2max can raise temperature to about 37.3 C (99ºF) and intensities of 75% VO_2max can elevate temperatures to about 38.5ºC (101ºF). Patients who are working in a very physical job, those under emotion stress, and active children may also show slightly elevated normal temperatures (Guyton 1986). Also, non-steroidal anti-inflammatory drugs (NSAIDs), including aspirin, inhibit prostaglandin production which can effect thermoregulation (Murphy et al 1996) with results of decreasing body temperature.

Below normal temperatures may indicate thyroid dysfunction, or a subclinical hypothyroidism even when thyroid blood indices are normal (Northover et al 1983 and Vana et al 1990). Sehnert and Croft (1996) also showed that the temperature is a sensitive screening test, along with laboratory analysis, for the hypothyroidism seen following trauma, which they termed "posttraumatic hypothyroidism." These observations of the relationship between body temperature and hypothyroid were initially made by Barnes (1942), who eventually related this condition to cardiac dysfunction (Barnes 1972). The relationship between subclinical thyroid dysfunction and cardiac performance has also been described by Foldes et al (1987).

Vital capacity is commonly used by applied kinesiologists, and is a general indicator of the functional capacity in patients, and associated with overall health (Benfante et al 1985). Generally, vital capacity significantly increases from late childhood through adolescence independent of growth (Burrows et al 1983). From late adolescence into the early to mid 30s little change takes place but by the mid 30s it begins to diminish with age. Sparrow et al (1993) showed that high levels of cortisol may speed the deterioration of ventilatory function that occurs with aging. And Hitsuda (1994) demonstrated a positive relationship between thyroid hormone (T3) and vital capacity.

Vital capacity may be useful in the assessment of exercise induced bronchialspasm or constriction, commonly called *exercise induced asthma* (EIA). This condition is defined as a bronchialspasm or constriction, diminished air flow, with symptoms of wheezing, chest tightness, coughing, and difficulty breathing that is triggered by exercise (Weiler 1996). Assessment of this condition can be made with an *exercise challenge* by measuring vital capacity before and after easy activity. Easy exercise (including a warm up) should result in an *increased* vital capacity. In patients with EIA, their vital capacity does not increase following easy exercise, and often is diminished (Vacek 1997). In some cases, a hard effort may be necessary to observe these abnormal changes (Schoene 1997).

Vital capacity is also related to other factors, and may indeed reflect dysfunction previous to the onset of more significant dysfunction or disease:

1. Burchfiel et al (1997) shows that vital capacity is negatively related in men with subscapular skinfold thickness (body fat content), ECG abnormality, heart rate, WBC count and eosinophil count, and positively related to height, grip strength, physical activity and mean corpuscular hemoglobin concentration.
2. An increased blood leukocyte count and diminished vital capacity is associated with increased total mortality (Weiss et al 1995). Sparrow et al (1984) also showed the leukocyte count was inversely related to vital capacity.
3. Vital capacity is inversely related to weight gain. Chen et al (1993) showed that each kilogram of weight gain was associated with a loss of 26 ml in vital capacity.
4. Nutritional factors are related to vital capacity. Van Antwerpen et al (1995) showed a direct relationship between beta carotene levels and vital capacity in smokers. And Sparrow et al (1982) found copper positively related to vital capacity.

5. Lange et al (1990) suggests that at the onset of diabetes mellitus there is an accelerated decline in vital capacity.
6. Lower vital capacity is associated with the subsequent onset of hypertension (Sparrow et al 1988).
7. Chyou et al (1996) showed that pulmonary function during middle age was a significant predictor of cognitive function later in life.
8. A number of immune system associations are related to lowered vital capacity; increased levels of serum IgE (Shadick et al 1996), increased skin test reactivity to common allergens (Gottlieb et al 1996), and increased histamine response in the lungs (Rijcken et al 1988).

In clinical practice, the use of a handheld portable spirometer to measure forced vital capacity is an accurate tool (Rebuck et al 1996). Measurements from these units should not be compared with measurements made by larger more conventional devices. However, the accuracy of these devices is echoed by Malmberg et al (1993) who states, "the repeatability of the measurements with the pocket spirometer is close to that reported previously for flow-volume spirometry."

Muscle testing is the foundation of an applied kinesiology practice. It is vital that the practitioner use proper and proficient methods in testing muscles. This comes with both a knowledge of anatomy and physiology, and the art developed with experience. Through these actions, an effective assessment process evolves, and the likelihood of a more successful therapeutic outcome increases. Kendall et al (1993) states, "Science demands rigorous attention to every detail that might affect the accuracy of muscle testing. Failure to take into account apparently insignificant factors may alter test results. Findings are useful only if they are accurate. Inaccurate test results mislead and confuse and may lead to a misdiagnosis with serious consequences. Muscle testing is a procedure that depends on the knowledge, skill, and experience of the examiner who should not betray, through carelessness or lack of skill, the confidence that others rightfully place in this procedure."

The usefulness of isokinetic machines and other equipment to more objectively test muscles has not been shown to be suitable for clinical use (Kendall 1993). This is due to expense and its difficult use in the clinical environment. This equipment may, however, be useful for research purposes. Using force measurements from both doctor and patient, Perot et al (1991) demonstrated a significant difference in "strong" versus "weak" muscle testing outcomes, and that these changes were not attributable to decreased or increased testing force from the doctor performing the tests. Using electromyographic studies, Leisman et al (1995) showed distinctions between inhibited and facilitated muscles, and between muscle inhibition and muscle weakness due to fatigue. Regarding the optimal approach for clinical use, Kendall et al (1993) states, "our hands are the most sensitive, fine tuned instruments available," and Walther (1988) states, "the best 'instrument' to perform manual muscle testing is a well-trained examiner, using his perception of time and force with knowledge of anatomy and physiology of muscle testing."

The time factor employed by the practitioner during testing is another important aspect of manual muscle testing. Nicholas et al (1978) found that the duration of the tester's effort was a significant factor in ratings. In a similar relationship, Hsieh and Phillips (1990) showed a difference between patient initiated and doctor initiated methods of testing.

Schmitt (1996) described three different types of muscle tests: 1) doctor initiated, 2) patient initiated and 3) patient initiated to maximum contraction. All three types measure the response of the muscle during eccentric contraction. Each type differs in the level of pre-loading of the muscle prior to eccentric testing, and may have different therapeutic needs.

The words *facilitation* and *inhibition* (rather than "strong" and "weak") may be the most appropriate and neurologically accurate to describe the function and dysfunction of skeletal muscles respectively. While it is understood that even though the central state of the alpha motor neuron is a reflection of multiple facilitory and inhibitory effects, the final outcome is either facilitation or inhibition. (Excitation is when facilitation reaches the threshold for depolarization, where the "all or none" phenomenon takes place.) Muscle facilitation and inhibition may be due to a number of conditions; neurologic, biochemical and even psychogenic. Muscle inhibition secondary to joint dysfunction was described as early as 1965 by DeAndrade (DeAndrade et al 1965) and has more recently been described by others (Fisher et al 1997, Spencer et al 1984). Within the normal gait there exists normal muscle facilitation and inhibition. Muscular *imbalance* is described as a deviation *from the expected* normal facilitated or inhibited muscle, and is described by Janda (1986), Jull and Janda (1987) and Sahrmann (1987).

Selected Therapeutic Procedures

Diet therapy is commonly employed in applied kinesiology practice. Potter and Steinmetz (1996) describe the therapeutic effects of common dietary foods, with emphasis on vegetables and fruits:

1. The practice of all levels of medicine-both past and present-often involves the prescription of specific foods (almost always plants) or their potent derivatives, to treat a wide spectrum of illnesses.
2. Some of these foods include the Cruciferae, the allium family, celery, cucumber, endive, parsley, radish and legumes.
3. Plant foods have preventive potential and that consumption of the following groups and types of vegetables and fruits is lower in those who subsequently develop cancer: raw and fresh vegetables, leafy green vegetables, Cruciferae, carrots, broccoli, cabbage, lettuce, and raw and fresh fruit (including tomatoes and citrus fruit).
4. Soy products, which contains isoflavones, and other foods high in phytoestrogens, are associated with a lower risk of sex-hormone-related cancers. Phytoestrogens are also derived from some vegetables and berries as well as grains and seeds.

It is this author's belief that patients should ultimately develop their sense of instinct regarding dietary needs. This *macronutrient self-selection* is a topic of controversy, although many scientific studies demonstrate its existence, mostly in animal studies. Davis (1928) was one of the first to demonstrate the intuitive and instinctual aspects of self-selection of foods in human infants. Other researchers have shown various self- selection activity in animals:

1. Harper and Peters (1989) showed that rats will select between high and low protein diets to obtain adequate amounts of that macronutrient.
2. Miller et al (1994) provided evidence that rats on a self-selection diet ate most meals from a single macronutrient source.
3. Rieth and Larue-Achagiotis (1997) and Larue-Achagiotis et al (1997) found exercising rats on a self-selection diet ate more fat but lost more body fat than those on regular feedings.
4. Fromentin and Nicolaidis (1996) showed rats were successful at self-selecting the proper combination of foods to balance amino acid needs.
5. Cook et al (1996) found that cats select appropriate diets to maintain acid-alkaline balance.

6. Larue-Achagiotis (1992) showed that during the day, carbohydrate intake was higher in self-selecting rats; during the night, protein and fat intakes were significantly higher while carbohydrate intake was significantly decreased.

In recent years, scientists have leaned more about the possible mechanisms of self-selection. Tordoff and Friedman (1986) postulated that the relationship between food preference and intake is associated with glucoreceptors in the liver (which send messages to the central nervous system via the vagi). Bernardis and Bellinger (1996) describe the lateral hypothalmic area as being the location of dietary self-selection. Holder and DiBattista (1994) found protein intake following protein deprivation can be attributed in part to the oral sensory properties of protein. Heinrichs and Koob (1992) showed that the action of corticotropin-releasing factor was an important aspect in the control of dietary self-selection in rats. And Thibault (1994) showed that the nature of the carbohydrates (i.e. glucose vs. fructose) were important in self-selection in rats.

There are varying opinions regarding the patient's *ideal* macronutrient make-up. Some traditional suggestions include a predominant carbohydrate diet of 60-70%, with 12-15% protein and the remainder from fat (Williams 1995). Others have shown that these high carbohydrate intakes increase insulin production even in relatively healthy men and women (Coulston et al 1993), may not provide additional performance benefits for athletes (Hawley et al 1997), and may be disease provoking for postmenopausal women (Jeppesen et al 1997). Most importantly, excess carbohydrate can inhibit the use of fats for energy (Nestel 1993), which spares glycogen and blood sugar. High carbohydrate, low-fat diets may come partly from the fear of recommending too much fat and protein (Pendergast et al 1996). The glycemic index (GI) is a general measure of a carbohydrate foods ability to raise blood sugar and the production of insulin by the pancreas (Wolever et al 1994). High glycemic food (process cereal and grain products, sweets, fruit juice, etc.) produce higher levels of insulin which may have a negative impact on health. Certain factors in a meal can *lower* the glycemic index of the meal, including its fat, protein and fiber content (Joannic et al 1997).

Carbohydrate intake may also effect the mental aspect of the patient. Christensen and Somers (1996) explain the outcome of their study; "Results revealed that depressed and nondepressed groups consume similar amounts of all nutrients except protein and carbohydrates. Nondepressed subjects consume more protein and depressed subjects consume more carbohydrates. The increase in carbohydrate consumption comes primarily from an increase in sucrose consumption."

High glycemic foods can also adversely affect exercise performance. Carbohydrate consumption 45 minutes before exercise may have a detrimental effect on performance (Foster et al 1979). Bird and Hay (1987) showed that glucose consumed one hour before exercise had a negative impact on the workout. In addition, carbohydrate "loading" prior to exercise does not result in sparing of endogenous carbohydrate stores during exercise (Bosch et al 1993), nor does it spare muscle glycogen stores (Bosch et al 1994). Consuming large amounts of carbohydrates *following* exercise or competition is also a tradition for athletes who seek to replace lost glycogen stores. But a mixed meal of carbohydrate, protein and fat will accomplish the same (Tarnopolsky 1997).

The need for essential fatty acids from the diet is vital for good health. Broadhurst (1997) states, "Natural whole foods contain fats as structural components, and have a balance of polyunsaturated fat, monounsaturated fat, and saturated fat. Since we are still a Paleolithic species, adapted to eating only wild foods, it is difficult to justify the consumption of anything other than an overall balance of [fats] in an evolutionary sense. No natural fats are intrinsically good or bad—it is the proportions that matter. Variety is recommended in dietary lipid structure, degree of saturation, and chain length. Pathological n-3/n-6 polyunsaturated fat imbalance, obesity, and progressive glucose intolerance are consequences of adopting cereal grain based diets by both humans and livestock. Food processing and refining amplify these problems."

Increasing dietary fat intake can also increase lipoprotein lipase, which hydrolysis triglycerides allowing their fatty acids to be released and available for energy use in muscles (Borensztajn 1979). Consuming a diet too high in carbohydrates may diminish lipoprotein lipase and be associated with diminished ability to obtain fatty acids from triglycerides resulting in less utilization of fats for energy, increased dependency on carbohydrates stores and increased blood levels of triglycerides (Jacobs et al 1982). In addition to potential essential fatty acid deficiency, low-fat diets may be associated with dysfunction. For example, Deuster et al (1986) showed that amenorrheic female athletes consumed less fat (and more carbohydrate) than eumenorrheic female athletes. Low fat diets have been associated with significantly low levels of testosterone in men (Reed et al 1987).

Consuming a diet higher in fat (not a "high" fat diet), in excess of 30-35% of the calories, can be accomplished *without* risk of cardiovascular (Pendergast et al 1996) or immune stress (Venkatraman et al 1997). Golay et al (1996) showed the higher-fat, lower-carbohydrate diet improved fasting blood insulin and the glucose/insulin ratio.

The current U.S. Food Guide Pyramid suggests, for a 2800 kcal diet, 55% carbohydrate, 30% fat and 15% protein (Welsh 1996). But for many patients, this may not include adequate protein. Currently, daily protein requirements in the adult are set by the World Health Organization (WHO) at 0.75g per kg body weight for Western diets (WHO 1985). Some individual countries have modified this recommendation; the U.S. to 0.8g, Canada to 0.86g, Germany and Australia to 1.0g (Linder 1991). Many experts call for major revisions to these recommendations, with some proposing much higher amounts for active individuals and especially athletes (Lemon 1996). Lemon states, "Populations at greatest risk for consuming insufficient protein include any group that restricts energy intake (those on diets) or high quality protein sources (vegetarians) as well as any group that has a requirement higher than normal due to another existing condition (growing individuals)." In addition, Castaneda et al (1995) demonstrated that women who consume too little protein experienced significant losses in lean tissue, poor immune response, and muscle dysfunction.

Low dietary protein may also have an adverse effect of essential fatty acids, increasing their requirements (Hill and Holman 1980), and adversely affect the polyunsaturated-to-saturated fatty acid ratio (Bouziane et al 1994).

Regarding these diverse opinions on protein requirements, Reeds and Beckett (1996) state that, "Failure to resolve these difficulties stems in part from the word 'requirement,' which is used in different ways by different authors." Fortunately, by matching the protein needs of each patient rather than offering the same general recommendations for everyone, practitioners can avoid these academic conflicts.

Practitioners frequently make specific recommendations to patients who have certain imbalances in their physiology. One of the most common is the relationship between diet and inflammation. The series-2 eicosanoids have an inflammatory effect in the body, also creating associated edema and hyperalgesia (Portanova et al 1996). These are produced from arachidonic acid, found in many foods. It should be noted that the series-2 eicosanoids have a beneficial function in stimulating immune activity, microbicidal activity and recycling of damaged tissue. It is clear that an excess of these substances can be harmful, and not simply their existence. Balancing of dietary unsaturated fats to promote increased production of series-1 and -3 eicosanoids exerts a strikingly protective effect on tissue inflammation and injury (Lefkowith et al 1991). Of great significance is the increased production of the series-2 eicosanoids as a natural result of any repetitive activity (Almekinders et al 1993), such as walking, typing etc. In addition, weight bearing activity increases the series-2 eicosanoids significantly (Thorsen et al 1996) over non-weight bearing workouts (i.e. swimming). Desimone et al (1993) showed that the series-2 eicosanoids not only cause inflammation, but also bone loss. Krieger (1997) demonstrated that calcium transport is also inhibited by these eicosanoids (specifically by prostaglandin E2).

Prostacyline is an inhibitor of platelet aggregation and a vasodilator, countering the inflammatory and pain producing effects of the other series-2 eicosanoids. It may also promote the repair of cartilage (Dajani 1991). Certain foods may stimulate the production of prostacyclin, including ginger, garlic and onions. These have been used in complementary sports medicine for many years. Ginger (Zingiber officinale) has been shown to have anti-inflammatory effects (Srivastava and Mustafa 1992), possibly through inhibition of leukotrienes and series-2 prostaglandins. Bordia et al (1997) showed that a single dose of 10 g powdered ginger produced a significant reduction in platelet aggregation. Denyer et al (1994) showed that ginger has antirhinoviral properties. This may be both preventive and therapeutic for patients with colds. Ginger has also been shown to have anti-emetic properties, improving the symptoms of nausea (Meyer et al 1995, Sharma et al 1997).

Bordia et al (1996) have shown that garlic (Allium sativum) and onion (Allium cepa) may significantly inhibit thromboxanes when eaten raw, with garlic being more potent in this effect. Ali et al (1995) also showed that eating garlic resulted in a significant reduction in thromboxanes (along with a 20% reduction in cholesterol).

In applied kinesiology, the practitioner understands that each patient has individualized needs, and that no single "dietary recommendation" can satisfy the requirements of all patients.

In **nutritional therapy**, the same concept must be applied; each patient has his or her specific requirements, and these must be found through a proper assessment rather than give a particular nutrient for a named condition. Nutrition is such an extensive field but only a few examples can be given here.

The first concern when a practitioner finds the need for a given nutrient is whether the patient is eating foods containing that substance. Therefore, dietary assessment and recommendations are a primary factor in nutritional therapy. If patients require supplementation to their diet, the next potential obstacle is whether the patient has adequate digestion and absorption. A common problem in patients who have poor digestion of food and absorption of nutrients is hypo- or achlorhydria resulting in malabsorption as described below.

Malabsorption is often due to hypochlorhydria or achlorhydria - low levels or lack of gastric hydrochloric acid (Dickey et al 1997). This not only results in diminished digestion in the stomach, but the small intestine as the hydrochloric acid content of food (chyme) leaving the stomach is a significant stimulant for the production of pancreatic enzymes, and those in the small intestine as well (Guyton 1986). The lack of pancreatic enzymes in a patient may therefore be secondary to diminished or absent hydrochloric acid. Supplementing the patient with betaine hydrochloride or other acid producing tablets may improve the absorption of nutrients (Saltzman et al 1994, Russell et al 1994).

Hypo- or achlorhydria may be considered if the stomach pH is above 3 (Modlin et al 1994). Among the assessment tools used to assess hypo- or achlorhydria is the magnesium hydrogen breath test (Humbert et al 1994). Applied kinesiology has a useful protocol to assess and treat patients who are in a state of hypo- or achlorhydria.

Taking antacids may be counter-productive for efficient digestion and absorption, especially when hypo- or achlorhydria already exists. It is important for patients to understand that "neutralizing" stomach acids could not be achieved with any single or combination of acid inhibitory drugs (Brunner et al 1996). In mainstream medicine, the rationale for giving antacids is the fact that *between* feedings, the stomach normally does not produce any acidic secretion unless there is strong emotional stress which may stimulate acid production (Guyton 1986). Reduction of hydrochloric acid may also be the result of caloric restriction (Higashide et al 1997).

Hypo- or achlorhydria can have a significant effect on diminishing calcium and phosphate (Graziani et al 1995), vitamin B12 (Saltzman et al 1994), iron (Champagne 1989), zinc, carbohydrate (Russell 1992) and other nutrient absorption (Modlin et al 1994). In some patients, supplementing with nutrients such as calcium, may not be effective since this is one of many nutrients requiring an acid environment for absorption. For example, supplementing achlorhydric patients with an acid calcium results in significant absorption as opposed to non-acid calcium supplements (Levenson and Bockman 1994). In addition, hypo- or achlorhdria is associated with depression, possibly due to poor absorption and resulting imbalance of tryptophan, tyrosine and phenylalanine (Carter 1992); Carter also states, "treatment of the hypochlorhydria with hydrochloric acid or its substitutes has often been observed to be effective in reducing these symptoms."

Hypo- or achlorhydria may have other numerous adverse *secondary* effects not only in the stomach but throughout the GI tract and body, including bacterial overgrowth (Freston 1997). The general loss of the primary bacteriocidal barrier against enteric pathogens in general is also a prime concern (Modlin et al 1994). Hypo- or achlorhydria is probably involved in gastric carcinogenesis (Brandi et al 1996). Yeast and fungal infections (i.e. Candida) are significantly higher in patients with hypo- or achlorhydria (Ramani et al 1994, Ghoshal et al 1994). In addition, hypo- or achlorhydria is common in patients with rheumatoid arthritis (Henriksson et al 1993, Svintsyts'kyi et al 1994). Treating patients with the above problems with therapies directed only at these problems is an example of treating secondary symptoms and neglecting more primary issues.

Supplementing L-glutamine may provide benefits for patients with diminished absorptive function and has previously been addressed by the author (Maffetone 1990). L-Glutamine is the primary metabolic fuel of the intestinal mucosa (Islam et al 1997) and is related to intestinal function, especially nutritional absorption, specifically improving the structure and function of the small intestine villi - the site of nutrient absorption (Buchman et al 1995, Lacey and Wilmore 1990).

Glutamine has been shown to have marked anti-inflammatory activity and a moderate analgesic effect (Jain and Khanna 1981), and Kelso et al (1989) demonstrated the anti-inflammatory effects of glutamine in skeletal muscle. In addition to the small intestine, glutamine also has positive effects on large intestine function (Scheppach et al 1994).

The use of choline is also common in applied kinesiology, especially in patients who have bronchialspasm or constriction with activity, and was described earlier as exercise induced asthma (EIA). The use of choline for EIA has also been shown effective by Gaur et al (1997) and Gupta and Gaur (1997). Choline is a major donor of methyl groups (i.e. for the production of methionine), a precursor for membrane synthesis (especially lecithin), and a component of the neurotransmitter acetylcholine (Savendahl et al 1997). Choline is found in foods (especially egg yolks and fish) and can be manufactured in the body from the amino acids serine and methionine, which require vitamin B12 and folic acid (Linder 1991).

Conclusion

This paper presents some of the definitions and philosophies used in applied kinesiology, with only a very few assessment and therapy tools commonly used and their scientific basis. It is hoped that others will add to this information by performing literature searches to find support for other methods. This combined with our dramatic clinical outcomes can help practitioners, students, and patients. In addition, this information may be useful for colleges and universities, professional educators, state boards and others.

