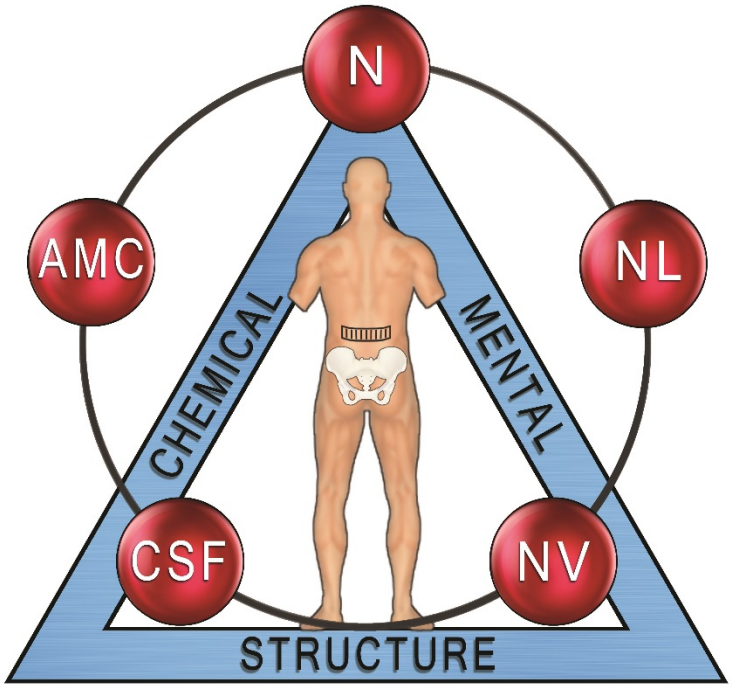

INTERNATIONAL COLLEGE OF APPLIED KINESIOLOGY U.S.A.

Experimental Observations of Members of the ICAK

Volume 1, 2023-2024

Seventy-Fourth Collection of the Proceedings of the Annual Meeting

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

Experimental Observations of the Members of the ICAK

Volume I, 2023-2024

Proceedings of the Annual Meeting

Professional Applied Kinesiology™

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

Experimental Observations of the Members of the ICAK

Volume I, 2023-2024

Proceedings of the Annual Meeting

Presented:

July 28 – 30, 2023
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Publications Staff:

Angela Capra, Executive Director
Katy Stuckey, Membership & Publications Manager

Message from the Chairman

Dr. Richard Belli, D.C., D.A.C.N.B., F.A.B.N.N.

As we continue to move past the pandemic it has become more important than ever for members of the International College of Applied Kinesiology®-U.S.A. to share their insights, outcomes, case histories and research through the papers presented in these Proceedings.

This year we continue our in-person Homecoming. We welcome the opportunity to be together and share what we have learned over the last year. As we all know, there is as much learned in the breakrooms and hallways as there is in the conference.

It continues to be our hope that the Homecoming, along with these published works, document the first steps toward furthering the application of applied kinesiology in diagnosis and clinical skills ultimately becoming the part of the accepted body of knowledge we embrace. We invite and encourage all members to participate in contributing to and expanding upon the basis of neuro-functional muscle testing we call applied kinesiology. Your clinic is your laboratory, your patients the source of unlimited observation and input, and whether a case or double-blind study, they all add to the knowledge base.

We are pleased to have the opportunity share with the members of ICAK-U.S.A. the advances and successes of this year. It is truly a gathering of academic eagles and clinical genius. Thank you and congratulations to all of you who have taken the time to contribute.

A special thanks to Drs. John Podlaski, Dylan Miller, Cari Jacobson, Noah Lebowitz, Nicholai Sorochinsky. and Corey Osborne for your time and knowledge in helping to produce this publication.

With great excitement we look forward to seeing you and sharing at this year's ICAK-USA Homecoming.

Introduction

This seventy-third collection of papers from members of the International College of Applied Kinesiology®-U.S.A. contains fourteen original papers written by eight authors. 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 *Proceedings* Review Team 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.

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 dialogue, creative thinking and critical review among its members; thus, review in this instance is not blinded. These papers are distributed only to the members of the ICAK-U.S.A. for general comment and 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 more in-depth study and scientific investigations, as well as spawn new areas of research. Such is to inspire 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) and the editor(s). The ICAK-U.S.A. disclaims any responsibility or liability for such material.

The current ICAK-U.S.A. Status Statement appears in *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. Whenever possible, all papers should be supported by statistical analyses, literary references, and/or any other data supporting the procedure.

Manuscripts are accepted by the ICAK-U.S.A. for publication with the understanding that they represent original unpublished work. Delivery of a manuscript to the ICAK-U.S.A. Central Office does not imply it will be published in the Proceedings. Manuscripts are reviewed by the Proceedings Review Committee and authors will be notified in a timely manner of their manuscripts acceptance or rejection. The author may appeal any paper rejected to a separate committee composed of members of the Publications and Research Advisory Committees. The decision of this committee on publishing the paper will be final.

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.

All manuscripts (meaning any material submitted for consideration to publish) must be accompanied by a properly completed *RELEASE FORM*, signed by all authors and by any employer if the submission represents a "work for hire." Upon such submission, it is to be understood by all authors that no further dissemination of any part of the material contained in the manuscript is permitted, in any manner, without prior approval from the editor; nonobservance of this copyright agreement may result in the cancellation of the ICAK-U.S.A.'s consideration to publish.

Continuing call for papers includes:

Research studies (Investigations)—reports of new research findings pertaining to the enhancement of factors of health, causal aspects of disease, and the establishment of clinical efficacies of related diagnostic and therapeutic procedures.

Hypotheses—projections from previous observations that may establish a solid basis for further in-depth investigations.

Literature reviews—critical assessments of current knowledge of a particular subject of interest, with emphasis on better correlation, the identification of ambiguities, and the delineation of areas that may constitute hypotheses for further study. Meta-analyses are included here.

Clinical procedures—succinct, informative, didactic papers on diagnostic and therapeutic procedures, based heavily on authoritative current knowledge.

Case reports—accounts of the diagnosis and treatment of unusual, difficult, or otherwise interesting cases that may have independent educational value or may contribute to better standardization of care for a particular health problem when correlated with similar reports of others.

Case reviews—a retrospective comparative assessment of the diagnosis and treatment of several cases of a similar condition i.e., the comparative evaluation of two or more case reports.

Technical reports—the reporting and evaluation of new or improved equipment or procedures, or the critical evaluation of old equipment or procedures that have not previously been critically evaluated.

Commentary—editorial-like, more in-depth essays on matters relating to the clinical, professional, educational, and/or politicolegal aspects of health care principles and practice.

Critical review (Letters to the editor)—communications that are directed specifically to the editor that critically assess some aspect of the ICAK, particularly as such assessment may add to, clarify, or point up a deficiency in a recently published paper; authors are afforded the privilege of a counter-response.

The following editorial policies will apply:

Informed consent—Manuscripts that report the results of experimental investigations with human subjects must include a statement that informed consent was obtained, in writing, from the subject or legal guardian, after the procedure(s) had been fully

explained with documentation that such procedures have been fully understood. Photographs or artistic likenesses of subjects are publishable only with their written consent or the consent of a legal guardian; the signed consent form, specifying any special conditions (e.g. eyes blocked off), must accompany manuscript.

Patient anonymity—Ethical and legal considerations require careful attention to the protection of the patient's anonymity in case reports and elsewhere. Identifying information such as names, initials, actual case numbers, and specific dates must be avoided; other identifying information about a patient's personal history and characteristics should be disguised.

Authorship—all authors of papers submitted to ICAK-U.S.A. must have an intellectual stake in the material presented for publication. All must be willing to answer for the content of the work. Authors should be willing to certify participation in the work, vouch for its validity, acknowledge reviewing and approving the final version of the paper, acknowledge that the work has not been previously published elsewhere, and be able to produce raw data if requested.

Conflict of interest—in recognition that it may at times be difficult to judge material from authors where proprietary interests are concerned, authors should be prepared to answer requests from the editor regarding potential conflicts of interest. The editor makes the final determination concerning the extent of information released to the public.

Acknowledgments—Illustrations from other publications must be submitted with written approval from the publisher (and author if required) and must be appropriately acknowledged in the manuscript.

Author responsibility—Manuscripts accepted for publication are subject to such editorial modification and revision as may be necessary to ensure clarity, conciseness, correct usage, and conformance to approved style. However, insofar as authors are responsible for all information contained in their published work, they will be consulted if substantive changes are required and will have further opportunity to make any necessary corrections on the proofs.

Manuscript Preparation

Authors are requested to submit final manuscripts via email to icak@dci-kansascity.com. Each manuscript file should be titled with the author’s last name and the manuscript tile. All manuscripts must be submitted in Microsoft Word.

The ICAK-U.S.A. does not assume responsibility for errors in conversion of customized software, newly released software and special characters. Mathematics and tabular material will be processed in the traditional manner.

Approved Manuscript Style

Manuscripts submitted for consideration to publish in *The Proceedings of the ICAK-U.S.A.* must be compiled in accordance with the following instructions, and manuscripts not so compiled are subject to return to the author for revision.

Summary of Requirements

Type the manuscript double-spaced, including title page, abstract and key words, text, acknowledgments, references, tables, and figure legends. (Note: footnotes should be avoided by including any necessary explanatory information within the text in parentheses). Do not break any words (hyphenate) at the end of any line; move to the next line if entire word does not fit.

Each manuscript component should begin on a new page, in the following sequence:

- Title page (page 1)
- Abstract and key word page (page 2)
- Text pages (starting on page 3)
- Acknowledgment page
- Reference page(s)
- Table page(s)
- Legends for illustrations pages(s).

Detailed Preparation Procedure

Begin each of the following sections on separate pages: title (including author name[s], address and phone number of principal author, etc), abstract and key words, text, acknowledgments, references, individual tables, and figure legends.

Units of measurement—In most countries the International System of Units (SI) is standard, or is becoming so, and bioscientific journals in general are in the process of requiring the reporting of data in these metric units. However, insofar as this practice is not yet universal, particularly in the United States, it is permissible for the time being to report data in the units in which calculations were originally made, followed by the opposite unit equivalents in parentheses; i.e., English units (SI units) or SI units (English units). Nevertheless, researchers and authors considering submission of manuscripts to

the ICAK-U.S.A. should begin to adopt SI as their primary system of measurement as quickly as it is feasible.

Abbreviations and symbols—Use only standard abbreviations for units of measurement, statistical terms, biological references, journal names, etc. Avoid abbreviations in titles and abstracts. The full term for which an abbreviation stands should precede its first use in the manuscript unless it is a standard unit of measurement.

Title Page

The title page should carry (1) the title of the article, which should be concise but informative; (2) a short footline of no more than 40 characters (count letters and spaces) placed at the foot of the title page and identified; (3) first name, middle initial, and last name of each author, with highest academic degree(s); (4) names of department(s) and institution(s) to which work should be attributed; (5) disclaimers, if any; (6) name, address, phone, and fax number of author responsible for correspondence, proofreading of galleys, and reprint requests (usually principal author); (7) the source(s) of support in the form of grants, equipment, drugs, or all of these.

Abstract and Key Word Page

The second page should carry an abstract of no more than 150 words, 250 if using a structured abstract. The structured abstract is now required for all original data reports, reviews of the literature and case reports; prose abstracts will be accepted for use in only certain original papers not reporting data (i.e., position papers, historical treatises).

Please visit the following link online for helpful information on structured abstracts: www.soto-usa.org/Newsletter/DCInternetEdition/dc_internet_ed_vol_3_no3Abstrak/StructuredAbstracts.htm.

Below the abstract, provide, and identify as such, 3 to 10 key indexing terms or short phrases that will assist indexers in cross-indexing your article and that may be published with the abstract. Use terms from the Index Medicus Medical Subject Headings (MeSH) as much as possible.

Text Pages

The text of observational and experimental articles is usually—but not necessarily—divided into sections with the headings Introduction, Materials and Methods, Results, Discussion, and Conclusions. Long articles may need subheadings within some sections to clarify or break up content. Other types of articles such as case reports, reviews, editorials, and commentaries may need other formats.

Please visit the following link online for helpful information on writing patient case reports:

www.soto-usa.org/Newsletter/DCInternetEdition/dc_internet_ed_vol_3_no3Abstrak/Green%20Johnson%20Case%20Reports.pdf

Reference: Green BN, Johnson CD, Writing Patient Case Reports for Peer-Reviewed Journals: Secrets of the Trade Journal of Sports Chiropractic & Rehabilitation. 2000 Sep; 14(3): 51-9.

Introduction

Clearly state the purpose of the article. Summarize the rationale for the study or observation. Give only strictly pertinent references and do not review the subject extensively; the introduction should serve only to introduce what was done, why it was done and what could be done to address shortcomings or gaps in what we have learned from what was done.

Materials and Methods

Describe your selection of the observational or experimental subjects (patients or experimental animals, including controls) clearly. Identify the methods, apparatus (manufacturer's name and address in parentheses) and procedures in sufficient detail to allow others to reproduce the work for comparison of results. Give references to establish methods, provide references and brief descriptions for methods that have been published but may not be well known, describe new or substantially modified methods, give reasons for using them and evaluate their limitations.

When reporting experiments on or with human subjects, indicate whether the procedures used were in accordance with the ethical standards of the Committee on Human Experimentation of the institution in which the research was conducted and/or were done in accordance with the Helsinki Declaration of 1975. When reporting experiments on animals, indicate whether the institution's or the National Research Council's guide for the care and use of laboratory animals was followed. Identify precisely all drugs and chemicals used, including generic name(s), dosage(s), and route(s) of administration. Do not use patient names, initials, or hospital numbers or in any manner give information by which the individuals could be identified.

Include numbers of observations and the statistical significance of the findings when appropriate. Detailed statistical analyses, mathematical derivations, and the like may sometimes be suitably presented in the form of one or more appendices.

Results

Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables, illustrations, or both; emphasize or summarize only important observations.

Discussion

Emphasize the new and important aspects of the study and conclusions that follow from them. Do not repeat in detail the data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies. Conclusions that may be drawn from the study may be alluded in this section; however, they are more formally presented in the section to follow.

Conclusions

The principal conclusions should be directly linked to the goals of the study. Unqualified statements and conclusions not completely supported by your data should be avoided. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted but clearly label them as such. Recommendations (for further study, etc), when appropriate, may be included.

Acknowledgments

Acknowledge only persons who have made substantive contributions to the study itself; this would ordinarily include support personnel such as statistical or manuscript review consultants, but not subjects used in the study or clerical staff. Authors are responsible for obtaining written permission from persons being acknowledged by name, as readers will infer their endorsement of the data and conclusions.

Reference Pages

References are to be numbered consecutively as they are first used in the text (placed in line in parentheses) and listed in that order (not alphabetically) beginning on a separate sheet following the text pages. The style (including abbreviation of journal names) must be in accordance with that specified by the US National Library of Medicine: see recent January issue of *Index Medicus* for a complete listing of indexed journals.

Only those references that actually provide support for a particular statement in the text, tables, and/or figures should be used. Excessive use of references should be avoided; normally, 1 or 2 authoritative references to support a particular point are sufficient. A short article of up to 5 or 6 manuscript pages may be adequately supported by 5 to 10 references; longer articles of up to 20 pages by 15 to 25.

References must be verified by the author(s) against the original document. Abstracts, “unpublished observations” and “personal communications” may not be used as references, although reference to written (not verbal) communications may be inserted in parentheses in the text. Information from manuscripts submitted but not yet accepted may be referred to in parentheses in the text. Manuscripts accepted but not yet published may

be included in the references with the designation “In press.” When a previously cited reference is used again, it is designated in the text in parentheses by the number originally assigned to it by its first use: do not assign it another number or use the notation “op cit.”

For the most part, sources of information and reference support for a bioscientific paper should be limited to journals (rather than books) because that knowledge is generally considered more recent and more accurate since it is customarily peer-reviewed. Consequently, the basic form for approved reference style is established by journal listings; others (books, etc) are modified from journal listings as may be required. A summary of journal reference style is as follows:

Last name of author(s) and their initials in capitals separated by a space with a comma separating each author. (List all authors when 6 or fewer; when 7 or more, list only the first 6 and add et al.)