It is important to not only share information with others in the health care system, but educate patients and lay persons as well. In this endeavor, communication is a vital tool. Relying strictly on clinical outcomes, while a primary factor, is no longer the only aspect of teaching others about applied kinesiology. We must not only understand the art and science of our profession, but be ready and willing to teach others in the same light. This includes communicating the scientific rationale behind our approach to patient care.

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Coupled Respiratory Motion

James Otis, D.C.

Abstract

This paper postulates that atlanto occipital and cervical motion are neurologically coupled with costal respiration. Procedures to evaluate coupled respiratory motions are discussed, as well as treatment options for dealing with uncoupled respiratory motion.

Introduction

Costal respiration is coupled with craniosacral motion. Inhalation is coupled with craniosacral flexion, and exhalation is coupled with craniosacral extension. These motion pairs usually occur independently of each other, but they like to occur together. Each facilitates the other.

This paper postulates that atlanto occipital and cervical motion are also coupled with costal respiration. The nervous system favors some combinations and discourages others. Coupled motions facilitate each other. Uncoupled motions inhibit each other.

Challenges for coupled and uncoupled respiratory motions yield useful information about the condition of integrating centers in the central nervous system.

Segmentation

It is often the case that the same receptor based challenge causes different muscle test outcomes depending upon what type of muscle test is performed. The same challenge, evaluated with the same muscle, might lead to different test outcomes for gamma two maximum and submaximum tests (Schmitt, 1996), for tests involving right and left brain activation (Walther, 1988), and for analogous muscles tested individually and simultaneously (Otis, 1987).

This paper uses the term ‘segmentation’ to refer to any condition in which different types of muscle tests yield different test outcomes in response to the same challenge. Sometimes, for example, an inferior tug on the kidneys causes a weak outcome with gamma two submaximum testing, but a superior tug causes a weak outcome with gamma two maximum testing (same muscle). Similarly the same muscle might evidence a weak outcome in response to one direction of challenge when the test is combined with right brain activity (humming, for example), but a weak outcome in response to the opposite direction of challenge when the test is combined with left brain activity (doing math, for example).

All of these examples, in which different types of muscle tests yield different outcomes, are kinds of segmentation. Segmentation occurs when different parts of the brain develop different strategies for dealing with a stressor. One part of the brain might want the kidneys up, while another part wants them down. This condition sets up a ‘Durnd if You Don’t, Durnd if You Do’ dilemma described by Schmitt. (1997)

Segmentation reflects a stress-induced breakdown of integrating mechanisms in the brain. If two parts of the nervous system have adapted conflicting strategies, the solution is to strengthen a more basic integrating mechanism. As an analogy, if a top level manager fails to give clear directions and set clear policy, then two mid level managers might start giving a worker conflicting directions. When integration is strengthened, different parts of the brain agree about the nature of the problem and develop a cooperative strategy. Challenges and muscle tests yield the same results whether the right brain or left brain is activated. The body is able to ask for and accept therapeutic interventions straightforwardly and unambiguously. Healing is facilitated.

Segmentation and Coupled Respiratory Motion

Segmentation is associated with uncoupled respiratory motion. Whenever there is segmentation, there is uncoupled respiratory motion, and whenever there is uncoupled motion there is segmentation. When respiratory motions are normalized segmentation is eliminated. Segmentation and uncoupled respiratory motions are both indications of stressed integrating functions in the central nervous system. The underlying stressors might be physical, nutritional, or emotional in nature.

Possible Anatomical Basis of Coupled Respiratory Motions

Respiratory motions might be coupled because of asymmetries in the diaphragm and cranium.

The diaphragm is a dome shaped musculo-aponeurotic septum separating the abdominal and thoracic cavities. It is muscular at the periphery, with the muscles converging into the central tendon. Part of the diaphragm (the right and left crura) originates on the anterior surfaces the upper lumbar vertebra. The right crura is broader and longer than the left, and its medial fibers cross to the left side of the central tendon.

If contraction of the diaphragm pulls even slightly asymmetrically into the rib cage and spinal column, then some spinal motions might be enhanced and others hindered. If some combinations work better than others, the nervous system favors them by coupling them so that each motion facilitates the other.

Asymmetries in the cranium are another possible cause of coupled respiratory motion. The same asymmetries that predispose to and are associated with the typical left occiput anterior presentation at birth might cause some types of atlanto occipital motion to occur more easily during craniosacral flexion (costal inhalation) and others to occur more easily during craniosacral extension.

Coupled Respiratory Movements

The following motion pairs are coupled. These combinations tend to promote integration and reduce segmentation.

Inhale is coupled with:
- atlanto occipital flexion
- right lateral flexion
- right rotation

Exhale is coupled with:
- atlanto occipital extension
- left lateral flexion
- left rotation

Uncoupled respiratory motions tend to reduce integration and cause segmentation.

Challenging Coupled Motion

Coupled respiratory motion has an integrating effect on the nervous system, and uncoupled respiratory motion is stressful. Each person has a variable capacity to perform uncoupled respiratory motions before evidencing segmentation and weak muscle test outcomes. It is possible to evaluate the resiliency and capacity of integrating centers in the nervous system by monitoring muscle test outcomes as a person performs uncoupled respiratory motions.

This paper discusses two ways to challenge the nervous system's ability to accommodate uncoupled motion.

1) Repeat uncoupled motions a number of times and then evaluate muscle test outcomes ('Repetitive Head Motion Challenges').

2) Hold exaggerated uncoupled motions, and evaluate muscle test outcomes ('Exaggerated Uncoupling Challenges').

Repetitive Head Motion Challenges

Repetitive head movements that are faster than the respiration cycles are uncoupled for one part of the motion and coupled for the other. If the integration center that coordinates this motion is stressed segmentation will occur.

Evaluate muscle test outcomes after a series of repetitive head movements around three axis of motion. Do this while the person is holding their breath out.[1]

1) Atlanto-occipital flexion and extension (nodding 'yes')

2) Right and left cervical rotation (shaking head 'no')

3) Right and left lateral flexion (shaking head 'maybe')

Weak, segmented muscle test outcomes after three or four nods indicate low function of an associated integration center in the brain.

Exaggerated Respiratory Motion Challenges

Integrating functions in the nervous system can also be evaluated by monitoring muscle test outcomes while the person holds exaggerated respiratory and cervical motion combinations. Hold the breath deeply in or out and hold the cervical spine at the end point of its range of motion.

Under normal conditions the body can handle exaggerated positions without causing a change of muscle strength. When integrating centers are stressed, having the person hold either an exaggerated uncoupled position or an exaggerated coupled position causes segmentation (weakness with some types of muscle tests, but not with others).[2]

Examples of exaggerated uncoupling challenges are;

1) Evaluating muscle test outcomes while the person inhales and turns his neck in left rotation.

2) Evaluating muscle test outcomes while the person exhales and flexes his chin in atlanto-occipital flexion.

Weak, segmented muscle test outcomes caused by exaggerating uncoupled motions are indications of stressed integrating centers in the brain. After effective treatment the same uncoupled position no longer causes weak, segmented muscle test outcomes.

Treatment Considerations

Coupled respiratory motion can be used both diagnostically and therapeutically. As a diagnostic indicator, the body's ability to accommodate uncoupled respiratory motion reflects its ability to handle a wide variety of stressors. Coupled respiratory challenges are a useful indicator regarding the efficacy of treatment. After any type of effective treatment the person is able to accommodate a greater amount of uncoupled motion before showing signs of segmentation and weak muscle test outcomes.

As a therapeutic modality, coupled respiratory motions can be used to strengthen integrating functions in the brain. This is a helpful first step in many treatment procedures. Stressors that overwhelm the body's integrating mechanisms cause segmentation. These stressors are often difficult to identify with muscle testing because they present segmented challenges. Some types of muscle tests register their presence and others do not. In addition to masking the original stressors, the segmentation response causes adaptive changes that register with muscle testing. Treating an adaptive change simply shifts the 'problem' to another part of the body, leaving the underlying stressor untreated.

As the nervous system is more strongly integrated the body deals more effectively with deeply rooted problems. Increased integration makes it easier to distinguish underlying stressors from adaptive changes with manual muscle testing. Challenges that had previously caused segmented muscle test responses frequently don't challenge at all after integrating functions are strengthened, and those that do challenge are non segmented. Underlying stressors are more easily observed. They challenge in a straight forward, non segmented manner, and treatment addressed to those stressors is more effective because it is well received by all parts of the nervous system.

Procedure

Integrating procedures can be done with or without percussion of sutural junction points. (See the accompanying paper, Sutural Junction Points and applied kinesiology Five Element Theory.)

Procedure without stimulation of sutural junction points;

1) Have the patient do exaggerated coupled respiratory motion in all three axis of motion. Two or three repetitions is usually adequate. The longer the positions are held, the more exaggerated the motion, and the more repetitions, the stronger the integration.

2) Often at this point many or all muscles associated with one of the five elements of Traditional Chinese Medicine test weak (and touching or tapping the associated sutural junction point causes weakening of indicator muscles). Evaluate and treat using standard applied kinesiology procedures.

Procedure with stimulation of sutural junction points;

Coupled respiratory motion combined with percussion of sutural junction points (SJP) creates more complete integration than coupled respiratory motion alone.

1) Identify the primary sutural junction point. Tapping this point causes weakening of muscles throughout the body.[3]

2) Tap the primary sutural junction point ten to fifteen times while the person holds each of the six coupled respiratory motions.

Coupled Respiratory Adjustments

Ted Carrick has pointed out the importance of adjusting in accordance with coupled spinal mechanics. Practically this has meant correlating lateral flexion and rotation, and to a lesser degree flexion and extension. Schmitt (1996) finds that it is important to only adjust those segments that evidence a positive challenge in the coupled position.

In addition to correlating lateral flexion and rotation, it is also important to evaluate phase of respiration when challenging a spinal segment, and only adjust a vertebra if it challenges in the coupled respiratory position.

This author has not experimented with adjusting using a deliberately uncoupled breath phase and otherwise correct coupling, but it is likely that such adjustments would create stress somewhere else in the body.

Conclusion

Challenging uncoupled respiratory motion is a useful tool for assessing the nervous system's integrating capacity, and for knowing when treatment has been effective. Performing coupled respiratory motion strengthens integration and reduces segmentation. Adjustments are best performed with the appropriate phase of respiration (only if the articulation challenges in that phase of respiration)

Notes

1) When integrating mechanisms are stressed, then repetitive head motions during exhale tend to cause weak muscle tests and right to left segmentation. Repetitive head motions during inhale tend to cause strong muscle test outcomes with right to left segmentation.

2) In the presence of stressed integrating functions, holding exaggerated coupled positions frequently causes strong gamma one test outcomes, but weak gamma two outcomes, and holding exaggerated uncoupled positions frequently cause weak gamma one muscle test outcomes, but strong gamma two muscle test outcomes.

3) If tapping one of the sutural junction points does not elicit weakness of indicator muscles throughout the body, tap the EOP ten to twenty times and then retest the sutural junction points.

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Meningeal Tension and Somatosensory Function

James Otis, D.C.

Abstract

The nervous system is constantly adjusting its sensitivity to incoming stimuli through cortico fugal signaling. Signaling from meningeal mechanoreceptors affects the nervous system's sensitivity to signals from peripheral mechanoreceptors, which in turn affects muscle test outcomes following muscle and strain-counter strain challenges. Many cases of stretch induced or maximal contraction induced weakness are due to supra segmental influences rather than primary dysfunction of the local mechanoreceptor.

Introduction

Perception affects function. At every level of our existence, perception influences and reflects our health. For example, hypothalamic perception of concentration gradients effects how it signals and effector organs, and mechanorecptor sensitivity to stretch and tension effects muscle function.

Integrating centers in the brain coordinate the nervous system's sensitivity to all types of incoming stimuli. These integrating centers are influenced by many factors, including signals regarding tension in the meninges.

Meningeal Mechanoreceptors

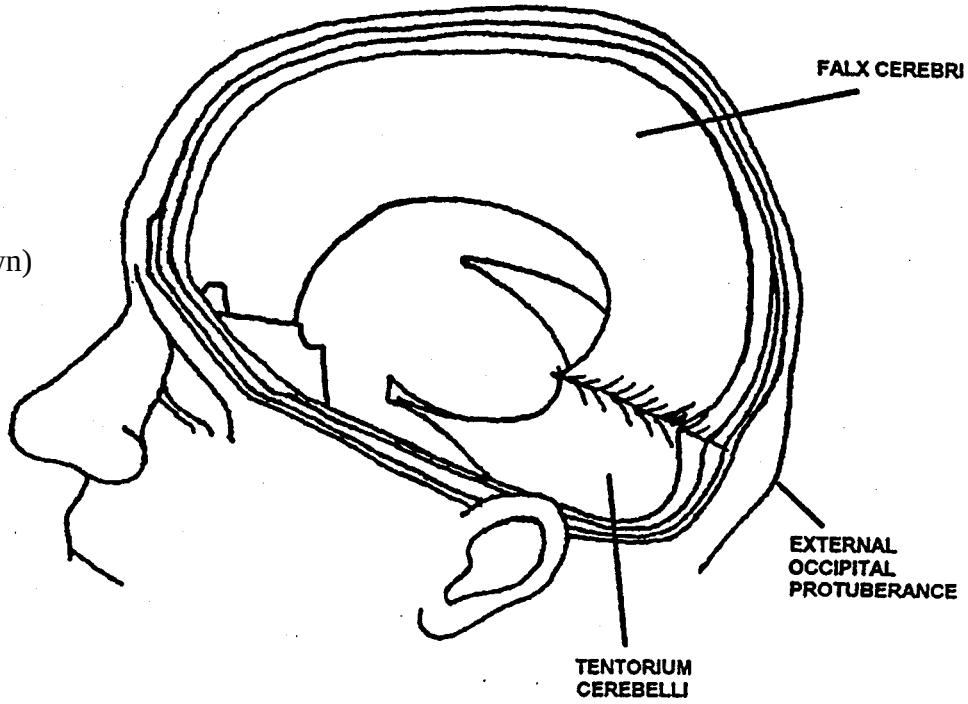
The dura mater, the outer layer of the meninges which surrounds the brain and spinal cord, is tough and relatively inelastic. It bends, but it doesn't stretch. It attaches to the inside of the skull and to selected points in the spinal canal, and because of its inelastic nature it transmits pulls from one point of attachment to another.

Vectors of pull within the meninges shift as cerebrospinal fluid pressure increases and decreases with the cycles of craniosacral flexion and extension. Vectors of pull shift in a different pattern as the spine and atlanto-occipital joint move in flexion and extension, right and left lateral flexion, and right and left rotation. Information about these shifting vectors of pull is signaled into the nervous system with widespread neurological consequences. Meningeal tension is presumably monitored and signaled by mechanoreceptors (referred to as meningeal mechanoreceptors) located in cranial sutures and near points of dural attachment.

It is possible to amplify signaling about meningeal tension by percussing the external occipital protuberance (EOP). The EOP is located on the outside of the skull immediately adjacent to the junction on the inside of the skull of the falx cerebri, falx cerebelli, and tentorium cerebelli (*figure 1*). Percussion at this point sends waves of quickly alternating tension through the meningeal system, causing massive stimulation of mechanoreceptors which monitor that tension. It is possible to study the effects on muscle test outcomes of various meningeal tension patterns by tapping the EOP while holding a body position that exaggerates the desired meningeal tension pattern.

Figure 1:

External Occipital Protuberance Near Junction of Falx Cerebri, Tentorium Cerebelli, and Falx Cerebelli (not shown)



Percussion of External Occipital Protruberance sends waves of pressure throughout the meningeal system, causing increased stimulation of mechanoreceptors that monitor meningeal tension.

Sensitivity to Sensory Input

In addition to somatic signals transmitted from the periphery to the brain, corticofugal signals are transmitted from the cerebral cortex to lower sensory relay centers (or to peripheral receptors) that control the nervous system's sensitivity to sensory input. When incoming signals reach a certain level of intensity, descending signals decrease transmission of the incoming signals in a process that keeps the sensory system operating in the most effective range of sensitivity.

This paper proposes that the nervous system also makes long term changes in somatosensory sensitivity as part of a comprehensive response to stress. It decides to pay attention to one set of data in preference to another. Each strategy of sensory selectivity sets the stage for different muscle test outcomes.

Muscle Stretch Reactions

Normally when a muscle that is strong is stretched and retested, it tests equally strong or stronger. A positive muscle stretch reaction occurs when a previously strong muscle tests weak immediately after being stretched. George Goodheart (1978) describes corrective procedures based on facial release and trigger point reduction in the involved muscle. This paper posits that centrally mediated alterations of somatosensory sensitivity are frequently a cause of positive muscle stretch reactions.

Strain and Counterstrain

Strain and counterstrain is a term developed by Lawrence Jones (1988) to describe a type of muscle dysfunction that sometimes develops when a shortened muscle is rapidly returned to neutral. Korr (1975) has hypothesized that under some conditions the gain on the gamma motor neuron system is set too high, keeping the intrafusal fibers in a chronically shortened state, predisposing the muscle spindle cell to fail to reset after the muscle is rapidly lengthened.

Goodheart (1984) reported that when a strong muscle weakens after it is maximally contracted for three seconds, it needs strain and counter strain treatment. Treatment consists of shortening the muscle and holding lengthening pressure on the shortened spindle cell while the patient holds inspiration (anterior muscles) or exhalation (posterior muscles) and then slowly and passively lengthening the muscle to neutral.

This paper posits that centrally mediated alterations of somatosensory sensitivity are frequently the cause of weak muscle test outcomes following maximal contraction of the muscle.

Meningeal Tension and Somatosensory Function

Signaling about meningeal tension apparently projects into somatosensory integration areas of the brain, contributing to the central integrated states of those neuronal pools. As discussed above it is possible to amplify signaling about meningeal tension by tapping EOP.

Uncoupled respiratory motions stress somatosensory integration areas, altering sensitivity to incoming stretch and tension signals so that muscles weaken after being stretched or contracted.

This can be demonstrated by tapping the EOP ten to fifteen times while holding the following uncoupled positions. Tapping causes such massive activation of meningeal mechanoreceptirs that the impression remains even after the head and neck are returned to a neutral position. Simply holding the two uncoupled motions without tapping the EOP usually does not cause the associated muscle strength pattern. (See the accompanying paper, ‘Coupled Respiratory Motion.’)

Muscle Strength Patterns

- Uncoupled right lateral flexion (right lateral flexion plus exhale) is associated with strain and counter strain reactions on the right and stretch reactions on the left.
- Uncoupled left lateral flexion (left lateral flexion plus inhale) is associated with strain and counter strain reactions on the left and stretch reactions on the right.
- Uncoupled atlanto occipital flexion (AO flexion plus exhale) is associated with strain and counter strain reactions on the anterior and stretch reactions on the posterior
- Uncoupled atlanto occipital flexion is associated with strain and counter strain rections on the anterior and stretch reactions on the posterior.
- Uncoupled attanto occipital extension (AO extension plus inhale) is associated with strain and counter strain reactions on the posterior and stretch reactions on the anterior.

When meningeal tension changes muscle test outcomes following stretch and contraction challenges change. The somatosensory system shifts its sensitivity to incoming signals, paying attention to some data more than others, so that the same sensory stimulus (a stretch or contraction) causes a different muscle test outcome.

Therapeutic Implications

If positive stretch or contraction challenges become negative with a change of breath phase or spinal position, it is likely that they are caused by central somatosensory changes rather than dysfunction of the local mechanoreceptors. Goodheart has observed that in some patients' muscles on one side of the body show strain counter strain reactions, and muscles on the other side of the body show muscle stretch reactions. (1998) This type of condition is frequently associated with imbalanced meningeal tension. Treatment that restores coupled respiratory movement frequently eliminates muscle stretch reactions and strain and counter strain reactions, presumably by normalizing somatosensory function.

Conclusion

Many problems that appear to be caused by local dysfunction are in fact part of a systemic adaptive change to distant sources of irritation. It is helpful to evaluate muscle stretch reactions and strain and counter strain reactions in terms of centrally mediated adaptive changes to distant sources of irritation.

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Sutural Junction Points and Applied Kinesiology Five Element Theory

James Otis, D.C.

Abstract

Percussion at sutural junction points (SJPs) tends to inhibit muscles associated in applied kinesiology with one of the five elements of Traditional Chinese Medicine. Diagnostic implications are discussed.

Introduction

Sutural junction points are places where two or more sutures come together. SJPs discussed in this paper includes the nasion, right and left pterion, and right and left asterion.

Mechanoreceptors near points of dural attachment and in the sutures between cranial bones signal information about meningeal tension to the central nervous system. (Otis, 1997) Percussion of the cranium amplifies signaling from the mechanoreceptors which in turn activates a variety of integrating centers in the brain.

Five Element Theory

George Goodheart introduced meridian therapy and the five element theory of Traditional Chinese Medicine into applied kinesiology. (1966) He observed that each muscle is related to an acupuncture meridian and one of the five elements of Traditional Chinese Medicine. This fit well with the previously discovered muscle-organ association. (Walther, 1988)

Diagnostic Challenges

Lightly tapping the nasion, right or left pterion, or right or left asterion activates mechanoreceptors in and around the SJPs which in turn activate neurons that inhibit muscles associated with one of the five elements. Each SJP is associated with one element. Apparently, increased signaling from the meningeal mechanoreceptors brings a group of inhibitory neurons to threshold.

A variable number of taps at an SJP are required to bring the inhibitory neurons to threshold, and inhibition might be confined to muscles in the SJP's central field of influence (muscles associated with one element), or it might spread to muscles outside of its central field of influence (muscles associated with other SJPs and elements).