Title of article with first word capitalized and all other words in lower case, except names of persons, places, etc.

Name of journal, abbreviated according to *Index Medicus*; year of publication (followed by a semicolon); volume number (followed by a colon); and inclusive pages of article (with redundant number omitted: e.g., 105-10).

Specific examples of correct reference form for journals and their modifications to other publications are as follows:

Journals

1. Standard article You CH, Lee KY, Chey RY, Menguy R. Electrogastrographic study of patients with unexplained nausea, bloating and vomiting. Gastroenterology 1980; 79:311-4.

2. Corporate author The Royal Marsden Hospital Bone-Marrow Transplantation Team. Failure of synergeneic bone-marrow graft without preconditioning in post-hepatitis marrow aplasia. Lancet 1977;2:242-4.

3. No author given Coffee drinking and cancer of the pancreas [editorial]. Br Med J 1981;283:628.

4. Journal supplement Magni F. Rossoni G, Berti F. BN-52021 protects guinea-pig from heart anaphylaxis. Pharmacol Res Commun 1988;20 Suppl 5:75-8.

5. Journal paginated by issue rather than volume Seaman WB. The case of pancreatic pseudocyst. Hosp Pract 1981;16:24-5.

Books and other monographs

6. Personal author(s) Eisen HN. Immunology: an introduction to molecular and cellular principles of the immune response. 5th ed. New York: Harper and Row; 1974. p. 406.

7. Editor, compiler, chairman as author Dausset J, Colombani J, editors. Histocompatibility testing 1972. Copenhagen: Munksgaard; 1973. p. 12-8.

8. Chapter in a book Weinstein L, Swartz MN. Pathogenic properties of invading microorganisms. In: Sodeman WA Jr, Sodeman WA, editors. Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders; 1974. p. 457-72.

9. Published proceedings paper DuPont B. Bone marrow transplantation in severe combined immunodeficiency with unrelated MLC compatible donor. In: White HJ, Smith R, editors. Proceedings of the 3rd Annual Meeting of the International Society for Experimental Hematology. Houston: International Society for Experimental Hematology; 1974. p. 44-6.

10. Agency publication Ranofsky AL. Surgical operations in short-stay hospitals: United States—1975. Hyattsville (MD): National Center for Health Statistics; 1978. DHEW publication no (PHS) 78-1785. (Vital and health statistics; series 13; no 34).

11. Dissertation or thesis Cairns RB. Infrared spectroscopic studies of solid oxygen [dissertation]. Berkeley (CA): University of California; 1965.

Other articles

12. Newspaper article Lee G. Hospitalizations tied to ozone pollution: study estimates 50,000 admissions annually. The Washington Post 1996 Jun 21; Sect. A:3 (col. 5).

13. Magazine article Roueche B. Annals of medicine: the Santa Claus culture. The New Yorker 1971 Sep 4:66-81.

Table Pages

Type each table on a separate sheet; remember to double-space all data. If applicable, identify statistical measures of variation, such as standard deviation and standard error of mean. If data are used from another published or unpublished source, obtain permission and acknowledge fully.

Using Arabic numerals, number each table consecutively (in the order in which they were listed in the text in parentheses) and supply a brief title to appear at the top of the table above a horizontal line; place any necessary explanatory matter in footnotes at the bottom of the table below a horizontal line and identify with footnote symbols *, †, ‡, §, , ¶, **, ††, ‡‡, etc.

Illustration Legend Pages

Type legends for illustrations double-spaced, starting on a separate page, following the table pages. Identify each legend with Arabic numerals in the same manner and sequence

as they were indicated in the text in parentheses (e.g., Figure 1). Do not type legends on artwork copy or on pages to which illustrations may have been mounted; they must be typed on separate pages from the illustrations themselves.

When symbols, arrows, numbers or letters are used to identify parts of the illustrations, identify and explain each one clearly (if necessary) in the legend. Explain internal scale and method of staining in photomicrographs, if applicable.

Illustration Preparation

Illustrations (including lettering, numbering and/or symbols) must be of professional quality and of sufficient size so that when they are reproduced for publication all details will be clearly discernible; rough sketches with freehand or typed lettering are not encouraged. All illustrations should be submitted embedded in the manuscript document in the appropriate place.

If photographs of persons are used, either the subjects must not be identifiable or their pictures must be accompanied by written permission to publish the photographs.

Cite each figure in the text (generally in parentheses) in consecutive order. If a figure has been published, acknowledge the original source and submit a written permission letter from the copyright holder to reproduce the material. Permission is required, regardless of authorship or publisher, except for documents in the public domain*.

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Manuscript Submission Summary

Manuscript components

In terms of completeness of submission, the "manuscript" includes the following components:

- Manuscript electronically via email of CD (The author should be sure to retain the original file in case of loss of the submission copies in transit.)
- Release form (signed by all authors, and by employer if study was a work for hire).
- Permission letter(s) of permission to use previously published material in all forms and media (if applicable).
- Consent form(s) to publish photographs in which subjects may be identifiable (if applicable).
- Cover letter from principal author (or author specified as correspondent) providing any

special information regarding the submission which may be helpful in its consideration for publication.

Submission Instructions

The manuscript should be emailed to the Central Office at icak@dci-kansascity.com. The Release Form should be completed and signed then fax to 913-384-5112 or mailed to:

The ICAK-U.S.A. Central Office
4919 Lamar Ave.
Mission, KS 66202

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 A.K. 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.

A.K. 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. A.K. 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 J. 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 (microavulsion 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 pre-conceived impressions regarding the test outcome
- Non-painful contacts -- non-painful 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 a 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.

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Table of Contents

Experimental Observations of Members of the ICAK

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A Comparative Analysis of Applied Kinesiology Upper Cervical Vertebral Challenge Technique and Upper Cervical Radiographic Examination

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Abstract

INTRODUCTION:
Upper cervical (UC) chiropractic has a more than 70-year history of pursuing empirical research, making many consider UC examination as the "gold standard" for evaluating the UC spine. Applied Kinesiology utilizes Vertebral Challenge Technique (VCT) as one tool to determine the presence and direction vertebral subluxation.

OBJECTIVES:
The purpose of this research is to present a preliminary assessment of the accuracy of the AK VCT when applied to the UC spine by comparing it to established UC protocols, which provide an excellent reference for comparison.

METHODS:
Patients selected for this study underwent a normal initial evaluation, consisting of history, history based exam, manual muscle testing exam, and UC examination. Additionally, VCT was applied to the CCJ and results for atlas laterality and rotation were recorded. Pre-adjustment VCT results were compared to UC radiographic measurements to determine agreement between these two evaluation procedures and determine the accuracy of VCT when applied to the CCJ.

RESULTS:
Twenty-seven patients were included in this study. Multifactorial analysis showed that when compared to UC radiographic pre-adjustment measurements, pre-adjustment VCT showed an agreement range of 3.7%-47.6%. Post-adjustment agreement increased to 96.3%

CONCLUSION:
The lack of agreement with pre-adjustment radiographic, orthogonal model measurements of the CCJ suggests that pre-adjustment VCT applied to the atlas may not be an effective method for determining the direction of correction to reduce CCJ misalignment. However, due to the dramatic increase in agreement post-adjustment, more investigation is warranted.