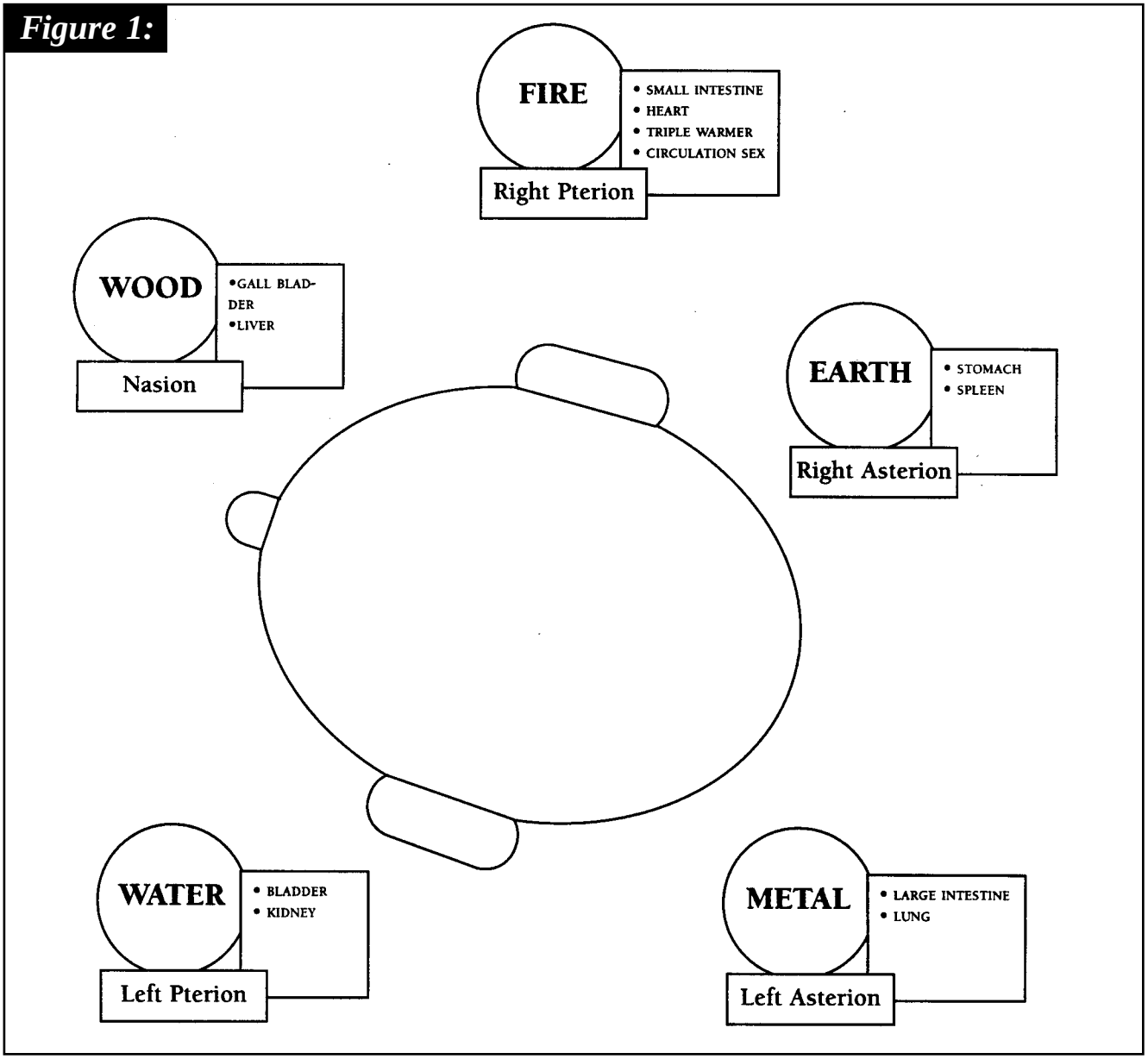
The more integrated the body is, the more taps it takes to cause weak muscle test outcomes. After successful treatment it takes more taps to cause weak muscle test outcomes. When tapping an SJP causes weakness outside the SJP's central field of influence, treatment directed to the associated element has especially far reaching effects.

Following is a list of SJPs and associated elements. (*See figure 1*)

nasion	wood element
right pterion	fire element
right asterion	earth element
left asterion	metal element
left pterion	water element
bregma	conception vessel
lambda	governing vessel

Sutural Junction Points and Five Elements Theory

Figure 1:



Treatment Considerations

If touching an SJP causes weak muscle test outcomes, (This is often the case after the coupled respiratory exercise described in the accompanying paper, 'Coupled Respiratory Motion.'), or if tapping the point causes weak muscle test outcomes outside of its central field of influence, it is most effective to direct treatment to the element associated with that SJP (called the 'primary SJP'). Any of the applied kinesiology procedures can be brought to bear on the muscles, organs, etc. associated with that element. After effective treatment, tapping the SJP no longer elicits weakness.

Tapping the primary SJP in conjunction with coupled respiratory motion causes increased coordination between different parts of the nervous system as described in the accompanying paper, 'Coupled Respiratory Motion.' This is a good starting point for treatment because adaptive changes drop away and underlying stressors show up more clearly.

Discussion: Directions For Further Research

Why does this phenomena occur? What do muscle test outcomes in response to tapping SJPs indicate about the central integrated state of which neuronal pools? Does the muscle-SJP correlation originate with common embryological pools? How is it established?

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Understated Affirmations

James Otis, D.C.

Abstract

To be most effective affirmations must achieve two seemingly contradictory conditions. They must point a person's attention in the desired direction, and they must be as completely believable as possible. Understated affirmations are discussed as a means to achieve both conditions. An applied kinesiology procedure for evaluating understated affirmations is discussed.

Introduction

To be most effective, an affirmation must direct the person's attention in a desired direction, and it must be as completely believable as possible. A person will resist a statement (affirmation) to the extent that they find it unbelievable. By understating the affirmation it becomes more believable while still maintaining the desired direction of attention.

Cognitive Dissonance, Emotional Charge, and Muscle Test Outcomes

Cognitive dissonance caused by saying something that is not believable usually causes weak or segmented muscle test outcomes (see accompanying paper, Coupled Respiratory Motion for discussion of segmentation). Cognitive dissonance generates emotional charge and vice versa. Statements about emotionally charged issues are more likely to cause weak muscle test outcomes than statements about emotionally neutral subjects.

Understated Affirmations

Maximally understated affirmations have the following characteristics:

1) non specific subject of the sentence, 'it'

2) broad non-specific time frame 'sometimes'

3) object of the sentence is stated as a non-specific third person, 'someone' or 'somebody'

Maximally understated affirmations have the following form;

> "It sometimes happens that someone....
> (displays or experiences a desired quality)"

For example,

'It sometimes happens that someone is happy.'

'It sometimes happens that someone acts powerfully.'

'It sometimes happens that someone accepts all of himself.'

'It sometimes happens that someone likes somebody.'

'It sometimes happens that someone is content'

Most affirmations are comparatively overstated.

'I feel great in every way.'

'I have all the time in the world.'

Procedure

1) Evaluate gamma one muscle test outcomes. Find a word or overstated affirmation that causes weakening with gamma one muscle testing.

a) Have the patient say single words describing a positive state of being, such as, love, intelligence, peacefulness, acceptance, gratitude, powerfulness, etc. or

b) Have the patient make first person statements such as 'I am peaceful,' 'I like John,' or 'I accept myself completely.'

2) Confirm that an understated version of the word or affirmation which caused weak muscle test responses in step one, causes strong muscle test responses and eliminates positive therapy localizations and challenges.

3) Tap the EOP while the person slowly repeats the understated affirmation. Tapping EOP amplifies the effect of the affirmation. See the accompanying paper, 'Meningeal Tension and Somatosensory Function.'

4) Instruct the patient how to use the understated affirmation at home.

A few examples of positive state-of-being words, overstated affirmations, and understated affirmations follow.

words	overstated affirmations	understated affirmations
'love'	'I like John'	'Sometimes it happens that somebody likes someone'
'power'	'I am powerful'	'Sometimes it happens that somebody acts powerfully'
'happiness'	'I am happy'	'Sometimes it happens that somebody is happy'
'contentment'	'I am content'	'Sometimes it happens that somebody is content'
'acceptance'	'I accept myself completely'	'Sometimes it happens that somebody accepts himself completely'

Patient Instructions

Most people quickly understand the desirability of believable affirmations. It is helpful to explain that understatements sneak around any resistance to the affirmation. The resistant part of the mind can't argue well with understated affirmations.

Understatements can be used as first aid, 'in the moment,' when the person is upset. The person can also make time each day to repeat the understatement (either out or in writing) and notice the reactions that occur between repetitions. Affirmations can be reinforced with tapping the EOP as discussed in the accompanying paper, 'Meningeal Tension and Somatosensory Function.'

Discussion: Directions for Further Research

Understated affirmations are especially effective for producing non-segmented strengthening of muscles. (See the accompanying paper, 'Coupled Respiratory Motion' for a discussion of segmentation.) Overstated affirmations frequently cause a strong outcome with one type of muscle test, and a weak outcome with a different type of muscle test, reflecting the mind's ambivalence about the statements.

References

The author learned about understated affirmations from the work of Harvey Jackins, developer of Re-evaluation Counseling. For more information, contact The International Re-evaluation Counseling Communities, 719 Second Ave. North, Seattle, Washington, 98109 or http://www.rc.org

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Assessment and Treatment of Functional Lymphatic Congestion

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Abstract

Functional lymphatic congestion (FLC) or poor lymphatic drainage is one of the most common findings in clinical practice. It is frequently overlooked when evaluating patients. Even when it is uncovered by an astute examiner, its treatment is usually inadequate. FLC causes widespread functional muscle weakness and compromised organ function. The most effective treatment for FLC is correction of structure through applied kinesiology diagnosis and techniques.

Introduction

FLC has been long recognized as a clinical entity by applied kinesiology practitioners. The lymphatic system is the endpoint for the products of cell metabolism. The lymphatic fluid is collected in the lymph capillaries and is moved progressively to larger vessels where it enters the right or left thoracic duct.[1] This is where a functional structural impediment to the lymph flow can occur. Should there be imbalance of the pectoralis major sternal, clavicular or minor or subclavius there can be pressure on the lymphatic ducts at this point. In the author's experience this is most commonly due to a lumbo-dorsal fixation. When there is a lumbar-dorsal fixation, the neurological response of the body is a bilateral weakness of the lower trapezius.[2] This causes an imbalance of the pectoralis muscles with pressure on the lymphatic ducts. The lumbo-dorsal fixation is usually due to an imbalance in the pelvis, specifically in the psoas muscles.

The symptom complex of FLC can be quite varied. Any sinus, ear and upper respiratory problem, infections, colds and bronchitis. There can be pain in the joints, numbness and tingling, swelling especially on rest. Also the patient may suffer from bruxism.

Diagnosing FLC has been traditionally done from the perspective of a strong muscle. Goodheart[3] has described a retrograde lymphatic procedure where a strong muscle is tested after the body is placed in a retrograde position. A strong muscle will weaken on a supine patient after the legs are raised above head level for approximately thirty seconds. While this technique has some use, there are other approaches.

Examination

When a patient has pectoralis hypertonicity, the shoulders tend to roll forward. This is commonly accompanied by the following objective indicators: widespread muscle weakness (bi or unilateral), many active neurolymphatics, numerous temporal-sphenoidal line indicators, organ sensitivity to palpation (small and large intestine, gall bladder, liver, etc.), and other areas of palpatory pain.

Since the shoulders are rolled forward, the procedure would be to have the patient bring the shoulders posterior toward the ideal position. Since the patient is in a symptomatic state, there are usually weak rather than strong muscles. These weak muscles should then strengthen as lymphatic function becomes normalized. Neurolymphatic activity, temporal-sphenoidal line indicators and organ sensitivity should decrease dramatically.

Treatment

The patient's lumbo-dorsal fixation should be corrected. Any psoas imbalance needs to be corrected due to the connection of the psoas at the lumbo-dorsal junction. This includes any neuromuscular spindle cell of the psoas, strain/counterstrain of the psoas and correction of any muscle that the psoas may be reactive to. Also the back extensors and transverse abdominals need to be evaluated due to their stabilizing function of the lumbo-dorsal junction.

The objective and subjective indicators described above may also respond to only one shoulder being brought posterior. In that case, attention should be given to the pectoralis major sternal, clavicular, and minor. Golgi tendon organ, neuromuscular spindle cells, strain/counterstrain and fascial release need to be evaluated. All reactive muscles must be considered.

All subluxations, fixations and cranial faults need to be evaluated and corrected.

The patient should be sufficiently hydrated to maximize lymphatic function. Sixty-four ounces of water per day is usually enough for an adult. While the healing process is ongoing, the patient may partake in hot soaks to stimulate lymphatic fluid motion.

Results

FLC responds well to applied kinesiology therapeutic measures. A minor case can respond in one or two visits. More chronic and severe cases may take longer. Most patients report improvement immediately after a treatment.

Discussion

While FLC leads to dysfunction of muscles throughout the body, it appears that the digestive system function is severely impacted.

Bland[4] has noted that sixty percent of the body's lymphoid tissue is associated with the gut. This is called gut associated lymphoid tissue (GALT). GALT is the body's buffer between the outside world and the internal organs. If the GALT is in a state of dysfunction, the digestive processes are compromised. There is malabsorption and inflammation. Whenever there is dysbiosis or digestive malfunction the GALT becomes overwhelmed and compromised. This leads to an inflammatory process in the body and overwhelms the defense systems. Allergies and autoimmune processes then start leading to widespread systemic ramifications. Clearly to improve digestive function the clinician must make sure that the lymphatic system is not compromised.

In my experience, should a patient show a sensitivity to a food substance by insalivating it, a muscle weakness caused by the insalivation could be negated by the above described shoulder position change. This

would be a good indicator that the food sensitivity could be FLC related. Once FLC is corrected, digestive function can be expected to improve dramatically. When these food sensitivities are eliminated toxic burden and inflammation are reduced significantly. This allows further healing and improved systemic function. Bland[5] has also noted that these inflammatory processes cause oxidative stress, depress immune function, speed the aging process, cause pain, fatigue and many autoimmune disorders.

Conclusion

Evaluating and correcting FLC will be beneficial for the patient. By utilizing the special techniques of applied kinesiology, the doctor can make a substantial impact on the function and health of patients.

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The Walking Triad

Eric Kees Peet, D.C.

Abstract

Approximately seven million years ago man began to walk. And that, as it might be said, has made all the difference. By appreciating how the function of bipedalism has concurrently stimulated the evolution of our skeletal structure, our neurology, and our aerobic physiology, valuable insight can be gained about the interdependence of this functional triad. Utilizing the techniques of triplaner cranial analysis to compliment standing postural analysis, asymmetrical relationships between the body's geometry, and the cranium's geometry are observed. When these observations are compared with the pyramidal distribution of weakness, a neurologic condition which is influenced by the status of our aerobic metabolism, a consistent pattern of dysfunction emerges. This has implications with many of the clinical phenomenon we observe in applied kinesiology. The pyramidal distribution and its associated higher cortical neurology, is responsible in part, for our erect posture and walking gait. Yet most of this defies explanation under our current conceptual models of cranial mechanics and neurology. When a new model is developed utilizing bipedalism as a common function, a great deal of our observed phenomenon becomes easier to explain. By linking the pelvis to the cranium mechanically through the dura, and neurologically through the brainstem nuclei, an analogous relationship between the movement of the two is made. Why then would our pelvis walk, but our cranium only breathe? This paper attempts to expand our conceptual model of how the body and cranium interact. It introduces a new system of cranial mechanics based on the asymmetrical forces incurred during bipedal movement, and it's implications with our nervous, and metabolic systems. Examples of common cranial/postural patterns with thoughts on protocol for care are given.

Introduction

With the discovery of ardipithecus ramidus, a four and one half million year old human skeleton, anthropologists have clinched the argument that hominid's evolved bipedalism before big brains. Our behavioral adaptation to bipedalism was crucial in the evolutionary development of man.[7] To put this to clinical use, you have to recognize that the function of our skeletal structure, our receptor based neurology, and our aerobic metabolism, all evolved concurrently from bipedal movement, and are interdependent upon one another. Adaptation to this movement pattern imposed a completely different set of asymmetrically shifting gravitational forces to our structure, and rhythmical oscillating stimulation to our receptor-based neurology. It changed the spatial relationship of our head and pelvis, and shifted their center of gravity to a less stable position. As we became proficient, it became a function of energy conserving aerobic metabolism, which made it an effective way for us to get around and survive. It allowed us to greatly expand our nomadic ranges, and mimic aerobic style hunting tactics which are utilized by most open country large predators. Despite these observations, our current clinical model of cranial mechanics only accounts for symmetrical respiratory patterns of movement.[14, 56] A further inadequacy is that our neurological model of spinal erection and gait (the pyramidal distribution of weakness) does not account for the extensive proprioceptive network of the cranium, which is integrated with our sense of balance and gait.[6, 10] No other part

of our skeletal structure developed more than our cranium. A totally new set of biomechanics and fluid dynamics were imposed on the cranial vault. It developed a unilateral dual pumping action which increased cerebral spinal fluid and capillary blood flow, making it more efficient for sustained activity. The receptor-based neurology within the sutures became specifically adapted to accommodate the new mechanical forces and muscle tension patterns required for balance and smooth movement. It stimulated interneuronal reflex development in the major proprioceptic loops of the body and head, the spinal cord and trigeminal nerve respectively. As the rhythmical oscillating movement pattern became ingrained in our neurology, it allowed us to simultaneously process other thoughts, developing our ability to comprehend multiple tasks. Walking stimulated our higher brain centers with a totally new proprioceptive spatial pattern, causing our cortex (involved in learning) and the cerebellum (involved in movement) to develop at a much faster rate.[1] Adaptation to this movement restructured our entire musculoskeletal, neurological, and metabolic, support systems into an interdependent functional triad based on walking.

The biomechanical relationship between the pelvis and the cranium was suggested in the early part of this century by Lovett.[22] It has been utilized extensively by kinesiologists, chiropractors, and physical therapists for years. The use of its clinical significance, however, has been limited mostly to the spine, not the pelvis and cranium. Posture analysis has been used for decades in both physical therapy, and applied kinesiology.[22, 37] Triplaner cranial analysis is a newer technique introduced to applied kinesiology several years ago by Dr. Bob Walker, and has its origins in functional dentistry.[4] These techniques represent a quick, objective, visual assessment procedure for both the cranial and postural geometry. When compared, there are several predominant geometric variations between the two. However, for the purposes of this discussion we will only be considering what is far and away the most common correlating pattern; the pyramidal distribution of weakness currently described by neurologists. This consists of generalized ipsilateral extensor weakness, with contralateral hip flexor weakness. Regardless of the neurological hand dominance, the extensor weakness is nearly always on the left.[6, 26] This is due to the neurologies dependance on oxygen tissue saturation, and fatty acid metabolism, both functions of aerobic metabolism. As aerobic metabolic function decreases (determined by applied kinesiology techniques, or by respiratory quotient) it diminishes the function of the liver, which somatoviscerally causes hypotonicity of the right pectoralis muscles. This is what initiates the right flexor/left extensor weakness pattern. It is expressed as a relatively consistent variation of our postural geometry. But to view the pyramidal distribution as simply a weakness pattern is incorrect. It is actually a loss of inhibition within our higher brain centers causing a progressive muscle tension pattern. The weakness is actually due to reflex hypotonicity of the antagonistic muscles. What's missing in the current description is the cranial loop, which ties in through the trigeminal nucleus that anatomically becomes homologous with the dorsal column nucleus in the upper cervical segments.[11, 15] With the muscular distribution of the trigeminal nerve caught in this chronic vicious cycle of progressive muscle tension, it alters the developing bony geometry of the cranium. Acting just like the chronic tension from an orthodontists rubber band, it induces bony remodeling. This neurologic pattern expresses itself as a remarkably consistent variation of our cranial geometry. The degree that the cranial geometry is altered is dependant upon how long the pyramidal pattern has been present, and at what point in the individuals development it started. This in turn, is a function of the individuals long term aerobic/anaerobic metabolic status. Our current description of cranial faults is in terms of respiration patterns, or phases. They are evaluated through applied kinesiology muscle testing procedures, and represent an expression of the immediate reflex activity within the sutures of the cranium that are activated by the changes in muscle tension incurred during respiration. This new model however, allows the clinician to visually evaluate the cranial geometry, and interpret the variations as an expression of the long term aerobic/anaerobic metabolic status of the individual. This information provides several advantages for the clinician. It allows quick evaluation, establishes clear cut long term goals for the patients management, and provides an effective communication tool to compliment a potential dental co-management intervention.

Discussion

The Trigeminal Nerve-The Cranial Loop

The proprioceptive input derived from the sutures around the temporal, and sphenoid bone are entirely under rated. This is easy to understand since the medical model of the cranium assumes it doesn't move; therefore, how could it have proprioceptive input of any significance? This is a gross inaccuracy. Even to classify the trigeminal system as a simple nerve, implying it only carries sensory input and motor output, belittles the significance of this neurological structure. It possesses an interneuronal reflex network of unmyelinated fibers that remains viable even if the nerve root is severed at its point of entry into the brainstem.[15] Its reflex network remains intact, and continues functioning. This is exactly what is observed in spinal cord injuries in the segments distal to the injury. The interneuronal reflex activity of the trigeminal nerve is expressed in the compensatory muscle tension (motor output) of the temporalis/TMJ complex responding to the mechanical changes in the deep pressure sensors (sensory input) within the cranial sutures. This muscle activity stabilizes the cranium, particularly the temporal bone, as its absorbing the gravitational and inertial forces imparted by movement. The interneuronally filtered sensory afferent input feeds into the trigeminal nucleus through the trigeminal fibers in an ipsilateral arrangement. It makes sense that all the gravity compensating cranial feedback neurology would be on the same side as the foot your bearing weight on. The anatomical significance of the proprioceptive contribution of the trigeminal nerve to our sense of balance and coordination is reflected in the quote, "The similarity between the connections of the trigeminal fibers and the connections of dorsal root fibers is quite striking. The main sensory nucleus of nerve V corresponds to the dorsal column nuclei. The spinal tract and nucleus of nerve V correspond to the tract of Lissauer and to the substantia gelatinosa of the dorsal horn, respectively. In fact, the descending tract and nucleus of the trigeminal complex become continuous with their spinal homologues in the upper cervical region of the cord."[15] This directly links the proprioceptive loops from the cranium and TMJ to the proprioception from the rest of the body; it is a major organ of balance. With the continuous nature of this connection you cannot change the neurological balance of one without affecting the balance of the other. "The upper cervical complex is the most significant neurological area of the spine that is subject to "being out of line." Once this relationship is "out of line" the rest of the subjacent vertebrae will compensate down to and including the pelvis."[17] The neurological system that monitors our equilibrium is the vestibular system within the temporal bones. But it's the trigeminal system that monitors where the craniums center of gravity is relative to the body's center of gravity. The vestibular system senses disequilibrium. It is the trigeminal system that senses whether it's critical to do something about it in order to remain balanced and upright. The vestibular system is reflex based; the trigeminal system is both reflex and consciously controlled. It functions by inhibiting the vestibular reflexes and keeps us from overcompensating to our sense of balance. It dampens the response from the vestibular reflexes. Given the functional significance of this structure and the anatomical significance of possessing grey mater, it could be thought of as the trigeminal cord, or cranial cord.

The Temporal Bone

The temporal bone is extremely active proprioceptively. It transfers and amplifies mechanical input from its surrounding sutures to the reflex and sensory network of the trigeminal nerve. The petrious portion is rigid and acts as a lever arm, creating a mechanical advantage to the flared squamosal portion, where there is a large fanned out bed of proprioception within the squamosal suture.[14] There are five sources of mechanical input to the temporal bone:

(1) Gravitational and inertial forces from the occipital condyle, just inferior and slightly posterior to the medial tip of the petrious portion;

(2) Torsional and inferior pulling from the anterior and lateral poles of the dura as a result of breathing and walking mechanics, providing a mechanical link from the cranium to the pelvis through the spine;

(3) Inferior tension and further torque from the extensors acting on the occiput, and the SCM muscle on the mastoid process;

(4) Tension from the temporalis/TMJ musculature, which is partially under reflex control from the trigeminal nerve and the dorsal columns; and

(5) Mechanical eccentric torque applied from the mandible to the temporal condyle, which is altered with changes in the occlusion.