Key Indexing Terms
Chiropractic, Upper Cervical, Atlas Orthogonal, Applied Kinesiology, Subluxation, Manual Muscle Test, MMT, Vertebral Challenge Technique, Craniocervical Junction, NUCCA

Introduction

The chiropractic subluxation has had many definitions over Chiropractic's history and that definition varies between organizations with modern definitions slanting toward describing a functional entity over a purely structural problem.[1,2] Much like Applied Kinesiology (AK), upper cervical (UC) chiropractic's thought process encompasses this functional paradigm with its focus on correcting subluxation with the goal of improving overall function and general health. UC also mirrors the AK thought processes by focusing on *when* to adjust, not just where/what to adjust.[2,3]

UC has a rich history with its first introduction as "Hole in One" (HIO) by BJ Palmer at the 1931 Lyceum and later in print in 1934 in the text *The Subluxation Specific – The Adjustment Specific*.[2] After this introduction, a multitude upper cervical techniques (UCT) developed with differing thought processes, methods of analysis, and corrective procedures. Despite these differences, all UCT focus on making corrections the craniocervical junction (CCJ) defined as: *the junction of the base of the skull and the cervical spine including the occipital bone, surrounding the foramen magnum (occiput), C1 (atlas), C2 (axis) and the intervening tendons, and ligaments.*[2]

Today, there are two major thought processes within UC: the articular model and the orthogonal model. The articular model focuses on correcting misalignments relative to the articulations of the CCJ and includes Knee Chest, Toggle Recoil, and Blair techniques. The orthogonal model focus on correcting relative misalignments of the CCJ measured in the anatomical planes and includes Grostic, NUCCA, Orthospinology, Atlas Orthogonal (AO), and Advanced Orthogonal (AdvO) techniques.[2,4] All UCTs have the goal of reducing the radiographically measured misalignments to improve overall neurologic function and general health. The importance of the goal of UC correction is echoed by Walther in the text, *Applied Kinesiology, Synopsis, 2nd Edition,* where, in his description of *Primary Atlas Technique,* he states, "Maintenance of proper upper cervical function is paramount to normal function of the nervous system."[3]

Included in UC's long history within chiropractic is a seventy-plus year history of research into the theory that the CCJ misalignment is the primary misalignment that needs correction.[2] This research extends into the areas of anatomy, clinical cases, clinical trials, examination and examiner reliability, and technique and instrument development. The results of this ongoing research has led to greater understanding of the intricacies of the CCJ and the impact dysfunction of this area can have on human function, as evidenced by the myriad of case and clinical studies covering a diverse set of conditions including, but not limited to: neck pain, headache and migraine, blood pressure dysregulation, epilepsy, Parkinson's disease, Multiple Sclerosis, concussion, Meniere's disease, scoliosis, and immune system function.[1,2,4, 5-13] Mechanistic research is underway to attempt to discover why such a diverse set of conditions seem to respond

to the correction of misalignment of the CCJ with a lot of that research focusing on the neuroanatomy of the region and the hydrodynamics of the craniospinal system.[3,12,14]

The purpose of this research is to present a preliminary assessment of the accuracy of the AK vertebral challenge technique (VCT) when applied to the UC spine by comparing it to established, time-tested, and evidence supported UC protocols which provide an excellent reference for comparison. The analysis will utilize the results of VCT for laterality and rotation of atlas, comparing those to orthogonal based, radiographic CCJ measurements. Additional discussion of the reasons for apparent disagreement will also be included, with the hope of improving interpretation of VCT when applied to the CCJ in an effort to improve patient evaluation, care, and outcomes under AK procedures.

Discussion

Throughout this comparison, examination procedures from both UCT and AK will be used and it is important to understand their history, utility, and reliability.

Leg Length Inequality

Functional leg length inequality (LLI) is considered to be a reliable indicator within UCTs of the presence of a misalignment at the CCJ and the need for an UC adjustment. The supine leg check (SLC) has been shown to have clinical validity when assessed for both inter- and intra-examiner reliability.[2,4,15,16] LLI is the determining factor within UCT for *when* to adjust the CCJ and directs the practitioner to perform further evaluation – scanning palpation and x-ray analysis in the case of AO and AdvO.[2, 4,15,16] AK also utilizes LLI as an indicator of atlas misalignment through the head-on-neck, visual righting, labyrinthine, and proprioceptive mechanisms.[3] A major difference between UCT and AK assessment of LLI is that with UCT the LLI is measured in a single position (supine or prone) where in AK the SLC is followed by a prone leg check to determine atlas misalignment and indicate the atlas laterality.[2,3,15,16]

Scanning Palpation

Scanning palpation (SP) is a procedure utilized by AO and AdvO to further assess the presence of a misalignment of the CCJ. It involves the palpation of the cervical spine along the facet line with enough pressure to "moderately compact the soft tissues."[15] For the upper cervical area, palpation is directed at two anatomical holes found bilaterally in the suboccipital region. The first is bordered by rectus capitis posterior major, obliquus capitis inferior, and obliquus capitis superior. The second is bordered by obliquus capitis inferior and longissimus capitis.[15] Most AO/AdvO doctors, this author included, will palpate the above described suboccipital area feeling for swelling, muscle spasm, or osseous protuberances. During this examination the patient may exhibit signs of pain or discomfort.[15,16] A small investigation into the inter-examiner reliability of SP was conducted in 1985 and reported in the *Atlas Orthogonal Chiropractic Program* manual, showing excellent agreement between the examiners.[15] Some UC doctors will palpate the entire neck as part of the assessment, but this is not always the case.

SP findings are classified according to severity of swelling, muscle spasm, and pain: Grade 1 – mild, Grade 2 – moderate, and Grade 3 – severe.[15,16] Some doctors, this author included, will also include a Grade 0 for no positive findings. SP examination results are typically recorded in

a two by two grid, representing the areas palpated, and along with LLI indicate the need for radiographic examination to determine the adjusting vector and table placement. SP examination occurs before and after treatment with the expectation of a reduction in severity grade after the correction is made.[15,16]

Radiographic

UCTs utilize radiographic analysis (pre x-ray) as another tool to determine the presence and degree of misalignment of the CCJ. The use of radiographic measurement of UC subluxation has sixty years of evidence supporting its use, with investigations showing sufficient to excellent inter- and intra-examiner reliability.[2,4] UC radiographic analysis also utilizes x-ray measurements after the adjustment (post x-ray) to measure the degree of correction and potentially alter adjustment parameters to achieve a more complete reduction of the CCJ misalignment toward an orthogonal state. Greater reduction of the CCJ misalignment is associated with better patient outcomes and fewer adjustments.[4,15,16] The high level of reliability makes UC radiographic analysis an excellent tool for testing the concurrent validity of VCT.

The typical series of UC radiographs include (with alternative nomenclature in parentheses):

- Lateral Cervical (Sagittal) – taken to visualize the cervical spine and measure the angle, relative to level, of the atlas posterior arch and the angle of the superior facet of C2 to set the angles for taking accurate Frontal and Axial radiographs.
- AP Open Mouth (Axial) – taken to visualize the odontoid, C2 spinous rotation, and measure the Axial Circle.
- Frontal (Nasium) – taken to make the majority of the orthogonal system measurements, including Atlas Frontal Plane Line (AFP), Atlas Cephalic Displacement (ACD), Cervical Spine Angle (CS).
- Horizontal (Vertex/Base Posterior) – taken to measure Atlas Horizontal Rotation (AHR).[2,15,16]

For this investigation, AO and AdvO radiographic analysis was used and discussion will be focused on those procedures. In both AO and AdvO procedures, x-rays are taken in the sagittal, frontal, and horizontal planes to construct a three-dimensional measurement of the CCJ misalignment and calculate a correction vector. The measurements of note for this comparison are:

- Laterality – recorded as ACD, and is defined as the side of acute angle between the AFP and Frontal Cephalic Line (FCL).
- Rotation – recorded as AHR, and is defined by the measure of the angle, anterior (acute) or posterior (obtuse), on the side of laterality.[15,16]

Manual Muscle Testing

The history of manual muscle testing (MMT) extends back to the original work of Lovett in 1915, and throughout its history, much research into MMT's validity as a diagnostic tool has been performed. Overall, this research has demonstrated that MMT showed good repeatability and good inter-examiner reliability.[3,17] Cuthbert and Goodheart summarize this data in a

narrative review that also discussed some of the challenges related to the research into the validity of MMT as it applies to AK procedures. They also present a discussion of the different types of validity that should be considered when pursuing further research.[17]

The Cuthbert, Goodheart article was reviewed by Hass, et al., and while that reinterpretation contained some valid points in regard to various aspects of "search methods, inclusion criteria, quality assessment, [etc.]",[18] this author thinks that Hass, et al. misinterpreted the *intent* of the Cuthbert, Goodheart article. The Cuthbert, Goodheart article seemed to have the goal of establishing that MMT was a reliable and reproducible tool to aid in the diagnostic process, of which AK procedures can be a part of. They also discuss the hurdles that plague research into AK muscle testing outcomes and AK treatment procedures in an attempt to catalyze interest into that difficult research.[17]