Any alteration in these mechanics is amplified via the petrious lever to the deep pressure proprioceptors within the squamosal suture. As these are activated, the temporalis/TMJ musculature reflexively contracts to accommodate all of the various changing forces. The reflexes are sustained, and adapt to the rate of firing within the proprioceptors. An excellent example of this type of adapting reflex is observed in the chorda tympani muscle, which contracts to inhibit the mechanical input from the ossicles within the ear mechanism when it becomes too great. It protects the neurology of the inner ear from excessive mechanical input. This muscle is also part of the trigeminal system. These adaptive reflexes are not confined to the TMJ musculature, the entire body will adapt due to the trigeminals sensory afferent influence to the dorsal columns of the brainstem. The temporal bones proprioceptively, and mechanically, link the pelvis to the cranium. Given the function of this bone as a neurologic amplifier for mechanical input, and its unique neurological connection to the rest of the body, you could think of it as the temporal ossicle.

The Sphenoid Bone

The sphenoid bone stabilizes the orbits of the eyes from the posterior cranial vault which has more movement occurring in it from breathing and walking mechanics. It has two types of articulations with the temporal bone. The superior portion of the suture is squamosal and provides the capability of gliding movement between the bones, more so than any other suture in the cranium. The inferior suture is serrate, and acts like a gear cog. As the temporal bone is pulled inferiorly and posteriorly into flexion, it simultaneously rotates slightly posterior. The gear cog action of the serrate suture counter rotates the sphenoid, maintaining its perpendicular orientation to the posterior eye socket. The superior squamosal portion glides, and allows this to happen. The entire eye socket is displaced slightly posterior and inferior, with the traction from the temporal bone, but its relative angle to the field of vision remains constant. Its action functions very similar to the sacrum in the pelvis, providing stability between the coordinated oscillating movements of the temporal bones and innominates respectively. The sutures of the sphenoid are very active with proprioceptive reflexes, which like the temporal bones, is mediated through the trigeminal system. Altered reflex activity within the sutures around the sphenoid and in the sacroiliac joints, have both been clinically correlated with specific patterns of muscular and visceral dysfunction in applied kinesiology.[8] With the function of its movement pattern, and the significance of its reflex neurology, think of the sphenoid as being the biomechanical and neurological analogue of the sacrum. In walking mechanics, its the sphenoid that is the Lovett reactor to the sacrum.

The Occipital Bone

It is due to the paper thin cortex of this bone that movement occurs in the cranium. There is actually very little movement between the sutures, except for the squamosal. The majority of the movement we associate with flexion and extension occurs because of the (in vivo) flexible nature of the flat plate bones.[4] To see this in the anatomy, transilluminate the cranial vault. There are two areas in the occipital bone where the cortex becomes extremely thin. They are approximately 2.5cm in diameter, just medial and posterior to the mastoid processes. During respiration, as the extensor musculature and the SCM tension bilaterally pulls down on the margins of the occipital and temporal bones, the occipital condyles are simultaneously pushing up relatively superior towards the center of the cranium. This causes the thin cortex of the occiput to flex and pocket down like an osseous diaphragm. In bipedal walking mechanics, the extensor and SCM tension is unilateral, causing only one side of the occiput's osseous diaphragm to flex at a time. The falx, and the tentorium, act as secondary diaphragms, dividing the cranium and enhancing the fluid dynamics of the system. The occiput moves in an analogous direction to the sacrum in simple breathing mechanics. It moves in the opposite direction of the sacrum during walking. The historical model of these biomechanics proposed by Lovett, was more than likely based on palpation techniques with the person laying supine and only breathing.

Mechanics and Fluid Dynamics:

To better appreciate the spinal and cranial mechanics involved in breathing, a good exercise is to visit a zoo and observe a chimp, or gorilla breathing while in a quadruped position. During the inspiration phase of breathing, their abdomen drops towards the ground and exaggerates the lordotic curve of the spine. Its a function of extensor muscle tension, that's why the spinous processes approximate. But why does the sacrum tuck under, in an anterior direction, opposite the lordotic curve? It has to in order to accommodate the pull from the anterior attachments of the inflexible dura. The anterior portion of the dura is toward the outside of the lordotic curve that's being exaggerated. Its distance from the center of the radius of the curve is greater than that of the posterior dura. It generates a greater moment, and pulls up on the anterior sacrum, tucking it under. This same tension also pulls down on the petrious portions of the temporal bones, and rotates them slightly posterior. The pulling from the dura combined with the extensor and SCM muscle tension at the margin of the cranial base bilaterally pulls down and flexes the thin occipital cortex creating two symmetrical pockets, or diaphragms. The occipital condyles push up from the center as the temporal bones are pulled inferior and rotated slightly posterior. The tentorium is pulled taught as the parietal bones gently traction down compressing the cortex, displacing cerebral spinal fluid and capillary blood. During expiration the flexors of the body contract allowing the extensors and dura to relax, letting everything spring back and decompress.[4] This brings a surge of fresh oxygenated blood and cerebral spinal fluid to the outer cortical tissues, enhancing their circulation and creating a bilateral pumping action. You can think of it as your brain inhaling while your lungs are exhaling. That is why you hear your pulse more when you exhale after vigorous exertion, try it next time you're out jogging.

Erect bipedal movement, however, requires unilateral extensor tension. Furthermore, there is increased superior push from the unilateral occipital condyle. The cranium must shift its center of gravity in order to remain balanced on one foot. This transfers all of the load to one occipital condyle. Segmentation, which has been demonstrated radiographically, explains this phenomenon. It states "Maximum stability of the segmented body is assured when the centers of gravity of all the weight-bearing segments lie in a vertical line which is centered over the base of support."[17] As the skull shifts its center of gravity laterally, it must tilt relative to the cervical spine in order for the eyes to remain horizontal. The combination of tilting, the center of gravity shift, and inferior tension applied from the unilateral extensors required to counter the

weight of the entire body, adds up to considerable force pushing up unilaterally on the base of the skull. As this occurs, the temporal bone unilaterally drops interiorly and rotates slightly posterior and it causes the flexible cortex of the occipital bone to form a unilateral pocket, or diaphragm. This exerts more pressure on one side of the cranial vault, and due to the falx, creates a unilateral pumping action. Add the other side with an oscillating rhythm and you have a more efficient dual pump providing additional oxygenated blood and cerebral spinal fluid. It is important to note the opposite temporal bone concurrently swings relatively superior and rotates anterior. One extends while the other is flexing. This movement pattern is also consistent with the pulling and torsional forces imparted from the anterior and lateral poles of the dura. As the skull shifts laterally it will apply more tension to the lateral pole of the dura on the side it is shifting toward. This causes additional inferior pulling and posterior torque to that temporal bone unilaterally. The added efficiency of this bipedal pumping mechanism contributes to the metabolic support of the upper cortical layers, which developed in part, from adapting to this movement. The normal functioning of these bipedal cranial mechanics is dependant upon adequate cortical tone bilaterally (central integrative state) to maintain balance of the muscle tension patterns responsible for them. The cortical tone, in turn, is dependant upon the mechanical fluid dynamics for metabolic support, aiding in the maintenance of oxygen levels. As the aerobic metabolism diminishes, the cortical tone diminishes, muscle tone is lost and the mechanics break down. This creates a sustained unilateral increase in hydrostatic pressure which would inhibit capillary blood flow unilaterally on that side. With reduced capillary blood flow, oxygen levels drop from within the tissues and there is less oxygen to drive the sodium potassium pump, causing a relative potassium equilibrium to establish on one side of the cranium. A relatively hypo-polarized half of the brain is very consistent with the definition of the pyramidal distribution of weakness, which has been described as the penultimate of neurologic lesions.[6] If this hypo-polarized condition persists, sensory level efferents coming through the thalamus will re-route to the relatively hyper-polarized side of the cerebral cortex. This happens as a function of normal electrical physics; electricity will follow the path of least resistance. This causes an overlapping of both the right and left sides of the body onto the same side of the cerebral cortex causing a neurological disorganization. A unilateral intercranial fluid dynamic model accounts for both the pyramidal distribution of weakness, and the clinical phenomenon referred to as switching. A unilateral intercranial difference in densities, that changed when the pelvis was blocked into a gait pattern, has been demonstrated in an MRI study.[33]

Squamosal Suture/ T.S. Line

The human squamosal suture is unique to the primates. Its articular surface is angled to the cortex increasing its surface area. The external cortex of the parietal bones display a series of fanned out striations which can be described as projections from the synovium of the suture. The synovium within the suture is divided into a series of pockets, or chambers, that correspond with the squamosal striations on the external cortex. Deep pressure and kinesthetic sense is derived as mechanical pressure is applied to the various portions of the squamosal suture.[9] As this occurs the synovial fluid is displaced out into the synovial striations, and a correlating part of the temporalis muscle reflexively contracts stabilizing that portion of the suture. Applied kinesiologists have been studying the clinical correlation of the squamosal suture proprioceptic complex for decades referring to it as the T.S. Line. If the palpated pattern of indicators represents muscle inhibition along this suture (T.S. Indicators infer muscle weakness), several correlations can be observed.[22, 31] Walking imparts a rhythmical repeating pattern of mechanical pressure along the course of the squamosal suture as the temporal bones oscillate, or Lovett, with the innominates. Based on the muscles that stabilize the knee, a hypothetical line is placed on the T.S. chart that represents where heal strike would be. The various sequential patterns of muscle inhibition describes gait movement of the ipsilateral extremities (*see fig. 1*). Another similarity is observed if perpendicular (plumb) lines are created through the centers of

gravity of the cranium and the body. When the angle of hip flexion at heel strike is compared with the hypothetical heel strike angle on the skull, the angles are similar (*see fig. 1*). A third correlation, is if the points on the T.S. Line represent inhibitory triggers activated by the mechanical pressure along the sutures. The dysfunctional pattern imparted onto the T.S. sutures by the inhibition of bipedal mechanics with a right foot forward gait, causes a muscle weakness pattern identical to the pyramidal distribution. When the somatovisceral reflex from aerobic stress to the liver produces reflex hypertonicity of the right upper trapezius and neck extensors, it tractions the right temporal bone into a relatively flexed position. This loads pressure on the right posterior inferior part of the T.S. line corresponding with the right iliopsoas. Because of bipedal cranial mechanics, the left temporal bone is pushed into a relatively extended position. This puts pressure on the anterior T.S. Line corresponding to the left extensors in general, producing an overall weakness pattern that is consistent with the pyramidal distribution of weakness.

The applied kinesiology cranial analysis pattern that is observed is a left internal frontal fault (therapy localizing to the left frontal eminence) with a universal cranial fault/category 1 pelvic fault in a clockwise or right foot forward pattern. If the symptoms are more severe, what is usually observed is a right sphenobasilar inspiration fault with a category 2 pelvic, or sacral, fault on the right. In either case the torque pattern being applied to the temporal bones, and the innominants is the same. With the left internal frontal pattern the head is usually high on the left, and with the right sphenobasilar pattern it's usually high on the right (*see fig. 3*).

Cortical Organization:

Models of the cortical structure of the brain demonstrates that it communicates with what is described as a spatial frequency signal.[19] This spatial signal would be generated and sustained, by the flux of the proprioceptive sensory afferents from the joints and muscles. This has significance when you consider the analogous spatial arrangement of the articulations and muscles around the innominate and the temporal bone. In the pelvis, the innominate bone articulates from the sacrum then flares out laterally to an eccentrically positioned ball and socket joint when viewed from the lateral aspect. The eccentric innominate is stabilized by the iliacus muscle with a small origin at the lesser trochanter to a broad fanned out insertion onto the iliac crest, allowing the muscle to pull from a variety of angles. The temporal bone has a similar spatial arrangement to its articulations. The petrious portion flares out laterally, from just above the occipital condyle, forming an eccentric that articulates with the mandible in a semi ball and socket fashion. It is similarly stabilized by the action of the temporalis muscle, also having a small origin on the mandible and fanning out to pull in a variety of directions. Imagine the spatial articular arrangement of the pelvis producing a particular spatial proprioceptic signal in the cortex. The analogous articular arrangement of the cranium would produce a similar spatial proprioceptic pattern, which would parallel the signal pattern for the pelvis. This three dimensional signal architecture would be very sensitive to any change in either of the two signal patterns. This would allow interpretation and response to any three dimensional change in center of gravity, relative body position, or muscle tension between these two major body segments. Since they are also mechanically tied together with the dura, insuring coordinated movement, they could be thought of as spatial proprioceptic analogues, or just proprioceptic analogues. When humans started to walk, it shifted the proprioception of the head from out in front of the pelvis to directly above it. It also increased the amount of gravitational input to the articulations in the upper cervicals and cranium increasing the proprioceptive rate of firing from these structures. Adapting to this new spatial arrangement, and increased signal intensity, would have contributed to the development of our ability to perceive and ultimately conceptualize, in three dimension. This explanation also accounts for the analogous muscle tension and subsequent articular restriction patterns observed between the pelvis/lower extremity, and the cranium/TMJ.[2, 3, 34]

Triplaner Analysis of the Cranium and Posture

Posture analysis has been utilized by applied kinesiologists, and physical therapists, for decades.[22, 56] It has been successfully utilized as a diagnostic aid for specific muscle dysfunction, and predicting predisposition toward injury in athletes.[29, 30] The clinician observes the standing patient from behind, noting the level of the occipitotemporal plane of the skull (from the mastoid processes), the level of the shoulders and the level of the hips, relative to a plumb line down the mid sagittal plane of the body. Record these observations utilizing a simple stick figure approximating the angles. Additional notes are usually made about the arches of the feet, various dysfunction of the plumb line such as antalgia or scoliosis, rotation in the shoulders, and yaw patterns between the shoulders and pelvis. However, for the purpose of limiting discussion, this paper will only be considering the three major planes of the body, and several common variations expressed with the pyramidal distribution of weakness (*see fig. 3*).

Triplaner cranial analysis has been utilized successfully over the last several years by Dr. Bob Walker in a chiropractic/dental co-intervention technique for managing headache pain.[4] It employs a similar methodology as postural analysis, visually comparing the major planes of the cranium to a mid sagittal reference. Starting with the frontal view, the clinician faces the patient and locates the external acoustic meatus of the temporal bones. Using this for a reference, level the ears out to a horizontal plane and bisect the face with an imaginary mid sagittal line. Palpate the zygomatic frontal sutures at the lateral border of the eye sockets and compare the orbital plane to the temporal plane. Have the patient first grin, then open their bite approximately 1cm to view the molars and compare the occlusal plane to the other two. Record the observations using a simple face with three lines, taking care to orient the cranial geometry to the same side of the body as the posture recordings (*see fig. 2*). Variations in the geometry of the frontal plane are referred to as "role patterns" and indicate dysfunction related to gait neuromechanics. Next, have the patient tilt their head back and observe the cranium from the submental vertex view. Palpate the mastoid process on both sides, and mark them with your thumbs, cradling the patients head in your fingers. Compare the angle of the forehead to the line formed between the mastoids. Then have the patient open their mouth and compare the angle formed from the two lateral canines to the mastoids. Record the observations for the forehead above the frontal face diagram and for the maxilla underneath it. Variations in the geometry of the transverse or horizontal plane, referred to as "yaw patterns" are graded for quick reference, and further contribute to the gait pattern (*see fig 2*). Lastly, observe the patient from the side, or lateral view, and note their relative head posture to the body. A forward head posture with a retracted mandible (overbite) is exhibiting a relative expiration, or anaerobic excessive cranial pattern, referred to as an "expiration pitch." It is the more common pattern. A backward head posture with a protruding mandible (under bite) can be referred to as an aerobic excessive, or "inspiration pitch." Ideally, the developing cranial geometry, which is physiologically influenced, should be balanced, with a neutral pitch with good mandibular placement (neutral bite).[12] Orthodontically these are referred to with a classification system; a class I (neutral bite), a class II (overbite), and a class III (underbite), respectively. This is a good way to record these observations. There are methods to photographically and radiographically document these observations, but for this discussion these details are not necessary; just taking notes, and observing these patterns with this method is a good way to get started.

Clinical Considerations

Once the pyramidal pattern has been identified through observing the posture and cranial geometry, confirm it with manual muscle testing and blind spot mapping.[10, 55] Assess the patient for metabolic dysfunction, then eliminate as much contributing proprioceptic dysfunction from the body as possible. There is a consistent pattern of tenderness found at the insertion of the left SCM onto the clavicle, the insertion of the

right iliopsoas onto the lesser trochanter, and the distal portion of the left iliotibial band when compared bilaterally. There will also be hypertonicity, and tenderness in the belly of the left pectoralis minor, and the left quadratus lumborum muscles. These points should be monitored for effectiveness of therapy, and for differential diagnosis between proprioceptive and metabolic dysfunction. There are two metabolisms which can influence the pyramidal distribution of weakness; the aerobic metabolism and the breakdown of cartilage. The aerobic metabolism is ultimately the more important for stabilizing the condition, and should be addressed first. Utilizing the aerobic/anaerobic exertion challenges developed by Dr. Phillip Maffetone, determine if the patient is aerobically deficient, or anaerobically excessive. Support the deficient metabolism and evaluate lifestyle factors (i.e. high carbohydrate diet, or excessive workouts) which are contributing to the person being chronically anaerobic and correct them.[13] The breakdown of cartilage is secondary to the muscle imbalance and articular dysfunction created with the pyramidal distribution of weakness. This is what makes the pyramidal distribution such a vicious perpetuating circle of dysfunction, the cartilage breakdown feeds back and drives the neurology further into the pyramidal pattern. Although it is important to initially support cartilage metabolism, the ultimate key to stabilizing this condition is to get them aerobic and keep them that way.[13,40] The earlier the patient shifted anaerobically in their development, and the longer they've been that way, the more significant their cranial geometry will be altered. If the degree of shift in the cranial geometry is significant enough that metabolic and kinesiological balancing alone cannot correct it; co-intervention from a dentist or orthodontist may be required using an appliance to artificially remodel the cranial geometry.[4, 45] With this technique, you can remodel the bony structure of the cranium/mandible for the purpose of driving the pyramidal neurology to an optimally balanced position.

The significance of the occlusion mechanics to the pyramidal distribution of weakness can be observed easily utilizing a tongue blade. Take someone with a balanced neurology and occlusion and place a tongue blade in between their left molars. Have the person apply tension to the blade while they breath deeply several times, or walk around the room. They will immediately exhibit a pyramidal extensor weakness pattern on the left using maximum gamma-2 patient started muscle testing.[6] Similarly, if you take someone who is exhibiting a pyramidal weakness pattern on the left (it's nearly always on the left), and place the tongue blade on the right, it will negate the pyramidal weakness. Treating someone with a pyramidal weakness isn't always this easy, but this is a good exercise to understand how sensitive this neurology is to changes in the occlusion. When you increase the vertical dimension of the mandibular placement within the TMJ, it relieves restricting pressure to the temporal bone, and increases the rate of firing from proprioceptors within the squamosal suture. This increased rate of proprioceptic firing drives the ipsilateral cortex back towards a relatively hyperpolarized state, or a sodium equilibrium.[10] Occasionally it will be necessary to have someone's bite equilibrated. A couple of examples are if the onset of the symptomatology correlates with recent dental work, or if the patient is under orthodontic, or TMJ management and is experiencing complications. In the dental positioning of the mandible within the temporal fossa, to stabilize a TMJ joint. There is a well established anterior to posterior position, which is evaluated radiographically. However, there is no such standard for the vertical placement of the mandible within the temporal fossa.[4] This is where applied kinesiology muscle testing, and knowledge of the pyramidal distribution of weakness with its metabolic influences, can be of great value to the patient, and to the dentist who is also attempting to help their condition. Using the ipsilateral extensor weakness as a monitor, and the triplaner cranial pattern as a guide, level the mandible out relative to the temporal bones. Use standardized equilibration shims, available through any dental supply, and some impression wax to maintain the space when the shims are removed and the dentist applies the filler. Always use build ups, or splints, for two reasons. The problem from the occlusion is usually always caused by diminished vertical dimension within the TMJ. Secondly, any corrections made can be reversed and the patient will still have their original enamel and bite. Sometimes it may be useful to use a build up initially to break a symptom pattern, then gradually

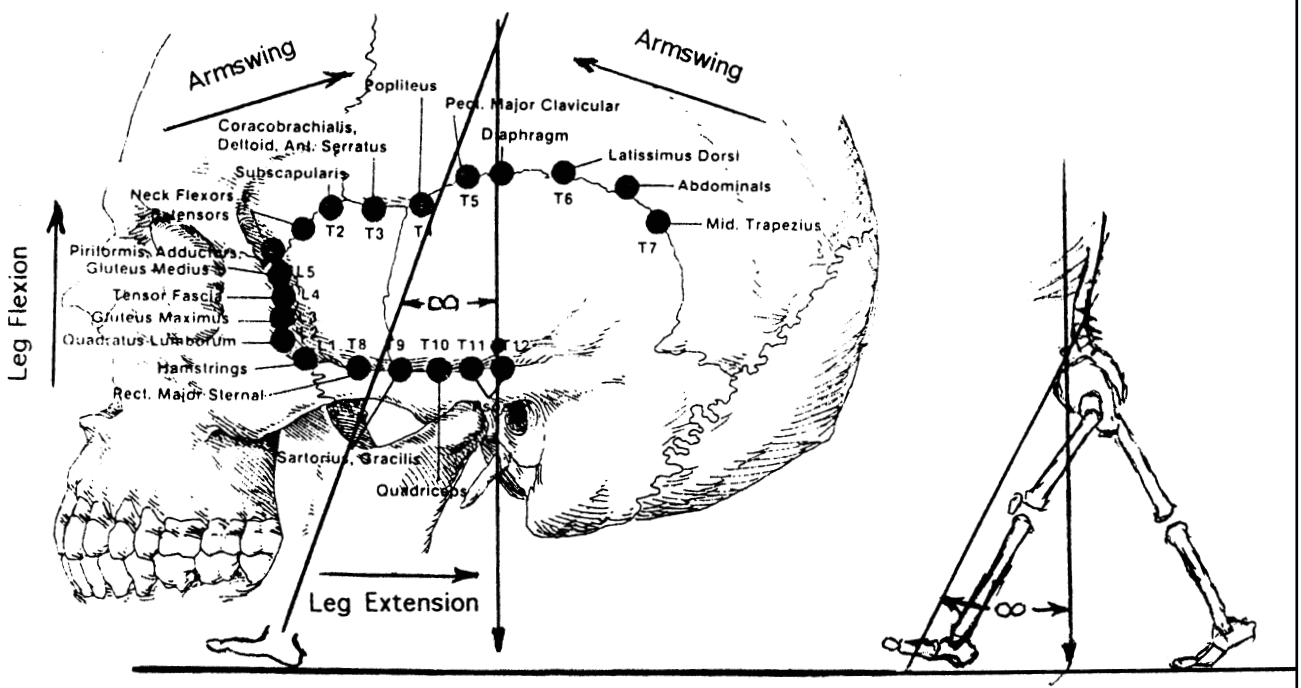
take it back down as the person metabolically, and cranially, gets healthier. The thing to remember is the cranial geometry is variable depending on the muscle tension pattern, and that can be altered with applied kinesiology techniques and sustained with aerobic metabolism. This may take several months, or longer, to get the patient aerobic. So if the symptom pattern is subsiding, don't change the bite. Note the triplaner cranial pattern and continue with your normal kinesiological and metabolic based care. Some individuals cranial geometry shifts remarkably within the period of an office visit. However, its far more common to note changes over a period of months while the persons metabolism is shifting aerobically and they are getting healthier in general. It is a wonderfully rewarding experience to work with a dentist doing cranial orthopedics, there is much you will both learn of one anothers potentials. Be patient and humble, a confidence between professionals of this nature is difficult to establish.