Vertebral Challenge Technique

VCT is one of the cornerstones of AK procedures, aiding the practitioner in finding the optimal contact and direction needed to correct a vertebral subluxation. According to Walther, a vertebral subluxation can be challenged by applying pressure on the spinous or transverse processes to rotate or tip a vertebra and then releasing that pressure. If the intrinsic muscles of the spine are dysfunctional, they will overreact to this stimulus, making the subluxation worse. This worsening of the subluxation will *stress* the nervous system and a previously strong muscle (PSM) will weaken on subsequent testing.[3] VCT applied to the CCJ can be complicated by high mechanoreceptor density, intricate muscle control, and complex connective tissue interactions. Once a corrective adjustment is applied to the vertebra, the vertebra should no longer challenge with VCT.[3,15,16]

Methods

Patient Selection

Subjects for this study were randomly selected from new patients from January 1, 2021 through December 31, 2022. Selected patients were included regardless of primary complaint and were also included if the results of the UC evaluation yielded no CCJ misalignment. All selected patients were informed of the investigation and its purpose, informed that there would be no alteration in care, and written consent to anonymously use examination data was obtained.

Pre-Evaluation

Initial evaluation of patients included in this study did not differ from the normal initial evaluation for a new patient and consisted of history collection, examination based on that history, AK MMT of 48 muscles bilaterally to construct a list of facilitated (strong) and inhibited (weak) muscles to work from, and evaluation for CCJ misalignment using AO and AdvO protocols, including functional LLI via SLC and SP as described above.

For this investigation, selected patients underwent additional testing that included VCT applied to the atlas. This was a rebound style test challenged as described by Walther,[3] checking for laterality and rotation of atlas, and was performed using a previously identified strong muscle, noted in table 1 below.

The order of examination procedures was purposefully designed to essentially blind the practitioner and avoid influence by the radiographic analysis results on the VCT applied to the atlas and progressed as follows:

1. AK MMT of 48 muscles and results recorded.
2. Pre-functional LLI evaluated and results recorded.
3. Pre-scanning palpation performed and resulted recorded.
4. Pre-VCT applied to atlas and results recorded.
5. Pre-radiographic analysis performed, if indicated.
6. Adjustment of the CCJ performed, if indicated.

CCJ Adjustment Procedure

The adjusting protocol used in this study followed AO and AdvO procedures, utilizing a Spinalight model 310 AO instrument.[15,16] This instrument delivers a solenoid driven, percussive impulse that imparts a mechanical wave into the CCJ at a prescribed angle to make the CCJ alignment correction. The adjusting procedure involves:

- Setting the table-mounted adjusting instrument to the appropriate Z- and Y-axis correction vector based on radiographic measurements.
- Placing the patient side-lying with the mastoid supported on the headpiece.
- Positioning the patient's shoulders and setting headpiece height to accommodate biomechanical factors measured on the radiograph.
- Measuring the head height angle of the patient and correcting the Z-axis vector based on this measurement.[16]
- Positioning the adjusting instrument stylus with the appropriate lead to the C1 transverse process.
- The instrument is activated and the corrective impulse is delivered.

Post-Evaluation

Post-adjustment examination procedures also did not differ from the normal new patient protocol, except for the addition of VCT applied to the atlas and progressed as follows:

1. Post-scanning palpation performed and resulted recorded.
2. Post-functional LLI evaluated and results recorded.
3. Post-VCT applied to atlas and results recorded.

This author does not routinely perform post x-ray analysis, opting to use clinical findings such as not holding an adjustment, lack of change in symptoms, or side effects to indicate the need for post x-ray analysis. No patients included in this study demonstrated any indications to perform post x-rays.

Statistics

The goal of this research is to present a preliminary investigation of the accuracy of the AK VCT when applied to the UC spine by comparing it to established UC radiographic measurements in an effort to improve patient evaluation, care, and outcomes under AK procedures.

This preliminary research attempts to answer the question, Does AK VCT provide the same *listing* as radiographic upper cervical analysis? To answer this question the following null and alternative hypotheses were constructed and are presented respectively.

- *If an atlas misalignment is present and it is assessed utilizing AK VCT and AO/AdvO examination procedures, then the results of those examinations will be different.*
- *If an atlas misalignment is present and it is assessed utilizing AK VCT and AO/AdvO examination procedures, then the results of those examinations will be the same.*

Due to the potential errors in the calculated statistical significance (α-value) that can be produced by the small sample size of this study and the preliminary nature of this investigation, α-value and p-value will not be utilized for null hypothesis evaluation.[19-21] Instead, a conceptual discussion of the data, their meaning, and the potential reasons for the outcomes will be undertaken. This discussion will be used to either accept or reject the null hypothesis.

Results

Twenty-seven patients were included in this investigation and the following were recorded for each of those patients.

- Pre LLI measurement
- Pre Scanning Palpation results
- Muscle used to perform VCT
- Pre atlas VCT results
- AK indicated listing
- Radiographically measured listing
- Post Scanning Palpation results
- Post LLI results
- Post atlas VCT results

The pre-adjustment data collected (Table 1) indicated that, according to AO/AdvO examination standards – the presence of LLI and positive scanning palpation findings – a misalignment of the CCJ was present in 26 of the 27 patients included in this study. The one patient not demonstrating a CCJ misalignment was included in this analysis because the accuracy of VCT should be independent of the presence of an atlas misalignment, meaning if there is no atlas misalignment, VCT should be negative in all directions of challenge.

Pre-VCT results were recorded based on the direction of the rebound challenge (ie. left to right challenge indicated by L>R or left to right with anterior to posterior challenge indicated by L>RAP) with (+) meaning a PSM weakened with the challenge and (-) meaning a PSM did not weaken with the challenge. If VCT results did not definitively indicate laterality, "Inconclusive" was recorded because of the need to identify laterality to determine rotation in UCT. Despite this limitation, rotation was still compared when possible. "No Listing" was recorded if no positive challenges were obtained by VCT. Where VCT did determine laterality but rotation was inconclusive, the listing was recorded as both anterior and posterior (ie. LA&P).

Comparison of the VCT results and the radiographic measurements (Table 2) was divided into laterality agreement and rotation agreement. Agreement was classified as Yes, No, and NA in the case of an inconclusive VCT laterality results.

Table 1: Pre-adjustment test results

Pre Leg Length	Pre Scanning Palpaption		Muscle Used	Pre L>R	Pre L>RAP	Pre L>RPA	Pre R>L	Pre R>LAP	Pre R>LPA
LSL 3/8"	3	2	L Middle Deltoid	+	+	+	+	+	+
	3	2							
LSL 1/2"	1	3	L Middle Deltoid	+	-	+	-	-	-
	2	3							
RSL 1/8"	2	2	R Latissimus	+	-	+	-	-	-
	3	3							
LSL 1/4"	0	1	L PMC	+	+	+	-	-	-
	2	2							
LSL 1/4"	3	2	R Serratus Anterior	+	+	-	+	-	+
	2	2							
LSL 3/4"	0	1	R PMC	+	-	+	-	-	-
	0	2							
LSL 1/4"	2	2	L Latissimus	+	-	+	-	-	-
	2	3							
LSL 1/4"	2	2	L Latissimus	-	+	-	+	+	+
	2	2							
LSL 1/4"	2	2	L Ant Deltoid	+	+	-	-	-	-
	2	3							
RSL 1/4"	1	2	L Latissimus	+	+	-	-	+	-
	1	2							
RSL 3/4"	0	0	L Latissimus	-	-	-	-	-	-
	0	0							
RSL 1/4"	3	2	L Biceps	+	+	+	+	+	+
	3	3							
E	2	1	L Latissimus	-	-	-	+	+	+
	1	1							
LSL 1/2"	2	2	L Biceps	+	+	+	-	+	+
	2	3							
LSL 1/2"	1	2	L PMC	+	+	+	-	-	-
	1	3							
RSL 1/4"	1	2	L Ant Deltoid	+	+	+	+	+	+
	1	2							
LSL 1/2"	3	2	L Latissimus	-	-	-	+	+	+
	2	3							
LSL 1/4"	1	2	R PMC	+	+	+	-	-	-
	2	3							
RSL 1/4"	1	2	R Biceps	+	+	+	+	-	+
	1	3							
E	1	2	L Latissimus	+	+	-	-	-	-
	2	3							
RSL 1/4"	2	2	R PMC	+	+	+	+	+	+
	2	2							
RSL 1/2"	2	2	L Latissimus	-	-	-	-	-	-
	1	3							
RSL 1/2"	2	1	R Latissimus	-	+	-	+	+	+
	2	1							
DNP	2	2	L Latissimus	+	+	+	-	+	+
	2	3							
LSL 1/4"	2	2	L Latissimus	-	-	-	+	+	+
	2	3							
RSL 1/4"	2	2	L Latissimus	-	-	-	+	-	+
	2	2							
LSL 1/8"	3	1	L Latissimus	-	-	-	+	+	+
	3	2							