Ideally, the cranium should be level, symmetrical, with a neutral pitch in the bite pattern (a class I), and balanced neurology. It is not always correct to merely put the cosmetic bite orthodontically into a class I.[4, 12, 16] The functional mechanics of the TMJs and the entire cranium should be addressed due to their influence on the pyramidal neurology. If the bite is in the wrong place, a pyramidal distribution of weakness will be exacerbated whenever the patient clinches. The condition has been described as a temporomandibular cranial dystonia.[46] The proprioceptic reflex pattern dictated by the cranial sutures will drive their neurology into a pyramidal pattern. This is how applied kinesiology techniques can significantly aid any orthodontic intervention.

Conclusions

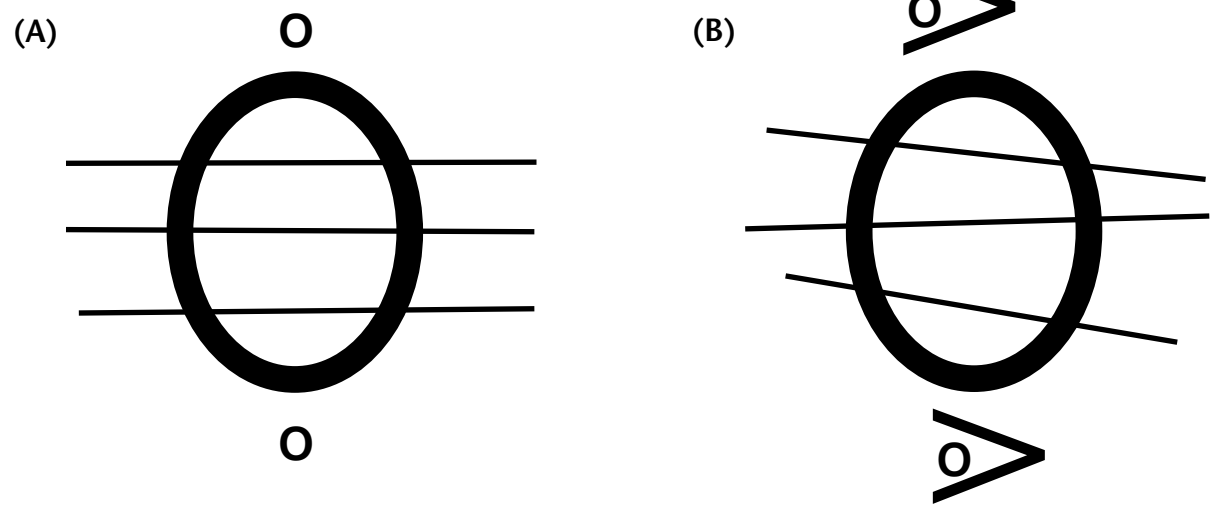
The cranium and body are sensitive to proprioceptic changes within each other through common neurological connections in the upper cervicals and brainstem. The proprioception derived from the cranium contributes to the nervous system and the rest of the body as a major organ of balance. The pyramidal distribution of weakness affects the entire body, including the cranium and is functionally corrected by improving the persons aerobic metabolism. When a persons metabolism is chronically anaerobic, the pyramidal distribution influences the cranial structure with chronic tension imparted from the temporalis/TMJ musculature. Due to the somatovisceral relationship of the liver to aerobic metabolism, this tension pattern almost always involves the right side of the cranium. As the temporalis/TMJ musculature progressively tensions from the chronic metabolic imbalance, it alters the cranial geometry over time in a predictable pattern. These patterns can be observed utilizing triplaner cranial analysis correlated with postural analysis and evaluated with neurological and applied kinesiology techniques. Correction of these patterns requires maintenance of all three aspects of the functional triad. Cranial orthopedic co-intervention with a dentist may be employed if the cranial dysfunction is severe enough that the proprioceptic pattern within the cranial geometry is inhibiting further progress. Our current clinical model of symmetrical cranial movement does not account for these patterns being consistently observed. When the model of cranial movement is adapted to account for asymmetrical bipedal mechanics, these observed patterns become understandable and potentially predictable. Other clinical observations within the applied kinesiology protocol, such as the T.S. Line, also become understandable with bipedal cranial mechanics. From an anthropological point of view, this functional interrelated triad representing clinically optimal health, evolved from the common movement pattern of bipedal walking, which humans behaviorly adapted themselves to approximately seven million years ago.

Figure 1:



T.S. Line displaying muscle inhibition patterns consistent with walking movement, and similar angles "∞" of heel strike from the perpendicular plumb off the center of gravity of the two body segments.

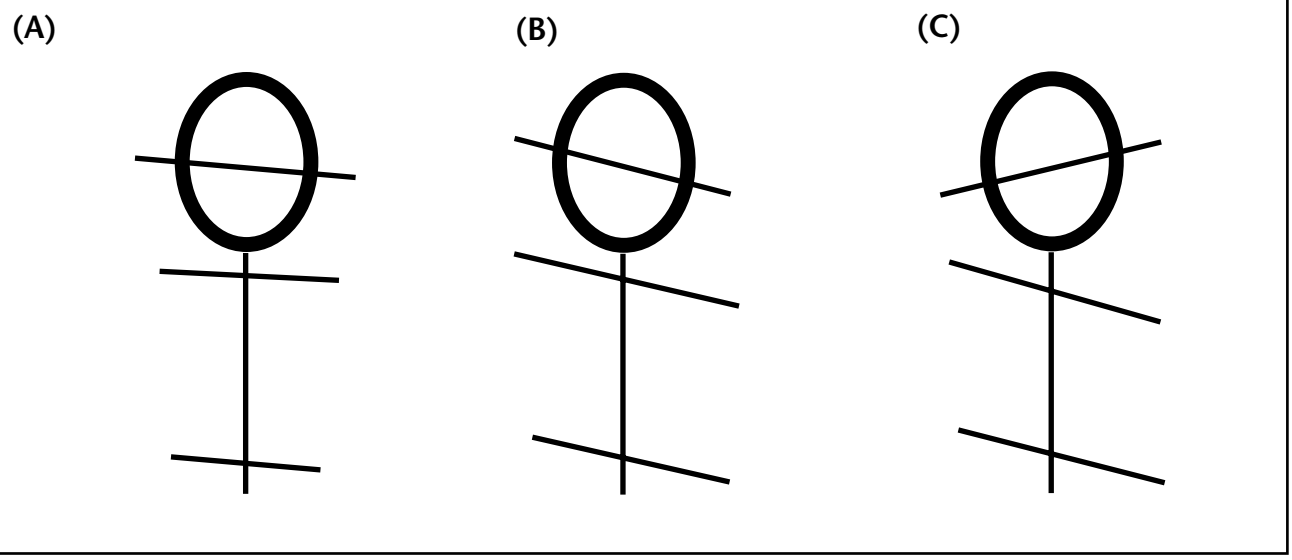
Figure 2:



(A) Optimal balanced cranial triplaner geometry without yaw distortion. Yaw distortion graded as 0 = Zero Yaw; o> = Moderate Yaw; > = Pronounced Yaw.

(B) Common pyramidal cranial triplaner geometry with high left eye, occlusion, and mild yaw to the left.

Figure 3:



(A) Optimal balanced posture.

(B) Common pyramidal distribution of weakness pattern displaying generalized left ipsilateral extensor weakness, and contralateral hip flexor weakness. Usually a left internal frontal cranial fault, or a right category 1 pelvis with a universal occipital fault.

(C) Variation of the pyramidal weakness pattern with a right sphenobasilar cranial fault. Note: The rotation of the temporal bones are in opposite directions, but the distortion of the sphenoid is in the same direction.

Summary of Procedures

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HeartMath: Is This the Answer to Placebo Effect?

John R. Schmitt, D.C.

...we glory in tribulations also; knowing that tribulation worketh patience and patience, experience; and experience, hope; and hope maketh not ashamed; because the love of God is shed abroad in our hearts by the Holy Ghost which is given unto us.

Romans 5:3-5

Abstract

HeartMath, as taught by the Institutes of HeartMath, reduces burnout from overload, anxiety and indecision. This paper builds on the original HeartMath techniques of Freeze Frame, Heart Lock-in and Cut-Thru. Streamlining various AK procedures and reduction of patient symptoms are discussed. It is suggested that the concepts of HeartMath may represent a plausible explanation of placebo mechanism.

Introduction

My brother, Dr. Walter H. Schmitt Jr., sent me some information on HeartMath in November of 1997. The two pages summarized the history of Heartmath and included three techniques to incorporate into our treatment protocol. After working with the techniques with moderate success, I decided to explore the possibilities of another technique in hopes it might yield greater results. This paper is a summary of a protocol and technique which produces results in the neurological clearing and symptom reduction of allergy patterns, emotional stress, pain, inflammation and other types of day-to-day health concerns in my clinical practice.

Discussion

I have taken a more direct approach to the techniques called Freeze-Frame and Heart Lock-in. Both of these techniques involve sending a positive emotion to the area of the heart. A patient can use any thought he chooses so long as it is positive. Focusing this thought in the heart for up to five minutes can yield many beneficial results. In my technique, I find a weak muscle in the clear and ask the patient to think of an appreciative thought from the past or present. The thought can include a person, a situation or an event that the patient appreciates. I muscle test the patient during each thought until the weak muscle locks into strength. This can take a few thoughts, or dozens, depending on what the nervous system decides is important.

Once the nervous system has locked into the most appreciative thought, I tell the patient to think about that appreciative thought and focus that appreciative emotion/thought into the heart. Then I tell the patient to feel his heart fill up with that appreciative feeling on every breath until his heart feels full. When his heart

feels full, I tell the patient to open up his heart and let the appreciative feeling flow throughout his body, or send the positive feeling to the area of most need, e.g., any ongoing symptom. The patient will continue this process until all weak muscles remain strong, even after thinking a negative thought (approximately three to 10 minutes).

I have also developed a modified technique based on HeartMath's Cut-Thru technique. The Cut-Thru technique describes blending a negative/stressful emotion together with the positive thought, so that the appreciation overtakes, absorbs or dissolves the negative emotion. Instead of blending the two emotions together, I have the patient combine the two thoughts and, once their heart feels full, send the combined appreciative thought and distressful thought out of the body. I tell them to give it to God. This modification has given many emotionally distressed patients almost instantaneous relief.

I perform the HeartMath technique after first clearing all the injury recall areas and tonic labyrinthine reflexes. The HeartMath technique has yet to clear these two procedures. Also, if the patient has a difficult time focusing on his appreciative thought, it may be necessary to clear his mental block by using IRT on the quadracepts N.L.

With both techniques, I have found greater long term effects that neutralize a number of treatment techniques. For instance, 100% of the lateral flexion procedure in Dr. Walter H. Schmitt's centering the spine technique is cleared from the patient after the HeartMath tecnique is completed. Also, 75% of the patients are cleared of the Antronex, Arginex and Aspirin technique and 50% of the patients are cleared from the sugar sensitivity in Walter H. Schmitt's AAA+S technique. The lower percentages in the AAA+S technique may occur from acute ingestion of foods containing these allergens. Neutralization of these techniques made me realize that perhaps we have found a way to tap into the beneficial effects of placebo. A patient can go into a doctor's office with great expectations of getting well and, with little treatment, receive significant reduction of his symptoms. Placebo is given credit for the "cure." If indeed people with health problems have great hope for a cure, and hope, biblically and figuratively is found in the heart, then it would make sense that a person who incorporated a wishful thought of cure or even an appreciation of being listened to into his heart, may ultimately be exercising the benefit of HeartMath in its most basic form.

Conclusion

A few years ago Bill Moyer, M.D. had a special series on PBS about alternative health. Toward the end of his first segment, he suggested that the effects of Asian forms of healing helped 60% to 70% of the population and could be associated with placebo effect. What troubled me with that statement was how the Asians have twice the placebo effect of our western medicine. Knowing that the Asian culture places a high priority on body/mind healing, maybe their culture has tapped into the effects of HeartMath in a more universal manner. In either case, Dr. Moyer gave little credence to such "unscientific" forms of healing and proceeded with his next segment without elaborating on his comment.

HeartMath is in its infancy. Hopefully, in the future, the body that is the ICAK can research and develop a better understanding of this HeartMath phenomenon.

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Laryngeal Centering Techniques

Dale Schusterman, D.C., DIBAK

Abstract

This paper is a follow up of two previous papers written in the last Proceedings, concerning a new way of approaching the left-right brain patterns in the body. The work of Alfred Tomatis and his observations about right ear dominance is central to this discussion. Two new ways of centering the body with laryngeal activation will be presented. The first is an improved version of the left brain pattern. The second is a new pattern involving the circulatory system and the five element theory of Chinese medicine. An effective treatment approach will also be presented that is an extension of Injury Recall Technique (IRT).

Introduction

In two previous papers, Balancing Internal Acousticsi and The Right Brain Pathway and Sensory Dominance ii, I described several methods of stimulating pathways that relate to primarily one side of the brain or the other. The effect of this stimulation is to create a global weakness as tested with applied kinesiology (AK) muscle testing. Various treatment modalities were proposed to correct this pattern. The basic concept of this technique is predicated upon the observations of Alfred Tomatisiii, a French ear surgeon. He observed that the recurrent laryngeal nerve was shorter on the right side and longer on the left side of the body which he said was responsible for a preferential dominance of the right side of the larynx, left side of the brain and right ear. The left recurrent laryngeal nerve travels around the heart and is therefore longer than the right recurrent nerve. This length differential allows the right larynx, left brain, right ear pathway to be more easily facilitated (than the left larynx, right brain, left ear) when an infant is learning to reproduce sounds that he hears. This preference causes the laterality or hand dominance that soon develops in the normal child. The previous paper, Balancing Internal Acoustics, discusses the psychological and physical ramifications of this neurological dominance, as well as the theory and practice of the techniques designed to take advantage of this neurological asymmetry.

Discussion

In the past year I have investigated numerous ways to create a deeper effect with this dominance pattern or asymmetry in the nervous system. This has resulted in two new protocols for your use and evaluation. Both sequences will create the global weakness (via AK muscle testing techniques) and then they will bring the body back into a strength position. Following each procedure, there is a simple and very effective way make the necessary corrections. Each procedure may be done in the clear or as part of an active treatment focus (working off a positive TL, substance in the mouth, etc.). The different protocols work at different levels in the body and one procedure will work when the other doesn't. Try one and then the other. Oftentimes, both procedures, and possibly many times, each may be necessary to correct one condition.

The first protocol is somewhat similar to the method shown in "Balancing Internal Acoustics" and is used in its place.

1. Have the patient silently mouth his name (or any word).
2. Very gently externally rotate the right temporal (bring the mastoid forward) while the patient inhales. Internally rotate the right temporal on exhalation. This is a MICRO movement and only enough to move the skin. Then close the right tragus and have the patient stop breathing for a second. This will bring the patient into a global weakness as tested in AK muscle testing (if the pathway can be stimulated).
3. In order to bring the patient back into a positive, yang or strong global muscle state, have his say the same word (or name) that he mouthed in step 1.

One way to greatly enhance the above procedure is to perform the technique while the patient is walking. Slowly walk beside him while you perform the three steps. You will find patterns that will not show up with the patient supine or even standing still. Supine cross crawling will have no effect, as the patient must be walking. The patterns of gait and hand dominance or laterality are closely tied into the right larynx, left brain, right ear pathway. (See the paper, "Balancing Internal Acoustics.")

Once the above protocol has been performed, it is time to evaluate the body to see what area needs treatment. Scan the body to assess which muscle system or structural area needs help. Any procedure you have to do this is fine. One easy way to get an idea about area of involvement is to use the six set points or beginning and ending acupuncture points on the face. The one that therapy localizes will show the system involved. Of course if you were working off a positive TL or a specific focus, then that would be the area of involvement.

At this point it is possible to go ahead and make the correction in the manner you are accustomed to using. The following procedure, however, is one that I have been using quite successfully now for some time. It is an extension of the Injury Recall Technique (IRT), developed by Walter Schmitt, Jriv. The difference here is that the IRT procedure can be performed on either ankle, either wrist or at the sub-occipital region. Only one of these areas will test for the need of the gentle traction given in IRT. The procedure is as follows:

1. Following the laryngeal centering procedure, and after diagnosing the area of need, gently compress each ankle and each wrist joint while testing a strong muscle. (Push the foot or hand into the leg or arm.) Also test a strong muscle with a gentle pressure downward on the top of the skull. Only **one** of these five areas will display a weakness.
2. Perform the IRT with a **GENTLE** traction of the involved joint. In other words, gently pull the hand or foot to slightly open the mortis or wrist joint or gently traction the head to open the atlanto-occipital joint. It takes **very little pressure** to make the correction with this technique. You can still perform the indicated manual correction following this IRT traction if you wish, however, in almost all cases it is unnecessary.

The flexor withdrawal reflex is the body's way of removing the extremity from a painful stimulus. Any of the four extremities or the neck can be the source of this withdrawal reaction. In the Alexander Technique, there is much emphasis on allowing the head to 'float' above the cervical spine. We pull our heads in similar to how a turtle pulls in its head under stress or threat. Therefore, all five extremities, including the head and neck, can withdraw energy or contract into the body under stress. Each extremity relates to one of the five elements. (See the next section.) The laryngeal centering technique removes the adaptation in the body and exposes the element or extremity that is reactive to the trauma or imbalance. The correction is made by slightly lengthening that extremity. Only one extremity will show the need for the IRT correction.

The second protocol that uses the larynx as a centering tool replaces the right brain pathways shown in the previous paper. This procedure involves the circulatory system and the laws of the five element theory in Chinese medicine. These two laws are the Sheng and Ko cycles. The Sheng cycle is the cycle of growth in which one element births or feeds the next element in a clock-wise direction around the five element chart (Figure 1). Fire builds Earth by the creation of ash, Earth gives up the Metals, Metals melt to become liquid or Water, Water nourishes the growth of Wood and Wood feeds the Fire. The Ko cycle is the cycle of control or destruction and moves in a star pattern around the five element chart (Figure 2). Fire melts Metal, Metal cuts Wood, Wood or plants break up the Earth, Earth contains or dams up Water and Water puts out Fire.

These two cycles describe the dynamic movement of energies between the elements. The five extremities, including the neck, relate to the five elements as if the body were placed directly on the five element chart: the neck relates to Fire, the left arm relates to Earth, the left leg relates to Metal, the right leg relates to Water and the right arm relates to Wood. (Figure 1).

The following technique will find and activate one of the five element pathways.

1. Have the patient TL to the thymus area over the sternum between the 2nd and 4th ribs. Then check the pulses at each wrist and ankle and one carotid pulse. Challenge any intact muscle while palpating each pulse. One of these five areas will cause muscle weakness. This is the element to begin with.
2. Now check to see if you need to activate the Sheng or Ko cycles. The Sheng cycle moves in a clockwise circle around the five extremities and the Ko cycle moves in a clockwise star pattern around the five extremities. First, remove the sternum TL and then palpate the active pulse found in step one (ie: left leg). Maintain the pulse palpation and then test any muscle on the next extremity clockwise in the circle (ie: right TFL). If a weakness occurs, then the Sheng cycle needs stimulating. If there is no weakness, then test a muscle on the extremity clockwise in the star pattern from the active pulse extremity, to see if the Ko cycle needs stimulating (ie: right triceps). One of these two patterns should be found.
3. Briefly palpate the pulses in the sequence determined in step 2 starting with the pulse found in step 1. If the Sheng cycle is indicated, then palpate the pulses, one at a time, in order around the circle from the appropriate starting point (ie: left leg, right leg, right arm, neck, left arm). If the Ko cycle is indicated, then palpate the pulses in the star pattern around starting from the active pulse (ie: left leg, right arm, left arm, right leg, neck). If you wish, have the patient replace the TL to the sternum while you palpate each pulse and as soon as the pulse has been contacted, there will be a weakness of any strong indicator muscle. This is a good way to make sure you have contacted the sometimes difficult to feel ankle pulses.
4. Once all five pulses have been palpated in the appropriate sequence, retest a muscle on each extremity (including the neck). One extremity will test weak-all muscles on that extremity. Once again palpate the pulse on this extremity and have the patient silently mouth his name or any word. This will cause the global weakness of all muscles tested in the body. Then, while palpating the pulse, have him say his name or word out loud and all muscles will return to a state of strength.
5. Diagnose the area in need using the set points or any other technique of your choice and then treat with a **slight** traction to the one of the five extremities that tests weak with compression.

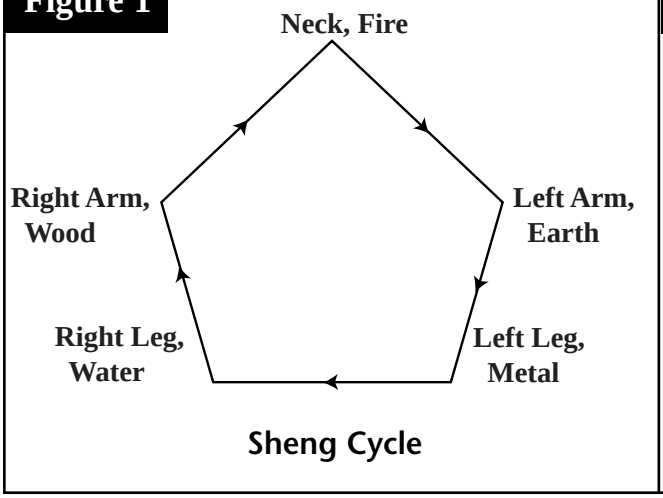
In AK it is taught that the patient must TL rather than the doctor doing the TL. The one exception to this is in the testing of the pulse.v Goodheart found that the doctor can do the TL when testing the acupuncture pulses and that it was as accurate as the patient contact. In this procedure it works equally well for the doc-

tor or patient to feel the pulses. Palpating the five pulses in the Sheng or Ko sequence will cause the muscles to test weak on only one extremity. This element is the one in need. After mouthing and speaking while holding the active pulse, you can test the muscles associated with that element and they will be found to be positive or weak (ie: the subscapularis or quadriceps for the neck/carotid pulse or Fire element).