Table 2: AK VCT and AO/AdvO listings with agreement results

AK VCT Indicated Listing	X-ray Measured AO/AdvO Listing	Laterality Agreement	Rotation Agreement
Inconclusive	R6 P32	NA	NA
LP	R27 P7	No	No
LP	R18 A6	No	Yes
LA&P	L10 A10	Yes	NA
Inconclusive	R 27 A6	NA	No
LP	R11 P10	No	No
LP	R6 A9	No	Yes
RP	L1 P85	No	No
LA	L2 P60	Yes	No
LA	L11 P13	Yes	No
No Listing	Not X-rayed	NA	NA
Inconclusive	L12 A9	NA	NA
RA&P	R20 P12	Yes	NA
LA&P	R7 P19	No	NA
LA&P	R32 P1	No	NA
Inconclusive	L18 A15	NA	NA
RA&P	R8 A43	Yes	NA
LA&P	L9 A17	Yes	NA
Inconclusive	L4 A3	NA	NA
RA	R19 P3	Yes	No
Inconclusive	L6 P6	NA	NA
No Listing	R3 P73	NA	NA
RP	L23 A6	No	Yes
LA&P	L12 A11	Yes	NA
RA&P	R33 P2	Yes	NA
RP	L9 P31	No	No
RA&P	L22 P1	No	NA

Data analysis (Table 3) showed that VCT results had poor agreement with the radiographic measurements, whether comparing the total listing agreement (yes for both laterality and rotation agreement), laterality agreement alone, or rotation agreement alone. The poor agreement improved slightly when the inconclusive laterality VCT results were excluded. Rotation agreement analysis was complicated by VCT that yielded anterior & posterior results.

Table 3: Pre-VCT, Pre-radiographic listing agreement analysis

Total Listing Agreement	Total Listing Agreement w/o Inconclusive VCT	Laterality Agreement	Laterality Agreement w/o Inconclusive VCT	Rotation Agreement	Rotation Agreement w/o Inconclusive VCT	Rotation Agreement w/o A&P and w/o Inconclusive VCT
3.7% (1/27)	4.8% (1/21)	37.0% (10/27)	47.6% (10/21)	14.8% (4/27)	19.0% (4/21)	22.2% (4/18)

The post-adjustment data collected (Table 4) indicates that, according to AO/AdvO examination standards, the misalignment of the CCJ was corrected in all 26 patients who initially showed CCJ misalignment. Post-VCT results were recorded in the same manner as the pre-VCT. Comparison of post-VCT to the post-AO/AdvO examination yielded a dramatic increase in agreement where only one case showed VCT results that disagreed with the AO/AdvO examination results (Table 5), suggesting that the removal of neurologic insult at the CCJ improves the reliability of VCT.

The results of the data analysis, while not fully quantified with α and p-values, conceptually show that pre-VCT applied to the atlas does not have enough agreement with radiographic, orthogonal model measurements of the CCJ to reject the original null hypothesis and may not be an effective method for determining the direction of correction to reduce CCJ misalignment. However, due to the dramatic increase in agreement post-adjustment, more investigation is warranted.

Table 4: Post-adjustment test results

Post Leg Length	Post Scanning Palpation		Post L>R	Post L>RAP	Post L>RPA	Post R>L	Post R>LAP	Post R>LPA
LSL 1/8"	0	0	-	-	-	-	-	-
	0	0						
LLL 1/2"	0	0	-	-	-	-	-	-
	0	0						
E	0	0	-	-	-	-	-	-
	0	0						
E	0	0	-	-	-	-	-	-
	0	0						
E	0	0	-	-	-	-	-	-
	0	0						
LSL 1/2"	0	0	-	-	-	-	-	-
	0	0						
E	0	0	-	-	-	-	-	-
	0	0						
LLL 1/2"	0	0	-	+	-	-	-	-
	0	0						
LLL 1/4"	0	0	-	-	-	-	-	-
	0	1						
E	0	0	-	-	-	-	-	-
	0	0						
RSL 3/4"	0	0	-	-	-	-	-	-
	0	0						
RSL 1/4"	0	0	-	-	-	-	-	-
	0	1						
LLL 1/4"	0	0	-	-	-	-	-	-
	0	0						
LSL 1/4"	1	0	-	-	-	-	-	-
	0	0						
LSL 1/4"	0	0	-	-	-	-	-	-
	0	1						
E	0	1	-	-	-	-	-	-
	0	0						
E	0	0	-	-	-	-	-	-
	0	0						
E	0	0	-	-	-	-	-	-
	0	0						
E	0	0	-	-	-	-	-	-
	0	0						
RLL 1/4"	0	0	-	-	-	-	-	-
	0	0						
RLL 1/4"	0	0	-	-	-	-	-	-
	0	0						
RSL 1/8"	0	1	-	-	-	-	-	-
	0	1						
RSL 1/2"	0	0	-	-	-	-	-	-
	0	0						
DNP	0	0	-	-	-	-	-	-
	0	0						
LSL 1/8"	0	0	-	-	-	-	-	-
	0	1						
E	0	0	-	-	-	-	-	-
	0	0						
LLL 1/4"	0	0	-	-	-	-	-	-
	0	0						

Table 5: Post-VCT, Post-radiographic listing agreement analysis

Total Listing Agreement	Laterality Agreement	Rotation Agreement
96.3% (26/27)	96.3% (26/27)	96.3% (26/27)

Theoretical Explanations

The results of this investigation into the accuracy of VCT when compared to what could be argued as the "gold standard" for evaluating and correcting misalignment and dysfunction of the CCJ yielded surprising data. These data should not be used to throw out VCT as a tool used to evaluate patients, rather they should provoke thought into why these results came out the way they did and foster a spirit of discovery for better methods to challenge and correct this complex area of neuroanatomy.

The lack of agreement between pre-adjustment VCT and UC radiographic analysis was quite surprising and equally surprising was the abundance of agreement between post-adjustment VCT and UC evaluation. As is the case with every individual patient, the reasons for this disagreement are numerous and likely complex. Potential reasons for disagreement found in this investigation will be divided into UCT reasons and AK reasons and will be discussed respectively.

UCTs have a history of pursuing a greater understanding of the anatomy, biomechanics, and function of the CCJ complex. That pursuit has yielded more accurate examinations, radiographic measurements, and correction vectors. Viewed through this paradigm, the reasons for disagreement between VCT and x-ray measurement are potentially found in the CCJ anatomy.

Variations of skull and UC anatomy are common and normal. Many UCTs have tools for assessing these aberrancies and making corrections to the measurements of the CCJ misalignment for a more accurate listing and subsequent correction. There are particular normal aberrancies that can impact the laterality determination, including variations in base of skull, variations in C1 lateral mass size and shape, variations in C1 posterior arch, variations in occipital condyle size and shape, and variations in the shape of the parietal bone that effect the measurement of the ACD.[15,16]

Another important normal variation that is applicable to the results of this investigation is mastoid size and shape because the mastoid can be large enough to block the practitioners ability to contact the transverse process of C1, resulting in VCT that is inaccurate because the practitioner is not actually contacting C1 and is likely contacting C2 when performing VCT.