Continue to treat using this protocol until no more patterns can be opened. These procedures will expose patterns in the body that you may never find any other way. The profound centering that occurs is extremely useful in detecting new information about a condition you are working with in the patient. Most of the techniques we use in AK are designed to elicit information from different parts of the nervous system. This protocol primarily centers the body via the circulatory system based on the five element laws. This gives us a different area to investigate from the neurological pathways we commonly stimulate.

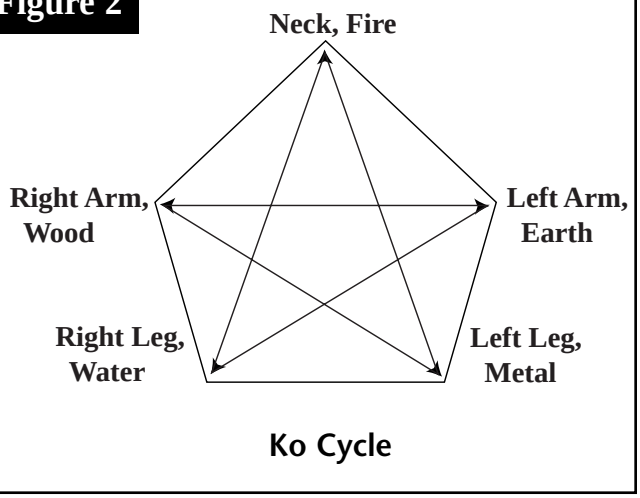
The above procedures have the effect of centering the body. We take the patient from whatever state he is are in, (how he is on the table, with a positive TL, substance in the mouth, etc.), to a state of complete yin or systemic AK muscle weakness, back into a yang or strong state. This has the effect of removing any adaptation or compensation that the body was in, especially in relationship to whatever the TL or focus was during the procedure. Many of the imbalances that we work on in our patients have counterparts in other areas of the body. If we fix one end of a torque, the body may just adapt from or to the other end of the torque. We may have a false sense that we have corrected something when in fact we have only moved the distortion around or haven't completely eliminated all parts of it. It is much like tuning an instrument such as a violin. You can tune the strings in relationship to each other, but if you don't have a reference note, such as 'C', then you may have tuned the violin so that it can't play with the rest of the orchestra. The effect of doing something to the body to cause global weakness and then global strength creates this centering. This removes any adaptation so that the treatment is more effective and to the point.

Figure 1



Sheng Cycle

Figure 2



Ko Cycle

Conclusion

Summary of the two laryngeal centering techniques:

I. **1.** Have the patient silently mouth his name (or any word).

2. Very gently externally rotate the right temporal while the patient inhales. Internally rotate the temporal on exhalation. This is a MICRO movement and only enough to move the skin. Then close the right tragus and have the patient stop breathing for a second. This will bring the patient into a global weakness if the pathway can be stimulated.

3. In order to bring the patient back into a positive, yang or strong global muscle state have them say the same word (or name) that he mouthed in step 1.

4. Diagnose the area in need using set points or any other technique of preference and then treat with a **slight** traction to the one of the five extremities that tests weak with compression.

5. This technique (Steps 1-3) is greatly enhanced if it is performed while the patient is walking.

II. **1.** Have the patient TL to the thymus area over the sternum between the 2nd and 4th ribs. Then check the pulses at each wrist and ankle and one carotid pulse. Challenge any intact muscle while palpating each pulse. One of these five areas will cause muscle weakness. This is the element to begin with.

2. Now check to see if you need to activate the Sheng or Ko cycles. First, remove the sternum TL and then palpate the active pulse found in step one (ie: left leg). Maintain the pulse palpation and then test any muscle on the next extremity clockwise in the circle (ie: right TFL). If a weakness occurs, then the Sheng cycle needs stimulating. If there is no weakness, then test the next muscle clockwise in the star pattern to see if the Ko cycle needs stimulating (ie: right triceps). One of these two patterns should be found.

3. Briefly palpate the pulses in the sequence determined in step 2 starting with the pulse found in step 1. If the Sheng cycle is indicated, then palpate the pulses, one at a time, in order around the circle from the appropriate starting point (ie: left leg, right leg, right arm, neck, left arm). If the Ko cycle is indicated, then palpate the pulses in the star pattern around starting from the active pulse (ie: left leg, right arm, left arm, right leg, neck). Have the patient replace the TL to the sternum while you palpate each pulse and as soon as the pulse has been contacted, there will be a weakness of any strong indicator muscle. This is a good way to make sure you have contacted the sometimes difficult to feel ankle pulses.

4. Once all five pulses have been palpated in the appropriate sequence, retest a muscle on each extremity (including the neck). One extremity will test weak-all muscles on that extremity. Once again palpate the pulse on this extremity and have the patient silently mouth their name or any word. This will cause the global weakness of all muscles tested in the body. Then, while palpating the pulse, have them say their name or word out loud and all muscles will return to a state of strength.

5. Diagnose the area in need using the set points or any other technique of your choice and then treat with a slight traction to the one of the five extremities that tests weak with compression.

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ICAK-Deutschland

Medical Journal for Applied Kinesiology, May 1997

Abstracts

For a copy of any of the Papers listed in this section, please contact:

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Orthopedic Pain Syndromes and Dental Focus in Testing with Applied Kinesiology

Dr. Werner Klopfer

Treatment of the stomatognathic system takes up a significant amount of space in American textbooks on applied kinesiology. However, the problem of dental foci is hardly mentioned. The problem of the dental focus is discussed at greater length in European naturopathic literature. The problem of the dental focus is also taken up in AK. This presentation attempts to explain the problems surrounding the dental focus in AK-testing on the basis of three case reports. (Ed. note) Dr. Klopfer concludes that testing for a dental focus even without tooth pain is worthwhile treating therapy-resistant problems. He calls for more investigation to differentiate neurological tooth involvement and dental foci.

Muscle Test/Therapy Localization Challenge, etc.

Dr. Med. Eugen Burtscher

After a short explanation and definition of the basic principles of AK the author reports about a preliminary study regarding these topics. The results show an interexaminer correlation between well-trained examiners of around 90%, pointing out the need for broader and more in depth studies.

AK Diagnosis and Nosode Therapy

Dr. Ivan Ramsak

Dr. Ramsak describes experiences with homeopathic nosodes in a case report, using muscle testing response to focus and direct his treatment.

Monolateral Mastication and Peripheral Problems

Gabriella Guaglio MD, DDS

Examining patients with anatomical leg deficiencies leads to correlating torque and walking gait patterns with contralateral mastication dominance. This evidence has implications for all patients with torque patterns.

Functional Neurological Disorganization - Therapeutic Switching

Wolfgang Gerz MD, DIBAK

The term “Functional Neurological Disorganization” has been defined and used in AK to describe a state in which the body - via its neuromuscular function as tested in AK muscle test - shows the opposite of what is actually true. (Ed. note) The author introduces the concept of “therapeutic switching” used in examining difficult cases.

Unexpected Switching During AK-Testing - Case

Karl Kienle, MD

The author demonstrates how undetected switching may be provoked by challenges with foods, nutrients and other remedies. He calls for attention to switching which may be hidden in deeper layers of involvement.

Facilitation of Treatment when Treating the Stomatognathic System

Dr. Med. Werner Klopfer

More than 20 years ago George Goodheart integrated the findings of Eversaul, May and Gelb on treating the stomatognathic system into the methods of applied kinesiology. In the intervening years the influence of the temporomandibular joint (TMJ) on the entire musculoskeletal system has become common knowledge (9, 10). In his work as both dentist and neurologist it was possible to achieve a reduction in the number of dental splint corrections using a pulse technique on the atlas (first cervical vertebra) according to methods described by Arlen.

Using AK to Test Dental Materials

Dr Med Dent Rudolf Meierhofer

The author shows how a variety of dental materials are tolerated by individual patients and emphasizes the need to test these materials individually before their use with any patient.

Expanding the Injury Recall Technique, Etc.

Richard Meldener, D.C., DIBAK

Any trauma is memorized in the body and creates neuromuscular stress which can be found and treated. A podiatrist's concept integrated by Schmitt into applied kinesiology is presented and expanded in this paper. This neurological memory of the injury appears to be immediately and permanently erased.

AK and the Triad of Health, etc.

The author describes case histories in which the treatment spanned may approaches addressing dysbiosis, orthodontia, orthotics, nutrition, homeopathics, etc. working with children with learning disabilities and behavioral problems.

Are Potato Allergies Increasing?

Norbert Rauh

The author describes the need to test for different genetic varieties of potatoes, in the cooked state.

Knee and Allergy

Dr. Med. Robert Schmidhofer

The overload of the structures of the knee complex due to functional disturbances of the associated musculature causes typical complaints/syndromes in the knee area. Allergic reactions are one of the main culprits of a multi-casual stress syndrome. The biological therapy is based on the results of an examination using applied kinesiology.

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A Change in World View: From Newtonian Concepts to Quantum Mechanics and Chaos Theory

Dr. Robert Frost

The "for one disease, one medicine" paradigm typical of current medical practice is outdated. The concepts of quantum mechanics, determined chaos and fractals allow us to understand disease processes more deeply and accurately than the classical models of cause and effect. Within this more expansive and inclusive world view (Weltanschauung) the multiple internal and external causes of a patient's disease may be each considered within their own individual contexts. Both the patient and his physician are operating from a far more complicated multi-dimensional picture of the processes of health and disease. Because this picture more accurately represents reality, it provides a better basis for both an evaluation of the totality of the health situation and for the application of the wider spectrum of therapeutic efforts needed to solve problems, particularly those of chronic, degenerative diseases.

Biological Medicine and the Systems of Regulation

Dr. Robert Frost

Research in biological medicine has revealed that the functioning of the body is controlled less by the genes and more directly by the "ground system of regulation". The "ground substance" of this system is located in the liquid crystal structures of connective tissue between the cells throughout the body. It is this ground substance which determines what enters and exits every cell. The ground substance forms a complex system of chemical and electrical communication throughout the body, independent of the nerves. Through the ground substance, whatever occurs anywhere in the body has a nearly immediate effect throughout the body. The meridians of oriental medicine appear to be located and transmit signals along functionally connected chains of connective tissue of the ground substance. The 14 major meridians, which AK uses to order all the structures and functions of the body, may be meaningfully described as the 14 "systems of regulation" of the body. It is becoming evident that the process of improving health is identical with improving the functioning of the ground substance. The genial and simple techniques of AK make it possible to directly determine the optimal individual treatment for improving the ground substance. This ability is rapidly making AK the tool of choice for diagnosis and for determining the proper individual treatment in biological medicine today.

ICAK-U.K.

Collected Papers, 1998

Abstracts

For a copy of any of the papers listed in this section in their entirety, please contact:

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Reconciling Conventional Research Designs with Holistic Healing: A Scientific Conundrum

Mark 0. Mathews B. Sc. (Hons), DO MRO

The difficulty of applying classical research methodologies to holistic healing is explained. The limitations of design of standard scientific research is illustrated. Developments in methodology that have evolved to reconcile incongruents in classical research compared to clinical observation in psychology is discussed. The myth of scientific objectivity is alluded to. It is argued that the ecological perspective which accepts the common sense observation of the interactive nature of living systems requires a further evolution in research design. We need to work synergestically with living systems, rather than split them up into ever small disconnected pieces. Such an approach is required for research into the Sunflower Method for children with learning difficulties. If the Roehampton Institute London can rise to this challenge it could have useful knock-on effects on ways of approaching the study of other problems besetting mankind.

Surrogate Testing - Its History, Controversy and Recommended Uses

Hans W. Boehnke, D.C., DIBAK

Surrogate testing is a procedure which utilizes manual muscle testing to help in the diagnosis of some disorder or lesion in a patient. The uniqueness of this method is that the patient being examined, person number one, is passive with regard to the actual test but is in physical contact with the second person, the sur-

rogate. The lesion is either touched by the surrogate or by the patient and a previously intact indicator muscle of the surrogate is tested for a change in function. In some cases the patient is subjected to a physical, chemical, or mental challenge and a previously intact indicator muscle of the surrogate is tested for a change in function. The purpose of this paper is to survey the current literature on surrogate testing and draw conclusions on its utility for practitioners of applied kinesiology.

The Primary Reactive Muscle Pattern

Patrich Wennergren D.C.

The following paper is a presentation of an Applied Kinesiology (AK) method to determine which primary muscle is responsible for causing multiple reactive muscles to test weak.

The Primary Alarm Point Technique - Using All Three Sides of the Triad of Health

Patrich Wennergren, D.C

This paper presents an Applied Kinesiology (AK) method using the primary alarm points as diagnostic tools to find components from all three sides of the triad of health. The technique is symptom based. The purpose is to consider and identify more aspects of a specific health problem. Treatment can then be applied accordingly.

The Reliability of Muscle Testing and Kinesiology Diagnosis

F.G. Eastwood, B.Sc., Ph.D., Dip. Hom. Med., MHMA, MBBA

A review based on the author's own experience outlines some of the factors that influence the reliability of muscle testing and kinesiology diagnosis and suggests how research into the art and science of kinesiology can be improved.

A Research Review and Treatment Programme for Fibromyalgia

F.G. Eastwood, B.Sc., Ph.D, Dip. Hom. Med., M.H.M.A., M.B.B.A

A research review and treatment programme for fibromyalgia is presented. Fibromylgia is caused by a breakdown of the proper functioning of the citric acid cycle in muscular tissue and a treatment programme based on improvement of the citric acid cycle in muscular tissue is required for treatment of this condition.The nutritional requirements for optimum muscle performance are outlined and other treatment options of value in alleviating the symptoms, whilst treatment of the nutritional requirements is being implemented, are discussed.

Papers submitted for the ICAK-U.S.A. Regional Meeting, Jan. 29 - Feb. 1, 1998, Orlando, FL - Division I

Informative

Applied Kinesiology Management of Acute Otitis Media and Serous Otitis Media:

Three Case Histories

Cecilia A. Duffy, D.C., DIBAK

Abstract

Two cases of acute otitis media and one case of serous otitis media that were successfully managed with applied kinesiology are presented.

Introduction

Fallon, in her recent study, has shown the effectiveness of chiropractic adjustment in treating children with otitis media. She states "Anecdotally, the chiropractic profession has claimed favorable clinical responses for otitis media and other upper respiratory infections for nearly 100 years." She notes however that there is little research to validate this clinical experience of chiropractors.[1]

Case histories of acute otitis media and serous otitis media are presented to show successful management with applied kinesiology diagnosis and treatment.

Acute otitis media presents with fever, earache, aural pressure, and diminished hearing. Physical findings include erythema, bulging, and decreased mobility of the tympanic membrane.[2, 3] Medical treatment is antibiotic therapy, although this has been called into question for its effectiveness.[4]

Serous otitis media may follow upper respiratory tract infection or barotrauma where the eustachian tube may become blocked and allow the build up of fluid in the middle ear. Patients present with hearing loss. Physical findings are limited and may reveal mild erythema of or air bubbles behind the tympanic membrane. Audiometry can diagnose any hearing loss. Medical treatment may include antibiotics, steroids, or tympanostomy tube placement.[2, 3]

Discussion

Case Number 1: Female age 11 presented with complaints of right earache, sinus drainage into throat, nausea, and shakiness of two days duration. Examination of the right ear revealed the ear canal to be erythematous and the tympanic membrane bulging with fluid in the middle ear and loss of the tympanic landmarks. There were no cervical lymph nodes palpable. Axillary temperature was mildly elevated at 98.8 degrees. She was treated one time for the following: diaphragm imbalance with reactivity of the left psoas muscle; fascial release of the right pectoralis minor muscle; reduction of subluxations at the right occiput and T4 and fixations at C7-first rib bilaterally. Nutritional supplementation used was a product with thymus extracts, vitamins A and C, calcium, and magnesium (Congaplex from Standard Process (SP)).[5] Dosage was one every waking hour. Due to the distance the patient lives from the clinic, contact was made by phone with the mother. Two days after the examination and treatment, the mother reported that the

patient's symptoms were much reduced and axillary temperature normal at 97.8 degrees. The supplement dosage was reduced to five per day. Follow-up one week later revealed the patient to be asymptomatic and afebrile, and she was advised to finish the supplement at a dosage of two per day.

Case Number 2: Male age 7 presented with complaints of left earache and sore throat of two days duration. Examination of the left ear revealed an erythematous tympanic membrane with fluid and bubbles noted on the inferior aspect. Throat and cervical lymph nodes were negative, and axillary temperature normal. He was treated two times in a four day period. On the first treatment, fascial release of the left sternocleidomastoid muscle and reduction of an atlas subluxation was performed. He was placed on a calcium with magnesium supplement at a dosage of two tid (CaMg Zyme from Biotics)[6] and pancreatic enzymes one tid (Multizyme from SP).[5] The patient's parents were experienced applied kinesiology patients and had begun supplementation on their own for the patient utilizing vitamin C and thymus extracts (Congaplex). At the time of the second treatment, the tympanic membrane appeared the same as initial presentation. The patient reported that the sore throat was gone, but the earache remained. The parents reported that temperature was normal. The right pectoralis minor muscle was fascially released, the neurolymphatic for the right sartorius was stimulated, and reduction of axis, T7, and Category II right posterior ilium subluxations was performed. Follow-up five days later revealed no fluid in the middle ear and mild erythema to the tympanic membrane. The patient reported no earache or sore throat.

Case Number 3: Male age 6 presented with the complaint of hearing loss of two months duration. The patient had already been to his pediatrician and had an audiologist perform a hearing test. According to the patient's mother, the audiologist stated that there was a 30% reduction in hearing in both ears. Diagnosis was serous otitis media. The pediatrician wanted the patient to be tested in six months and tympanostomy tubes placed if there was no change or worsening. The patient noted the hearing loss in that he needed to sit up front at school or else he could not hear what the teacher said. The parents of the patient are both school teachers and also noted the hearing loss. Examination of the ears was negative for fluid or bubbles behind the tympanic membrane. The patient was treated five times in four months. The following were diagnosed and corrected over the treatment period: right occiput, T7, T9, T4, T2, Category II posterior ilium, and manubrium subluxation reduction; right sartorius neurolymphatic and left infraspinatus neurolymphatic activity; fascial release of the right and left sternocleidomastoid muscles and right pectoralis minor muscle; tapping over the manubrium. Nutritional supplementation utilized was adrenal protomorphogen with vitamin C (Drenamin from SP), thymus extract (Thymex from SP), parotid extract (Parotid from SP), and proteolytic enzymes (Zymex II from SP).[5] The mother of the patient reported that within two days of the first treatment, the patient's ears started "popping" and he was beginning to notice improvement in his hearing. Over the four month treatment period, he continued to notice occasional popping sensations in the ears and the teacher and parents noted improvement in hearing. At the end of the four months, he could hear "normally" according to teacher and parents, for example, the patient could be in the back of the school room and hear when called on. Follow-up with the pediatrician and audiologist for repeat testing was strongly advised, but the parents declined.

Conclusion

In light of the over prescription of antibiotics, the side effects of antibiotic and steroid use, and the inherent invasiveness of tympanostomy tube placement, other conservative measures for treating otitis media, acute or serous, should be considered. Three case histories are presented here that show successful management with applied kinesiology. The reader is also referred to other studies showing effectiveness of chiropractic adjustment in otitis media.[1, 7, 8]

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Applied Kinesiology Management of Chronic Osgood-Schlatter Disease: A Case History

Cecilia A. Duffy, D.C., DIBAK

Abstract

A case history of chronic (20 months) Osgood-Schlatter disease in an 11 year old female that responded to applied kinesiology management is presented.

Introduction

Osgood-Schlatter's disease is a chondro-osseous failure and separation of the tibial tuberosity, secondary to chronic tensile stress from the patellar tendon of the tibial tuberosity apophysis. The condition is most common in adolescence. Patients complain of knee pain with activity that may continue when the activity is halted. Rest often improves the pain. Physical examination reveals an enlarged tibial tuberosity that is painful to palpation; pain reproduced with resistance to knee extension and with forced knee flexion. This can be visualized on plain radiographs as a separation of the tibial tuberosity from the tibia and irregularity of the epiphyseal line. It is generally caused by overuse of the extensor mechanism of the knee during sports activities.[1, 2, 3]

Discussion

An 11 year old female presented with left knee pain of 20 months duration. The pain was over the anterior knee with any physical activity and continued when the activity was halted. Prolonged rest periods would provide relief of the pain. The patient consulted a medical orthopedist who x-rayed the knee and diagnosed Osgood-Schlatter Disease. He recommended no course of treatment and to "just live with it."

Physical examination revealed: weight 143.5 pounds; height 59.75 inches; axillary temperature 98.6 degrees; saliva pH 6.0; blood pressure supine 100/50, seated 110/70, and standing 110/74; pulse seated 92, standing 100; respiration 20; lingual ascorbic acid time test was 8 seconds on the left and 5 seconds on the right; breath holding time 18 seconds; vital capacity at 67% for age; right hand and ear dominant with left eye and foot dominant; positive pupillary dilation to light stimulation; hematocrit 40; and first morning urinalysis revealed pH 6.0, SG 1.020, +1 blood, Koensberg test for sodium 30+, and Sulkowich test for calcium Grade 2.

Examination of the left knee revealed an enlarged tibial tuberosity that was painful to palpation. Range of motion of the knee was normal and non-pain producing. There was also bilateral pronation of the feet.

From the physical findings, the following were indicated: dietary management due to increased weight and acid salivary pH; adrenal function due to the positive Ragland effect (seated to standing systole did not

change), elevated urinary sodium and pupillary dilation; small intestine/quadricep function due to the imbalance of the lingual ascorbic acid time test from right to left sides and the enlarged tibial tuberosity; diaphragm function due to the diminished breath holding time and vital capacity; neurological disorganization due to the split dominancy; repeat urinalysis to determine if the blood was menstrual in origin; examination of the feet due to the bilateral pronation; and generalized examination of the pelvis and spine.

She was treated four times in a two month period and was rendered asymptomatic. The following structural corrections were performed over the two month treatment period: Category I pelvic lesion; fixations at the mid-thoracic and thoracolumbar junction; left medial quadricep weakness corrected by neurolymphatic activity and subluxation correction at T10; left sartorius weakness corrected by neurolymphatic activity and Category II; left peroneus tertius weakness corrected by reduction of L5 subluxation and lateral talus and posterior calcaneus subluxations; bilateral gastrocnemius muscle weakness corrected by reduction of lateral talus and posterior calcaneus subluxations bilaterally; fascial release of the left hamstring; reactivity of the left quadricep to the left hamstring, and reactivity of the left psoas to the diaphragm. Foot orthotics were prescribed to correct the bilateral pronation.

Neurological disorganization was examined for and not found to be a factor.

Repeat urinalysis revealed +1 blood, so a referral to the patient's pediatrician was made for further work-up.

Chemical corrections were confined to dietary management. She was instructed to remove all dairy products except butter[4] and all refined carbohydrates from the diet. She was compliant according to her parents.

There was a gradual reduction over the two months in the intensity and frequency of knee pain with activity and post-activity until complete resolution.