In cases of trauma or pathology damage to the apical, alar, or transverse altantal ligaments could alter the biomechanics of the CCJ, influencing the results of VCT and possibly requiring a modification of corrective techniques.[1]

AK also has a rich history of innovation and discovery of better ways to evaluate patients and offers numerous possibilities for explaining the lack of agreement between radiographic measurements and VCT, especially in the light of the dramatically increased agreement in the

post-adjustment analysis. Walter Schmitt has presented a neurologic hierarchy thought process in his *Quintessential Applications* (QA) text and discussion of the AK reasons for lack of agreement between pre-adjustment VCT and UC radiographic analysis will attempt to follow that thought process.[22]

The neurologic impacts of old injuries are discussed by both Walther and Schmitt, with Schmitt placing the treatment of these injuries, through Injury Recall Technique (IRT), at the top of the QA rationale. Injuries seem to impact the ankle mortise joint and the upper cervical spine through flexor and extensor reflex patterns, respectively.[3,22] This disruption of flexor and extensor reflexes may have an impact on the integration of mechanoreceptor, posture, and equilibrium afferent supply, resulting in altered efferent activity and potentially reducing the accuracy of VCT. Support for this explanation may be found in the post-adjustment data of this study with the dramatic increase in agreement once the neurologic insult of CCJ dysfunction was corrected. Additionally, the impact of old injuries on UCT patients who do not *hold* their adjustments should also be considered by UCT practitioners.

Inappropriate acute or chronic pain can also disrupt MMT results and may have an impact on VCT. Walther describes MMT failure due to pain during the test, while Schmitt seems to suggest that any unresolved, inappropriate pain may alter MMT and AK challenges via spinal cord reflexes.[3,22] If Schmitt is correct, then pain, even unconscious pain, from the CCJ and elsewhere would have an impact on the accuracy of VCT, reducing VCT agreement with UC radiographic measurements.

Cranial dysfunction could also alter the accuracy of VCT through the firm dural connections to the inside of the skull, foramen magnum, atlas, and axis. Altered cranial movement or misalignment could place transient or constant tension on the dura, altering the movement patterns of the atlas. Alteration of the movement patterns of atlas would likely disrupt mechanoreceptor activity, resulting in VCT challenge results that do not agree with UC radiographic measurements. Additionally, strain on the dura may result in nociceptive afferent input, from the recurrent meningeal nerve, that could further decrease the accuracy of VCT.

Fixations are described as involving two and usually three vertebra which are locked together and demonstrate resistance to individual movement.[3] This definition overlaps with the way UC practitioners think about the CCJ as a functional complex made up of three boney rings and supporting soft tissue structures.[15,16] Disruption of the movement patterns of the CCJ through fixation phenomenon may hide the presence of an underlying subluxation or alter the results of VCT. The theorized presence of dural tension with vertebral fixation and the dural connection to occiput, atlas, and axis could also disrupt VCT.[3] Due to the direct impact on the structures of the CCJ or the supporting cervical muscles, the fixation patterns that may be most relevant when considering CCJ corrections include occipital, upper cervical, atlas-occiput flexion and extension, lumbar, sacral, and sacroiliac.

The above is not an exhaustive discussion of the potential anatomical and neurological rationale for why the data in this investigation did not support the accuracy of VCT when applied to the CCJ. Rather, it is a start to the conversation about how we can better think critically when presented with clinical challenges and build a bridge of understanding between researchers and

practicing clinicians. This bridge is something that must be built so researchers don't toss aside a potentially useful tool simply because there are unsupportive findings or limited support in the current research. Researchers and clinicians must not stop at "The evidence was limited/unsupportive/anecdotal, so that must not work."; instead we must ask the question, "Why did that evidence turn out that way?" and further pursue answers to difficult questions.

Conclusion

AK practitioners rely on VCT to determine the best contact to use and direction to adjust a vertebra. This comparative study of VCT application to the UC spine to what many would consider the "gold standard" for CCJ evaluation yielded data that was not promising for the use of VCT in pre-adjustment evaluation of the UC spine for subluxation. However, the increase in post-adjustment agreement between VCT and UCT examination shows that there may be other neurological factors at play here, skewing the results of this comparative analysis.

Based on the data from this preliminary look at VCT's accuracy for the CCJ, it seems that there may be a need to consider additional evaluation procedures to accurately assess the CCJ. For the most unresponsive patients, an alteration of treatment procedures may be in order to optimize patient outcomes and the potential for referral for co-management by an UCT practitioner, to achieve clinical goals, should not be ruled out.

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Beyond Emotional Quick Fix: Update

Dylan B. Miller, D.C.

Abstract

The purpose of this paper is to share a method of treating the emotional side of the system without the need for the patient or practitioner to verbally interact with the emotions at hand. This is a simplified combination of multiple techniques, seminars, and tools, to help permanently correct emotional incongruencies within the patient. It is not the author's intention to bastardize any techniques; rather, share combinations of information that everyone can implement and benefit.

Key Indexing Terms
Acupuncture, Beginning and End Points (B&E), Deep Tendon Reflex (DTR), Electromagnetic Signature Test Vial (Vial), Emotional Incongruencies (Emotion), Homeopathic Remedies, Injury Recall Technique (IRT), Low Level Laser-635nm (Laser), Neuro Emotional Technique (NET), Professional Applied Kinesiology (AK), Therapy Localization (TL)

Introduction

This paper further expands upon the 2021 paper "Beyond Emotional Quick Fix: A Non-Invasive, Long-Lasting Correction". This paper can be found on the icakusa.com website, under "Membership Content" section-heading "Collected Proceedings" 2021-2022. This paper assumes the reader has a method of indication for emotion treatment (Tx). If assistance is needed for evaluation/indication for emotion Tx review the above listed paper.

The two main additions to Tx are to have the patient TL the emotional neurovascular reflexes (ENV) during Tx of indicated reflex and activating the vial with laser before correction. The laser seems to bring the emotional frequency from the vial into the nervous systems attention to allow for a more complete correction. This idea stems from Dr. Sheldon Deal's Advanced Kinesiology book (Deal) use of laser for food sensitivities (Lasers-Allergies pg. 107).

The addition of more Tx points in Step 4, beyond the B&E points on the head, came from Dr. John Bandy's Trauma seminar (Bandy). These points have proven to be of great value.

Discussion

Step 1: As always, ensure all injury, nociception, neurological disorganization, and trans neural degeneration (TND) patterns are corrected in order to receive trustworthy information from the nervous system. (Study Quintessential Applications A(K) Clinical Protocol (QA) for the foundational information, and Dr. Richard Belli's advanced/shortcut version from Neurological Applications of Diagnostic Muscle Testing (NADMT). A Diagnostic Muscle Testing Approach to Functional Neurology and Functional Medicine).

Step 2: Emotion Tx is indicated.

Step 3: ENV TL inhibits a normally facilitated indicator muscle (IM).

Step 4: While maintaining inhibited IM from ENV TL, cross TL to find which acupuncture point facilitates inhibited IM. One of the following will facilitate the inhibited IM. B&E on the head, or (From (Bandy)) GV-20, GV-27, CV-24, K-27, SI-3, SP-21, GB-33, K-1 to acupuncture point which negates ENV TL inhibition.

Step 5: Release ENV TL then TL correlating Chapman Reflex (CR) (or other technique's correlating organ reflex) related to the B&E head point indicated in step 4. If instead GV- 20, GV-27, CV-24, K-27, SI-3, SP-21, GB-33, or K-1 negated the ENV TL then TL to
that specific point after releasing the ENV TL. (Note: IM will most likely be facilitated while TL to the indicated acupuncture point or organ reflex by itself).

Step 6: While maintaining TL to reflex point from step 5, use Emotional State Composites Test Kit (10 vials) to cross TL each vial until vial is found that inhibits IM.

Step 7: Prior to Tx, stimulate vial on the patient's body with laser for 3 seconds in order to harmonize this emotional frequency to the patient.