Conclusion

A case history of long standing Osgood-Schlatter's disease in an 11 year old female is successfully managed to an asymptomatic state utilizing applied kinesiology diagnostic methods.

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Critical Review

The Implications of Adaptation

Bill Conder, D.C.

Abstract

An attempt is made to describe chronic disease in applied kinesiologic and electromagnetic terms, and to understand it as the cumulative effect on the human body-mind of unresolved adaptation to stress or stressors. It is proposed that some nutritional supplements and herbs do not help the body heal but extend or shift the mode of unresolved adaptation. It is proposed that a substance that adaptively strengthens a weak muscle may represent the identity of the cause of the weak muscle, and may extend or perpetuate the unresolved adaptation. A protocol is presented in the interest of avoiding recommending to our patients adaptation-extenuating nutritional supplements.

Introduction

The human organism has the capacity to survive in a range of environments. Anthropologists tell us that the availability of water, food, and shelter were primary concerns that guided the primitive human organism's survival and determined where it would abide. In our present society, it seems that most people are mostly provided for by various economic and political configurations. At the extreme is a technological supersystem that makes it possible for one to live anywhere on the earth. But our huge adaptational reserve, though it makes it possible for us to have continuity of being, does not assure us health, growth, creativity, or consciousness.

Although a variety of food materials permits the survival of the human organism, there is considerable debate over what combination of macro-nutrients is optimum. This consideration of an optimum diet is very important if we want more than mere subsistence and the appeasement of appetite. We also must consider that proper diet promotes energy and growth in the context of a whole life.

Kinesiological imbalances manifest as, among other things, the effects of less than adequate consumption of air, water, and food, and protection from the elements; most of our musculoskeletal problems are adaptive reactions to metabolic imbalances. Add to these the effects of exposure to environmental toxins, artificial electromagnetic fields, and psychological stress and one easily can imagine the human organism lost in a jungle of unknown and dangerous elements that even our most vital and industrious ancestors may not have survived. Further, we must *imagine* our desperate condition, I suggest, because our adaptive survival mechanisms protect us from the full realization of it. Reduced sensory awareness is a component of adaptation.[1]

Pharmaceutical drugs are considered reasonably effective in the treatment of specific disease manifestations, but the side effects of these substances are known to cause symptoms or illness of their own. These unwanted side effects may be thought of as stressors, toxins, that inhibit the vitality and energy of the body-mind. Therefore, though the administering of these drugs appears to be remedying the problem, they may be causing problems elsewhere in the body-mind.

Non-conventional approaches to the correction of metabolic imbalances are promoted as having none of the side effects that we find commonly with pharmaceutical drugs. It is suggested here that this perception be re-evaluated, however, since many of the nutrients and herbs that we prescribe may appear to support whole body-mind function but really only reinforce the body-mind's adaptational pose and stress conditioning. Therefore, as in the case of diet, we must be reasonably certain that the nutritional supplements and herbs that we prescribe promote energy, growth, and wholeness.

Today people who have plenty of food and water and more than adequate protection from the elements have alarmingly high rates of chronic illness and degenerative disease. Clearly, adaptation and survival are not enough.

Discussion

I. Hans Selye, M.D., in his classic *The Stress of Life*, says "Adaptability can be well trained to serve a special purpose, but eventually it runs out; its amount is finite."[2] Here Selye discusses his observation that acquired adaptation to intense muscular exertion, resistance to low temperatures, exposure to toxic drugs, and other stressors is lost over a period of time. He says that we have a reserve of adaptation energy that can be consumed by local and general adaptation mechanisms that eventually may be used up and accelerate the aging process. He suggests that we may get used to several stressors, but eventually adaptation energy runs out, resistance breaks down, and exhaustion sets in. He defines adaptation energy as "that which is consumed during continued adaptive work" and that "it is something different from the caloric energy we receive from food," but he confesses that after almost 30 years of research he does not know what that energy is.[3]

Ray Peat, Ph.D., in his book *Generative Energy*, says "Vicious circles of physiology often stabilize an organism on a low energy level, which may involve disease or rapid aging."[4] I think that Dr. Peat in this sentence very succinctly explains a process that we, as doctors, often encounter yet rarely identify, and one to which we contribute unwittingly. I suggest that Peat's "vicious circles of physiology" are caused by unresolved adaptation that can be maintained addiction-like by many different kinds of substances, including food, nutritional supplements, and herbs. By recommending the consumption of these substances we may be stabilizing the patient "homeostatically" but contributing to the underlying unresolved adaptation and wasteful energy consumption. We are aware that pharmaceutical drugs have this kind of side effect and we have prided ourselves in the assumption that nutritional supplements and herbs do not have side effects. This latter assumption, however, is incorrect, though recovery from these side-effects may be less difficult and dangerous.

In summary, the human body-mind has adaptational reserves that can be depleted, resulting in the manifestation of vague symptoms of ill health and acceleration of the aging process. A component of the adaptation mechanism is the body's ability to become compromisingly stabilized at a lower energy until the adaptation can be resolved. This lower energy state is necessary to maintain the adaptational response which consumes energy. In an effort to promote health the doctor may prescribe nutritional or herbal substances that, in fact, reinforce the low energy conditioning. As long as the low energy conditioning is reinforced the adaptation will not be resolved, health will suffer, and chronic disease will manifest.

II. It has been demonstrated that a small battery or the positive pole of a magnet, when introduced to the human bio-electromagnetic field, will cause the weakening effect of an indicator muscle.[5] This weakening is an appropriate response. However, if this source of positive energy is allowed to remain in the human bio-field, the weakening response will stop manifesting and the indicator muscle will test strong again. This strengthening may be interpreted as an adaptational response to the introduction of a positive current in an otherwise normally negative field.

A positive current in an otherwise negative field is a brief description of Becker's current of injury.[6] For example, in non-limb regenerating vertebrates, a broken bone is demonstrated electromagnetically as the source of a positive current against the background of a negative field. The negative field is restored as the fracture heals. Here, the current of injury is an appropriate adaptive response to fracture, the healing of which resolves the adaptive positive current.

The introduction of a battery or magnetic south pole as a source of positive current in the human bio-field is analogous to a broken bone in creating a current of injury, except that in the case of the battery or magnet the body's adaptive response cannot be resolved. That is, the body-mind works to heal this positive current but, of course, it cannot. Energy is always being used to identify and heal the positive current without result, and the adaptation response goes on unresolved. The unresolved adaptational response to this positive current uses up adaptational energy.

Adaptational response and the "vicious circles of physiology" that remain unresolved due to intensity, quantity, or unrecognizability of the stressor(s), and the subsequent exhaustion of adaptational energy is the mode of chronic disease. Further, I propose that we can identify this unresolved adaptational response as the persistence of positive currents of injury in the DC analog system of the body's electromagnetic field.

The effect on whole human function of a small wrist-watch battery by itself may not be significantly burdensome. But, added to a variety of stressors to which the body already is trying to adapt, the net effect could be overwhelming. I suggest that with applied kinesiology techniques these energy drains can be identified and corrected, that this is what we do to a large extent, and that we can improve our ability to identify stressors that may exist in our treatment protocols.

Demonstration

We are aware that it is not enough to strengthen a weak muscle.[7] A muscle weakened by a local or specific stressor may strengthen after a period of time (as in the case of the battery or magnet) or may strengthen as a response to increased stressing locally or generally. In both cases, the weak to strong change is the result of the extenuation of the adaptational response, not its resolution.

The weak to strong change of a muscle response as a result of the introduction of an herb or vitamin supplement also may be the result of an extenuation of the unresolved adaptation by the herb or supplement. Obviously, even though the herb or supplement seems to be making things better, on deeper examination it is making things worse. With this knowledge, the conscientious doctor would not prescribe or recommend the supplement in question.

Following are four cases in point: Adrenal tissue, calcium, essential fatty acids, and milk thistle. Sketchy case histories are provided as a context for discussion.

1. Adrenal tissue has been prescribed by AK doctors when apparently indicated to combat the effects of adrenal fatigue. The most common indication is represented in the strengthening of a weak sartorius muscle upon the introduction of supplemental adrenal tissue to the patient's mouth. Other symptoms indicating need for adrenal tissue might include fatigue, a stressful lifestyle, Category II pelvis, active adrenal neurolymphatic reflex, and so on. The doctor identifies this problem as adrenal fatigue, introduces an adrenal tissue tablet to the patient's tongue, and finds on retesting the weak sartorius muscle that it now has strengthened.

In this case we need to be certain that the weak-to-strong response of the sartorius muscle relative to the introduction of adrenal tissue is not an indication that the muscle is responding to what one might call the identity of the problem (the "isonosode" in homeopathic vernacular); that is, too much adrenal stimulation. In other words, a muscle may respond by strengthening to that which is the cause of its weakening. Continued stimulation of over-stimulated adrenal function, by whatever pathway, will extenuate the adaptive response and bring about the manifestation of symptoms elsewhere.

2. We tend to think that calcium supplementation is benign under any circumstance and needed by everyone, especially our older patients. Recent research, however, suggests that calcium may be involved in the development of Alzheimer's disease[8] and that inefficient calcium metabolism contributes to cell dysfunction and death.[9]

A 60 year old female patient presents with osteoporosis, arthritis, and muscle cramping. She is participating in estrogen replacement therapy. She is difficult to muscle test but, suspecting the patient needs calcium, the doctor manages to strengthen a weak muscle with the introduction of calcium to the patient's mouth. Later, the doctor learns that the patient has experienced some relief with calcium supplementation.

If calcium is not removed from the cell after it performs its duty of triggering certain reactions it may be identified as toxic. Too much calcium and not enough magnesium inside of the cell causes metabolic confusion with the result that the body thinks it has too much calcium *and* not enough calcium. Now calcium is deposited in soft tissues because there is too much, and it is removed from bone because there is not enough. This "vicious circle," the symptoms of which we call arthritis and osteoporosis, is one in which many of us get caught as we age.[10] Supplemental calcium here predisposes the patient to an increasing number of problems even though he or she may appear to improve initially.

The constellation of effects that includes aluminum toxicity (inefficient oxidative respiration, generally speaking)[11] contributes to this kind of calcium metabolism imbalance. Therefore, in addition to determining the propriety of magnesium supplementation, our treatment of calcium metabolism imbalance must include support of mitochondrial function, stress reduction, better oxygen utilization, elimination of vegetable oils from the diet, and supplementation with biologically active B-complex vitamins and vitamin E, and the avoidance, at least temporarily, of calcium supplements.

3. Controversy over the essentiality of the essential fatty acids has been sparked by endocrinologist Raymond Peat, Ph.D. who says that the EFAs are not only not essential but they're toxic.[12] I have tested his hypothesis using a prepared indicator muscle (see below) and have never found flax seed oil, black currant seed oil, gamma linoleic acid, soy oil, or corn oil indicated for health. Shortly after I began testing the hypothesis, I discontinued the practice of placing drops of EFA on the tongue, as per conventional AK, and began placing whole capsules over the stomach alarm point. I soon gave up that

formality and found that placing an unopened bottle of the stuff within one foot of a patient's body usually would cause the weakening response of a prepared indicator muscle.

That the EFA invariably cause the weakening of a prepared indicator muscle points to its toxicity. I suggest that the proper use of these substances is in identifying metabolic imbalances. For example, the strengthening of a weak teres minor muscle with the introduction of flax seed oil to the stomach alarm point could indicate a cause or contributor of sub-clinical hypothyroidism such as impaired mitichondrial function due to oxidative stress; or the strengthening of a latissimus dorsi or quadriceps muscle might indicate insufficient protease enzymes. EFA could be used with an indicator muscle in two-pointing to a sore joint to indicate inflammation as the cause of or contributor to joint pain.

4. Established patient presents with fatigue, malaise, irritability, and muscle tightness between the shoulder blades. She reports having purchased milk thistle herb and consuming it daily for several weeks after having read a book by a famous doctor who recommends the herb for liver detoxification. The patient drinks one or two glasses of wine with dinner daily.

The doctor finds, among other things, weak right pectoralis major sternal which strengthens on placing milk thistle capsule over the patient's stomach alarm point. However, upon testing the patient's middle deltoid a strong-to-weak response is obtained with milk thistle at stomach alarm point. Further muscle-testing evaluation yields the following: Weakening response of the previously strong middle deltoid upon patient therapy-localization to the liver alarm point and the liver neurolymphatic point; and strengthening of middle deltoid with patient therapy-localization to liver alarm and neurolymphatic points with milk thistle herb at stomach alarm point.

Medicinal herbs are very potent substances and often have side effects on the body, contrary to (un)conventional wisdom. I have found that these substances can be effective in a variety of conditions but that their specificity of application is extremely important. In AK we have the tools for this specificity requirement.

Preparing an indicator muscle

Choose a muscle test with which you are comfortable and in whose outcome you have confidence. If it is weak, strengthen it using The Five Factors. If you cannot strengthen it use another muscle.

The strong indicator muscle should weaken (that is, demonstrate neurological inhibition for one muscle contraction) when presented with certain challenges such as

- approximation of its muscle spindle cells
- squeezing of its golgi tendon organs
- reverse-tracing (caudad to cephalad) of the spinal polarity, or the conception or governing vessel
- reverse tracing (distal to proximal) of the extremity in which the muscle inserts
- introduction of a small amount of a noxious substance, such as Drano, to the stomach alarm point
- the application of the south/positive pole of a magnet to the muscle
- the doctor glancing into the eyes of the patient

Challenge the muscle as suggested and test it. If the muscle does not weaken for one contraction in each instance it is malfunctioning, and the cause of the malfunction must be corrected before the muscle can be used as an indicator. (Obviously, maintaining the Drano-, magnet-, and eye-challenges will cause the weakening response of the muscle for more than one contraction. Note, however, that after a period of time, if the patient is not severely exhausted, the muscle will lose the appropriate weakening response and will adapt, eventually testing strong.)

The muscle to be used as an indicator must remain strong when confronted with certain challenges, such as:

- bilateral TL to Kidney 27 points
- tracing the spinal polarity, or governing and conception vessels, cephalad to caudad
- tracing proximal to distal the extremity in which the muscle inserts
- the application of the north/negative pole of a magnet to the muscle
- patient TL to vertebral nerve root that serves the muscle
- patient TL to the muscle's neurolymphatic point
- patient TL to the muscle's meridian alarm point

Procedure

A prepared indicator muscle is used for testing as a reference against the weak muscle in question. By definition, the prepared muscle is strong in the clear, weakens in response to the appropriate challenges, and remains strong in response to other specific challenges. Also, the prepared indicator muscle should weaken in response to the weakening response of the muscle in question. (For example, test the muscle in question for the weakening response then immediately test the indicator muscle. Now the indicator muscle should weaken for one contraction.)

An attempt could be made to strengthen the weak muscle in question by the IVF factors. However, doing so may disturb the body-mind's adaptational pose, the examination of which may be useful and instructive. Subluxation and meridian imbalance, like weak muscles, can be considered evidence of low-energy function adopted adaptationally. These patterns that emerge as a result of unresolved adaptation can be monitored to determine the efficacy of treatment.

Introduce the recommended herb or nutrient to the mouth or to the stomach alarm point of the patient and retest the weak muscle in question. If the muscle in question strengthens in response to the herb or nutrient, pause a few seconds then test the reference indicator muscle for its response to the herb or nutrient. A weakening of the prepared indicator muscle indicates the likelihood that, though it strengthened the weak muscle in question, the supplemental substance may not contribute to the general vitality of the body and may extenuate the body's adaptive response represented in the weak muscle in question.

If the reference muscle remains strong with the herb or nutrient in the mouth or on stomach alarm point, the possibility that the muscle now demonstrates "hypertonicity," or the inability to be autogenically inhibited, must be explored. With the herb or nutrient present in the mouth or stomach alarm point, retest the challenges suggested above which constitute the criteria for designating the reference indicator muscle. The indicator muscle should weaken or remain strong in response to the appropriate challenges with the nutrient or herb present. Except in the case of the eye challenge, which may now result in a strong indicator muscle test, any deviation from original indicator muscle test results suggests that the nutrient or herb may shift the mode of the adaptive response, permit continued low-energy, inefficient function, and contribute to the formation of a physiological vicious circle.

Conclusion

A supplemental nutrient or herb should: 1) strengthen its associated weak muscle, as per conventional AK protocol, 2) not cause the weakening of a prepared indicator muscle, and 3) not interfere with or overwhelm appropriate neurological and electromagnetic function, as can be demonstrated in the muscle test response. It is suggested here that exceptions to this generalized proposal result in contributing to the disease process or, at best, in not supporting the healing process and full expression of the patient's vitality.

If, in fact, a kind of "energy" is consumed in compromised function that leads to chronic disease, we should be able to expect more from health than the absence of disease, feeling good, and longevity. We might expect that this redirected energy, once used in adapting to stress, can be used creatively to solve our other problems.

The Hippocratic admonition "First, do no harm" is more relevant now than ever. Stress, adulterated food, and conventional health care threaten the ground and environment of life. Applied kinesiology contains the tools that doctors can use to provide specific and comprehensive treatment and guidance to patients without the backlash of side-effects. The employment of these tools in this way supports health and growth and allows us to emerge from the downward spiraling physiological vicious circles.

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The 25 Body Type System

Carolyn L. Mein, D.C., DIBAK

Abstract

Diet plays an important role in health,[1] but specific dietary guidelines are contradictory. There is a way to solve the dietary confusion of specifically which foods patients should eat to ideally support their systems and when to eat them. Muscle testing was used to determine a person's ideal diet and body type. It was found that a person's dominant gland, organ or system determined their body type and ideal diet, as well as personality profile, exercise requirements, health and disease tendencies.

Introduction

Some patients have such severe digestive weaknesses that eating a typical diet places excessive stress on their already debilitated systems. Inability to maintain ideal body weight, with either gain or loss,[2] is often the first indication that the body is having difficulty handling the stress it's under. Low energy, fatigue, increased irritability, lack of mental clarity and weight are common complaints of most patients.

It is well accepted that proper diet is important to health but diet books are contradictory. For example, Fit for Life[3] advocates a light breakfast of fruit, while Dr. Atkins[4] recommends protein and fat, restricting fruit. There is even disagreement regarding the ideal food ratios. Dr. Sears in the Zone[5] diet recommends a 40%-30%-30% ratio of carbohydrates to protein to fat, which is contrary to the recommended USDA diet of 70%-15%-15%. Obviously, not all people are the same and what is ideal for one is stressful for another.

The first diet book I saw that put the differences between people and their respective diets into perspective was Dr. Abravanel's Body Type Diet and Lifetime Nutritional Plan.[6] His premise was based was Dr. Bieler's[7] work who was able to distinguish between individuals with a dominant thyroid and a dominant adrenal gland on the basis of fairly obvious physical characteristics. I found Abravanel's basic concept accurate and quite useful. However, the diets were incomplete and required modification for sensitive individuals. As I began working with Abravanel's three types for men and four types for women, I discovered people who didn't fit the profiles and seemed to fall between types. This led me to discover additional types based on the dominance of other glands, as well as organs and systems.

Methods

Testing was done through muscle testing using the gastrointestinal-related muscles, generally the pectoralis major, clavicular division (PMC) by G-1, with food chewed and held in mouth. Food combinations were tested by having the patient chew a bite of a food combination such as peanut butter on white bread or a bite of pizza. Patients took a small quantity of food from each meal, placed the different foods in the separate compartments in an ice cube tray or egg carton, froze them and brought the samples in with them to

be tested on subsequent visits. To test the body's compatibility with foods eaten at different times, the patient was asked to think of that particular time of day to access their biological clock.[8]

Discovery of Additional Body Types

Case #1: A twelve-year-old girl whose weight gain pattern was like the Gonadal type, in the buttocks and thighs. When I muscle tested her body's response to the "Frequently" and "Rarely" foods of the Gonadal, the answers didn't match. I then tested her response to the Key Indicator Foods for each of the other known types, but nothing fit. Her general body structure and muscle mass were stronger and more dense than the Thyroid - more like the Adrenal, but not quite.

I had someone who had the general weight gain pattern of the Gonadal, with physical characteristics similar to the Adrenal. If I followed the rules of other systems, I had a person who fell between two types, or was a blend of the two. This was not an acceptable answer for me, since dietarily, a blended type is only sightly more useful that having no type because the complete diet still needed to be determined. In testing different foods, I found she tested strong for pizza, and for peanut butter on white bread. She also tested weak for fresh cherries, but strong for cherry pie. In wondering what organ would be able to handle what I felt was a poor diet, I came up with kidney. It also fit with her medical history as being her strongest organ.

Her physical characteristics included a distinct waist, with no weight gain across her lower back in the kidney region. She had a medium bone structure, dense solid musculature and a strong constitution. Given the foods that best supported her body, her physical characteristics, medical history, weight gain pattern, and location of her dominant energy focus, I concluded and verified that her kidneys were her dominant organ and consequently, her body type.

I tested the food profile I had compiled for her on other people and found the ones with similar physical characteristics responded well to the same foods. I continued to expand this list with others, including the time of day foods were best eaten and the best combinations, then I checked her response to the new information. This way I was able to determine what was true to type and what was unique to the individual.

This is the procedure I used to discover and develop the rest of the body types. Essentially, when I was presented with someone who didn't fit into any of my known types, I started checking his body's response to foods. This eventually lead me to the identification of a new type. During the discovery stage, the longest time span between new types was six months. The last of the 25 types was discovered six years ago in 1991.

Results

Case #2: A thirty-seven year old female who had battled a weight problem since her teens. She tried every diet that came along. When she was younger, vigorous exercise would help control her weight, but now it had little, if any, effect. When I saw her she weighed 173 pounds and carried it on a 5 foot 2 inch, medium frame. She complained of being tired and overweight. Her body type was Pancreas. After six months, she had lost 38 pounds. As soon as she began to follow the diet that was right for her body type, she lost weight easily and consistently. She immediately noticed better health, vitality and increased energy, which has remained consistent. It's been four years, and she has been able to easily keep the weight off.

Case #3: A fifty-two year old female who had spent years searching for the secrets to "perfect health." She tried programs that included diet, exercise, meditation, fasting, juicing, and colonics. With the Ayurvedic system,[9] she learned that she needed dense protein in her diet. Following the program was difficult for her, as it left too many questions unanswered. Unable to find the missing factors, she felt dissatisfied because she had once again failed in her quest to achieve good health. She was a Nervous System body type, meaning her dominant gland or system was her nervous system. In going over her diet, we discovered she had not been eating enough of the kinds of protein that her body required. She had been leaning toward vegetarianism and was not getting enough dense protein. After following her new body type diet for several weeks, she reported she was feeling better than ever. She has been following her diet for four years and has enjoyed consistent health and well-being.

Case #4: A forty-six year-old male who felt he was reasonably healthy. His dominant gland was Medulla, which while a physically strong body type is also sensitive, as evidenced by their reactivity to drugs, chemicals and environmental pollutants. Unique to the Medulla body type is a need to eat vegetables or drink vegetable juice prior to eating anything else for breakfast. As soon as he began eating a vegetable for his first bite of breakfast, his energy level increased, he didn't get hungry again until lunch, and his mental clarity improved. He has maintained and followed his diet for five years. He'll test it periodically, going off, only to come back to the Medulla body type diet that truly supports his body.

Case #5: A four-year-old girl with intestinal gas and bloating, frequent stomachaches, irritability, and allergies. In checking her diet I discovered she tested weak to pinto beans. Her mother routinely fixed Mexican food for dinner. The girl's body type was Heart, a type that has difficulty digesting pinto beans. Once she started following the Heart diet, of which the most significant change was the elimination of the pinto beans, her digestion cleared. She has maintained her diet for six years and kept her weight at her ideal level; she was showing overweight tendencies at age four.

Detailed descriptions of all 25 body types including three-view photos of eight people for each type at overweight, underweight and ideal weight, and a complete profile and diet for each type are found in the book, Different Bodies, Different Diets Men's or Women's Version.[10] The "Profile and Diet" for each type is available in a booklet form and may be personalized.

The easiest way to accurately determine body type is by muscle testing for the body's response to "Frequently" and "Rarely Foods" as illustrated on the following Key Indicator Foods by Type chart. "Frequently Foods" are ones that will test strong for that type, while "Rarely Foods" will test weak. A food that is enclosed in () may test moderate or spongy when a person's digestive system is weak.

Most types are stressed by eating fruit at certain meals. There are a few where this is also true of protein, dairy, grains, and even vegetables. These food groups are listed under the "Rarely Foods." A quick way to determine possible types is to check for when fruit can be handled. Simply, test a person for fruit for breakfast, lunch and dinner, making note of which meals tested weak. Refer to the "Fruit As A Rarely Food" and "Quick Reference Correlation" to select the types that test weak at these times. Having narrowed down your choices, test the "Frequently and Rarely Foods" for those types, selecting the type where the person tests strong for the "Frequently Foods" and weak for the "Rarely Foods." Now that you have identified their body type, you are ready to proceed with the individual "Profile & Diet."

Insert Chart

Insert Chart

Discussion

Following the diet that is appropriate for one's system or body type allows for the alleviation of diet related health problems allowing for greater health and vitality, increased energy and mental clarity, and normalization of weight. Patient compliance is good because the diet is easy to follow, it validates what they intuitively know, and fills in the missing gaps. Once patients know what it feels like to feel good, they have a reference point that motivates them to get back on their diet once they have strayed. Because the diet supports their well-being and teaches them proper dietary habits, they are able to maintain their weight loss.

There are 25 distinct body types. Each one has a unique diet that includes the frequency of which foods should be eaten, and when to eat the specific food groups of fruit, protein, grains, dairy, legumes, nuts, seeds and vegetables. Obviously you don't have the time, nor do most of your patients have the resources or patience to go through every food they eat, when they eat them and in what combination. There is a quick, simple way to determine the proper diet for each person. It can easily be done by simply determining their body type.

Body type is determined by a person's dominant gland, organ or system. It is present at birth and remains constant throughout one's entire life. The dominant gland determines physical characteristics, weight gain patterns, and which foods are required in greater quantities to supply the required nutrients. Type determination can easily be done by just muscle testing for specific differentiating foods unique to each type.

Once a person's body type has been determined, he can be given a "Profile and Diet" for his body type. Each profile includes specific food lists he is divided into two lists, one "Healthy" for when a person is at his ideal healthy state and "Sensitive" for when he is at the opposite extreme with severe digestive distress, depleted reserves, or are generally extremely sensitive to food. There are simple, practical menu suggestions with each combination tested for digestibility and taste preference for each type. Also included are health and disease tendencies, exercise requirements, and a personality profile containing characteristic traits, motivation, and what each type is like "At Worst" and "At Best."

Conclusion

Finally, there is a simple way to determine a person's ideal diet and lifetime eating plan. It consists of identifying his dominant gland. From here specific individual recommendations can be made.

Identifying a person's body type pinpoints his area of stress since it's the dominant gland that is the first to become exhausted. Each type also has its particular set of disease tendencies, which can serve as a check list in difficult cases. Exercise requirements and recommended type of exercise aids in patient self-care.

The personality or psychological profile with its characteristic traits, motivation, "at worst" and "at best" provides valuable insights into the psychological make-up of the patient. While helpful in your interaction with them, its real value is in the patient's understanding of themselves and those around them.

Clinical Implementation

1. Determine a person's body type by testing the Key Indicator Foods.
2. Give the patient his specific "Body Type Profile & Diet" booklet.
3. You may wish to make individual recommendations based on the sensitivity of patient's digestive system, or on number of calories, and percentage of fats and protein following your testing.
4. Common dietary problems are addressed in the "Microwaves & Dietary Myths" booklet, which can be reviewed with the patient.
5. For patients who want a total working knowledge of how to change their diet to be completely supportive, have them keep track of what they have eaten and test them for their body's compatibility with each meal.

As you are becoming familiar with the individual body types, it's helpful to involve the patient in the typing process. Have them look at the "Body Type Essences" and "Men's or Women's Photos" booklets and narrow down their choices. Many times they will have determined their type and only need verification, which you will do by testing them for the Key Indicator Foods for that type.

Other patients will have narrowed their choices down to two or three types. Simply test the "Frequently" and "Rarely Foods" on these types to identify their body type.

If you are testing children or haven't a clue as to a person's type, test them for the time of day to eat fruit and refer to the "Fruit as a Rarely Food" section on the Key Indicator Foods by Type chart. Having narrowed your choices, test the foods for these types, selecting the type that correlates with the foods.

For a video to introduce "The 25 Body Type System" and provide basic information, a CD-ROM, detailed questionnaires, the books, Different Bodies, Different Diets Men's and Women's Versions, "Body Type Essences," "Men's or Women's Photos," and individual body type "Profile & Diet" booklets, or additional information contact: Vision Ware Press, (619) 756-3704 or FAX (619) 756-6933 or 1 (888) 2MY TYPE.

Summary of Procedures

1. Look at the patient for any obvious physical identifying characteristics of a particular body type. If a specific type or types are suspected, you may proceed directly with step 4.

2. Locate a strong gastrointestinal-related indicator muscle. Find a fruit that tests strong when chewed and held in mouth, dried fruit, i.e. dates, raisins, cherries, are good primarily choices. Note the tested response: strong, weak, or moderate "spongy" for the fruits tested paying particular attention to weak responses, i.e. raisins and dates are both "Rarely Foods" for the Thyroid body type, cherries are "Rarely Food" for the Stomach, and all dried fruit is "Rarely" for the Pineal. If these indications are found and physical characteristics indicate the likelihood of the patient being that body type, proceed directly to testing other foods on the "Frequently" and "Rarely Foods" for the indicated type. (See step 4.)

3. Have the patient hold the fruit (for which he tested strong) in his mouth and think about eating that fruit at breakfast, then test and note response. Continue this procedure for lunch and dinner. Take note of the patient's weak responses and refer to the "Quick Reference Correlation" portion of the chart, "Key Indicator Foods by Type" and locate the types that fall in that category. For example, if the

patient tested weak for fruit for both breakfast and lunch, the types listed are Brain and Thymus, so the patient is one of these two types. Parenthesis ( ) around a type means the patient will only test weak if his particularly "sensitive," usually with blood sugar sensitivities or digestive weaknesses. If the patient is "healthy" his body type is Thymus. For conformation, proceed with the next step.

4. Go to the body type or types listed on the chart, "Key Indicator Foods by Type"; to continue with the above example, it would be Thymus. Select a food from the "Frequently Foods" or "Rarely Foods", i.e. pine nuts, and test as indicated above. Pay particular attention to strong and weak responses, test enough foods to establish a pattern of strong responses on "Frequently Foods" and weak responses on "Rarely Foods." If the responses don't match, continue on to the next type on your list repeating this step until you have found the foods that match the body type pattern.

It is actually the body's physiological response to the components found in specific foods that determines body type. Physical characteristics and psychological traits are expressions of the dominant gland and depending on the degree of secondary gland influence will be more or less evident.

On rare occasions, a patient will have depleted his dominant gland so he will operate off his secondary gland, causing him to respond to the food pattern for the secondary gland. When this happens, he needs to follow the diet for the secondary gland until his system is rebuilt, at which time he will respond to the food pattern of his actual dominant gland and can then shift to the diet appropriate for his body type.

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Applied Kinesiological Implementation of Heart Focused Techniques Based on Heartmath Principles

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Abstract

Autonomic function may be assessed and affected in a positive manner by both applied kinesiology (AK) as functional neurological assessment (FNA) and HeartMath techniques. Heart focused mental activity based on principles of HeartMath are correlated with AK/FNA findings in a manner which guides the practitioner in the synthesis of the two approaches.

Introduction

In June, 1997, Jerry Kaiser, Director of Health Services of the Institute of HeartMath (IHM) in Boulder Creek, California, gave a presentation on HeartMath at the ICAK-U.S.A. meeting in San Diego. Since that time, I have been applying principles of applied kinesiology (AK) and functional neurological assessment (FNA) to principles and concepts learned from that lecture as well as from other HeartMath materials. The clinical ramifications of applying these principles in the context of an AK practice are more significant than any other single tool I have ever added to my practice, even more significant than injury recall technique (IRT).[1] This paper is a summary of what I have learned.

HeartMath techniques include Freeze-Frame, Heart Lock-In, and Cut-Thru as stress reduction techniques.[2] HeartMath procedures involve directing or focusing positive mental energies to the heart, anatomically speaking. FNA using muscle testing may be used to assess the effects of heart focused procedures on individual patients. The procedures discussed in this paper are based on principles and concepts that have been researched and published by the IHM. For a complete and thorough presentation of HeartMath's trademarked procedures, see the end of this paper for how to contact IHM as well as a bibliography.

Discussion

The feeling of appreciation is a particularly good example of a positive emotion that is used in HeartMath procedures. The following procedure uses AK/FNA to assess heart focused appreciation. Find a weak muscle. Have the patient think of the feeling of appreciation, for example, toward another person or a piece of music or art. Retest the muscle. Nothing changes. Have the patient think about the location of his or her heart. Nothing changes.

Now have the patient send the feeling of appreciation to the heart. I tell the patient to feel the appreciation in the chest, in the area of the heart. Sometimes I tell patients to "send" the feeling of appreciation from the head to the heart. I ask the patient to acknowledge when the feeling of appreciation is being felt in the chest or heart. When this is accomplished, which usually only takes a couple seconds (some patients need to be coached a little longer,) then I retest the weak muscle. There is not only a strengthening response, this procedure most often creates a huge increase in strength, almost as if you could not overpower the

muscle if you tried! Most patients also are aware of the tremendous strengthening response. This is the first screening test I use to determine if heart focused techniques will be of value to the patient.

Patients are then instructed that this is something that they can do on their own; that this is one of two or three tools that I will teach them using their hearts as amplifiers to help all of the rest of their bodies' organs. I train them to use the feeling of appreciation in their hearts whenever they need an immediate reduction in the stress of the moment, and that this technique acts like a stress arrestor or a stress buster. When stress is accumulating during the day, the patient should withdraw from the stress of the moment and mentally move away from the stress and focus on a positive emotion around the heart. If the patient can find five minutes to do this, the effects will last six hours or longer. If only twenty or thirty seconds are available, it will still help.

I explain that these principles are the reason our language contains so many words and expressions with the word "heart" in them, such as heartfelt gratitude or heartfelt sympathy, or taking it to heart, or change of heart, or heart broken and so on. If they are interested, I give them the one page overview I wrote called Heart Focused Principles Summary. They are told about how to contact IHM. (See the end of this paper.)

I have only seen four people whose weak muscles did not strengthen when they directed appreciation to their hearts. One was an eight year old girl who had a good life and really did not sense any stress in her life. The second was a patient with chronic atrial fibrillation. This patient did not strengthen when he sent appreciation to the heart, but in fact, the right subscapularis weakened. The third patient has severe psychological reversal (as discussed by Roger Callahan[3] and Jim Durlacher[4]) and dramatically weakened (all muscles) on the feeling of heartfelt appreciation. The fourth patient also had similar psychological involvement. AK corrections were made on the latter three patients so that the heartfelt appreciation strengthened thereafter.

Screening for the Need for Heart Focused Procedures

There is another AK/FNA screening technique for the need to use heart focused principles. Have the patient become aware of the location of the heart in the chest. There are no muscle testing response changes. While the patient still maintains the awareness of the heart, therapy localize (TL) to the heart meridian alarm point (AP), which is slightly below the tip of the xiphoid process. The combination of heart awareness and heart AP TL will usually cause a weak muscle to strengthen and a strong muscle to weaken if there is a need for further heart focused techniques or variations of these techniques as discussed below.

The traditional AK indicators for emotional stress, that is, TL to the emotional neurovascular reflexes (NVs) on the forehead, have only a coincidental relationship to the AK indicators for heart focused or heart directed procedures. Occasionally both indicators are present together. That is, occasionally an emotional stressor may require established AK treatment (including Scott Walker's NET, Callahan's and Durlacher's phobia techniques, or other approaches including those which are taught by this author) as well as heart focused approaches to include the procedures discussed below. But the indication to use both established AK approaches and heart focused procedures appears to be purely coincidental. The two approaches are significantly different and one does not duplicate nor replace the other.

There are several variations on the AK/FNA screening test for heart focused techniques. While thinking of the location of the heart, some patients will not show TL to the heart AP but rather to the small intestine

neurolymphatic reflex (NL) for the quadriceps. This NL is located along the lower margins of the costal cartilages extending laterally from the xiphoid process, bilaterally. These patients will also show TL to the small intestine AP, but this seems to be less important than the TL of the quadriceps NL.

When the heart AP TLs with the patient thinking of the heart location, perform heart focused techniques as the next order of business. When a patient demonstrates positive TL to the small intestine circuits, and not the heart AP, it is extremely important to either balance autonomic activity and/or use the techniques described below prior to employing heart focused techniques. When neither the heart AP nor the small intestine circuits TL when the patient thinks of the heart location, then the heart focused techniques may not be necessary at that moment.

Blending Negative Emotion into Positive Emotion

When negative emotions are affecting the autonomic nervous system and reflecting in the heart, we may use a heart focused technique to neutralize the effects of the negative emotions on the body. This technique has the two steps. First, the patient sends and feels appreciation in the heart. Then, the patient sends a negative emotion to the heart in such a way as to blend the negative emotion into the appreciation, like in a blender, so that the appreciation absorbs, dissolves, or completely overtakes the negative emotion. This may be done quickly like plopping an egg into a batter, or the negative emotion may be trickled in. The patient sets the pace for this blending and continues until the patient senses that the negative emotion in the heart is completely blended into, absorbed by, and overtaken by the feeling of appreciation, and nothing is left in the heart but the feeling of appreciation.

The AK indication to perform this blending technique (and related techniques) is when the heart AP TLs (to strengthen or weaken) as the patient thinks about the location of the heart. When this is positive, have the patient think about a negative emotion. This should be an emotion rather than an incident (which is what we usually see in the emotional NV approaches), although the emotion may be related to a specific incident. If simply thinking about the negative emotion causes a muscle weakening response, then perform techniques related to the emotional NVs first.

If recalling the emotion does not elicit weakness, have the patient feel the emotion in the heart, or tell him or her to send the emotion to the heart or chest area. If this induces a weakness, then you must proceed. See if the weakness is negated by TL to the heart AP. The indication to perform the blending technique is when a heartfelt negative emotion weakens and the weakness is negated by TL to the heart AP. DO NOT USE THIS TECHNIQUE IF THE SMALL INTESTINE NLs TL INSTEAD OF THE HEART AP NOR IN THE RARE INSTANCE THAT HEARTFELT APPRECIATION WEAKENS. There have been several patients who have experienced huge emotional blow-ups in the office under these circumstances. Use the techniques described below in these cases.

(Occasionally TL to neither heart nor small intestine circuits will negate the weakness induced by negative emotion to the heart. It is appropriate to perform blending technique and/or the approaches described below in these patients also.)

Spinal Subluxations Which Block Heart Focused Effects

Immediately after proper completion of the blending technique, the negative emotion may be sent or felt in the heart with no weakening effect. If weakness still occurs, it suggests one of two things: 1) that the patient did not completely blend the negative emotion with the positive emotion, or 2) that there is a spinal problem associated with the negative emotion which must be corrected. The latter is often encountered, in the author's experience up to about 30 percent of the time.

When there is a spinal involvement, the blending technique does not negate muscle testing findings of the negative emotion. This does not mean that the blending technique is useless to this patient, but rather that its effects are being blocked or attenuated by the structural problem.

To identify a spinal involvement, simply have the patient hold the sense of the negative emotion in the heart while rubbing the skin over spinal segments from occiput to sacrum. (The patient may also TL the entire spine, but this is often awkward.) Observe if rubbing over any segment negates the heartfelt negative emotion induced weakness. (I usually have the patient sitting for this procedure.) If rubbing a segment negates the weakness, challenge and adjust that segment while the patient maintains the heartfelt negative emotion. After correction of the subluxation, the weakening effect is no longer present and seems to remain corrected on following office visits. The patient may then use the blending technique on his or her own.

When the AK/FNA indicators for heart focused technqiues as described above (heart AP TL while patient focuses on the heart location) are present, it appears that about 30% of this author's patients require spinal correction to negate the indicator. The other approximately 70% are able to make the corrections themselves via the blending technique.

Autonomic – Small Intestine Involvement

If the heartfelt negative emotion is negated by the small intestine/quadriceps NLs, then neither blending nor spinal correction techniques should be tried. Negative outcomes experienced by several patients have led to this conclusion. Rather, if TL to the quadriceps NLs negates the heartfelt negative emotion, first correct autonomic imbalances. Make sure to include clearing the small intestine circuits using Visceral Challenge Technique (VCT) which is the technique of choice in these cases. The essence of VCT is as follows.

VCT is indicated when placing potential offenders on the tongue (such as bad fats, carbohydrates, or allergens, etc.) causes NLs to TL. Correction is using IRT with TL to the NL and the offender on the tongue.

Following VCT correction, if TL to the small intestine NLs continues to negate the heartfelt negative emotion, perform IRT to the quadriceps NLs bilaterally while the patient maintains the heartfelt negative emotion and the TL. This clears the weakening effect of the negative emotion and has been associated with several breakthrough clinical responses in pain and range of motion in chronic patients.

Heart Focusing and Visualization Techniques

Another observation is related to visualization for pain control, range of motion, and other physiological changes. These techniques are usually used at the end of a treatment session after all other essential structural, chemical, and mental factors have been treated.

When patients have a localized area of pain, a time honored visualization technique is to have the patient relate the pain to a color and a shape. The patient is then instructed to mentally change the color and shape of the pain. This sometimes results in a decrease in the pain. Using this or other visualization techniques can be greatly enhanced by having the patient direct the visualization through the heart.

For example, a patient describes a pain in the foot as red and pointy, like a star. Tell the patient to mentally make the red star into a blue round ball. Note any changes. Then send the same image of the red star changing to the blue ball through the heart to the foot. This amplifies the effect noticeably in many patients.

Similarly, in patients with limited ranges of motion, ask the patient to perform an impaired range of motion. Then have the patient visualize a normal range of motion and perform the movement again. Note any changes. Finally, have the patient once again visualize the normal range of motion, but this time have the patient send the message to the problem area through the heart. Or another method is to have the patient see the normal range of motion in the heart. Then recheck the motion and compare.

Several dramatic changes have been observed in low back flexion, knee flexion, and shoulder elevation in chronic patients with long term limitations simply by adding the above techniques. It appears that, for maximum effectiveness, the pathways through the heart should be cleared by the blending technique and related techniques prior to the visualization through the heart.

Healing, The Healer and Heart Focused Efforts

Many caregivers intuitively amplify their efforts by using versions of heart focused or heart directed techniques. Many do not. It appears that both the level of care as well as the caregiver's own health may be benefited by employing heart focused concepts.

Two lay people who participated in healing circles were treated on successive days. These two women did not know each other, but each had been praying and meditating with their respective groups for a number of years and for a number of different sick individuals.

The first woman was asked to put herself in the mental mode of the healing circle and a weak muscle was tested. Nothing changed. She was then asked to experience the same healing mode, but to send the healing energy through her heart. The weak muscle immediately strengthened, and it was extremely strong.

The next day, the second woman was asked to put herself in the healing circle mode. A weak muscle immediately strengthened. I said out loud, "That's funny. Usually you must send the message through the heart for the muscle to strengthen like that."

"Oh," She replied, "we are trained in our healing circle to send our healing energy to the sick person through our hearts. I do that instinctively now."

Both patients later reported that they had shared the information about heart focused activity with their healing circles, and that all who participated had experienced heightened awareness of healing energy when all in the group consciously focused their healing energies through their hearts.

Since that experience, it has been noted that caregivers including lay people, physicians and anyone in between, will almost always show dramatic strengthening responses of weak muscles when they send their

attempts to promote healing through their hearts. It appears that not only might the patient benefit from the caregiver amplifying his or her healing efforts through the heart, the caregiver himself or herself may be empowered by the experience.

Conclusions

The application of heart focused and heart directed techniques, based on principles and concepts of HeartMath, guided by AK/FNA testing, allows the doctor to dramatically impact the patient's physiology in a most all-encompassing manner. HeartMath research has demonstrated changes in heart function, respiration, adrenal function, and immune function. AK/FNA has led us to observe that heart focused techniques have positive impact throughout the nervous system including changes in neuromuscular function, autonomic function, and pain perception.

How to Contact the Institute of Heartmath

The IHM has books, tapes, and classes available on many subjects and they may be reached at (408) 338-8700. Their Internet web site is www.heartmath.com. Jerry Kaiser, Director of Health Services may be contacted via his e-mail address: jkaiser@heartmath.org. The publisher of their materials is Planetary Publications, 14700 West Park Avenue, Boulder Creek, California 95006, (800) 372-3100.

Summary of Procedures

1. Weak muscle strengthens on feeling appreciation in the heart.

2. Weak muscle strengthens and/or strong muscle weakens on thinking about the location of the heart and TLing the heart AP.

3. Patient holding negative emotion in the heart causes general muscle weakening.
   a) Weakness may or may not be negated by TL to heart AP
      1) Perform the blending technique.
      2) If blending does not negate the weakness, rub spine to see if any segment negates weakness. If so, adjust.

   b) Weakness negated by TL to quadriceps NL.
      1) Use VCT to correct small intestine problems using challenge substances (bad fats, carbohydrates, or allergens, etc.) and IRT.
      2) Treat heartfelt negative emotion with IRT to quadriceps NLs.

4. In pain and impaired motion, have patient perform visualization techniques feeling or seeing the visualization in the heart.

5. Teach patients heart focused appreciation and heart focused blending techniques to do on their own. Caution them that if they have difficulty performing them, to stop attempting the techniques and tell you about it on the next office visit. If the patient has a small intestine/psychological reversal problem, postponing the techniques will keep them from aggravating the problem and you can easily fix it on the next office visit.

6. Teach caregivers to send their caring efforts through their hearts.

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