Step 8: IM inhibition due to cross TL to reflex and single vial is then challenged with near or far vision. (If near vision facilitates IM, the reflex point/s will be tapped. If far vision facilitates IM, the reflex point/s will be treated with Injury Recall Technique (IRT). IRT can be preformed with either/or/both cervical or talar maneuver).

Step 9: Laser tuned vial stays with the patient. Doctor then performs tapping or IRT as previously indicated by near or far vision to the indicated reflex point found in step 5 while patient TL to ENV. (For Example: SP-21 is indicated for IRT Tx. The patient may place one hand over the ENV and the other hand over the right SP-21 while doctor performs IRT then patient may reverse hands and touch the left SP-21 while doctor performs IRT.

Step 10: Remove vial. Check to see if emotion needs remedy support. Have patient TL to bilateral BL-1 with index and middle finger, and doctor TL to previously corrected reflex at the same time. If this combination inhibits an indicator IM, this suggests need for remedy support. Find remedy that facilitates IM inhibition. Ex., Spleen reflex was

corrected, then NET remedy #1 Earth (spleen & stomach) will most likely be indicated remedy support.

Conclusion

I believe this Tx creates a more complete correction of emotion in the patient. The body rarely indicates the need for remedy support, as opposed to Tx prior to these additional steps. This Tx may sound complex when written out, however, takes only seconds to perform entire protocol for each emotion.

The Emotional State Composites Test Kit (10 vials) seem to suffice in most cases and are very efficient to go through as opposed larger vial kits. A fuller explanation is given in the 2021 paper “Beyond Emotional Quick Fix: A Non-Invasive, Long-Lasting Correction” on the kit itself.

Example:

IM inhibited by ENV TL

TL to ST-1 on head facilitates IM.

While maintaining ENV TL inhibition cross TL to stomach, spleen, or pancreas organ reflex. If stomach organ reflex TL facilitates ENV TL then release ENV TL and only TL to stomach organ reflex. In most instances the found reflex point TL will not change IM by itself. Then use emotion test kit vials to see which vial cross TLs causing inhibited IM response. With positive organ reflex TL and vial placed on the body, either near or far vision will negate inhibited IM. If near vision facilitates the inhibition then patient will TL to stomach organ reflex point with one hand and TL to ENV with the other while doctor taps ST-1. If far vision facilitates inhibition, then patient will TL to stomach organ reflex point with one hand and TL to ENV with the other while doctor performs IRT.

Before preforming the tapping or IRT correction, laser the positive vial while on the patient’s body to “tune” that emotion to the patient. Laser for 3 seconds, then make indicated correction.

Lastly, remove vial. Then cross TL bilateral BL-1, and previously corrected reflex. Neither TL should cause inhibition of IM independently, however, if cross TL causes inhibition, then remedy support is indicated. If support is indicated in this example, NET remedy #1 Earth (spleen & stomach) will most likely be the remedy given.

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Biomechanics of the Sphenobasilar Cranial Fault

David Leaf, D.C., DIBAK

Abstract

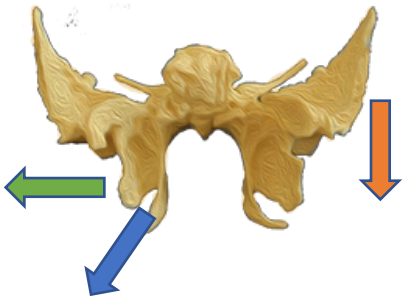
Simple mechanical correction of the sphenobasilar fault takes little into consideration of the causative factors that can create and maintain this fault. The following paper will describe multiple causes that can be the basis of creating this clinical entity. In addition, consideration should be taken to uncover the underlying cause of the faults.

Introduction

For years in the teaching of applied kinesiology, cranial faults have been discussed with little regard to who how they occurred. Unfortunately, many of these problems keep coming back repeatedly, and applying gentle pressure to the skull in their correction is a short-sighted view of eliminating these problems in the patient. This paper will break down the creation of these faults into those factors that affect the sphenoid and occipital bone.

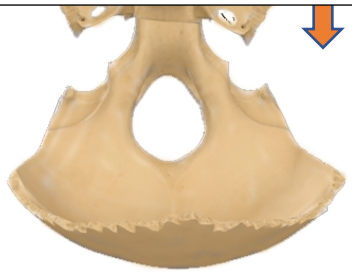
Discussion

Muscle contraction or lack of is one of the usual causes of imbalances in the sphenoid. The muscles that attach here are, of course, related to chewing, swallowing, and talking. The temporalis muscle attaches to the greater wing of the sphenoid, and the pterygoid muscles are on the pterygoid plate and inferior on the body of the sphenoid.



1. Temporalis red arrow vector
Lateral pterygoid green arrow
Medial pterygoid blue vector

Contraction, for example, of the temporalis muscle, will cause an inferior shifting and pressure on the greater wing of the sphenoid. This obviously will cause torque forces in the skull. The first bone being affected is the frontal bone. The frontal bone rests on the sphenoid, and any imbalance in the sphenoid adversely affects the frontal bone. One of the clinical signs of tipping of the sphenoid is changes in the eyeball, with one retracted and one protruded. Testing a patient's vision often will show a difference in their visual acuity when testing the two eyes.

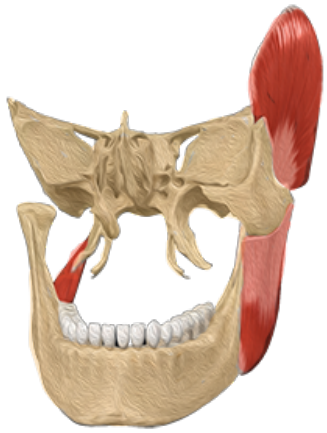


2. Inferior sphenoid
Temporalis contraction

On examination of the temporalis muscle, it is often found to be overly contracted. Palpation of it will find it to be incredibly tender and sore, especially the anterior fibers. This contraction not

only pulls on the greater wing of the sphenoid but can also upset the regular minute motion of the temporal and parietal bones.

The question becomes, what are the most common causes of over-contraction of this muscle? The first and most obvious is someone who chews solely on one side of their mouth. Examining the patient's mouth, if there are missing teeth, especially molars, indicates that the patient will most likely chew almost all on the other side of their mouth. As they masticate their food, they contract the temporalis muscle on one side and the internal pterygoid on the opposite side, thus resulting in abnormal pressure on the sphenoid.

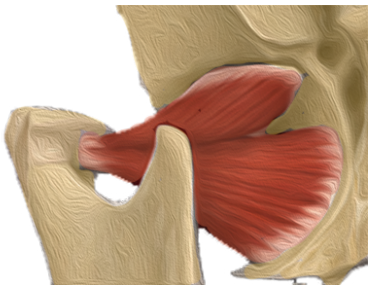


3. Chewing using temporalis and masseter on left and right medial pterygoid

For years it has become apparent that when people eat, drink, or smell an obnoxious substance to them, they will end up with increased contraction of the temporalis muscle. Usually, this is not bilateral but unilateral. One of the first patients in my office that I found this on was getting migraine headaches at night caused by his wife's Paul Mitchell's hair shampoo. Recently, I had a mother and a daughter both getting migraine headaches from a TMJ problem from their hair shampoo.

Once you have isolated and found the over-contraction and tenderness in the temporalis, you will need to have the patient become the detective to find out what actions they have that cause this to reoccur. I ask the patient to palpate the muscle and check the motion of the condyles when opening their mouth after every meal and throughout the day.

Tenderness in the pterygoid pocket is often caused by stress from structural imbalances below the head. This can be from a dropped arch on the side of involvement, a problem with the opposite innominate, or an atlas imbalance on the side of the tenderness. The patient is asked to invert the foot reducing excessive pronation and the pterygoid muscles are palpated for reduction in tenderness. This is repeated with the patient pulling the opposite thigh towards the abdomen. Finally, anterior pressure is applied to the atlas. Reduction in any of these cases indicates the need for structural correction.



4. Pterygoid pocket

In these cases, the cranial fault returns after the patient is standing, walking, or sitting, and in their sleep position.

Another common problem is improper swallowing. Small forces in the cranial bones are created by normal swallowing. If the tongue is improperly positioned or there is a weak swallowing mechanism, input into the skull from this force will fail to create normal cranial motion. The easiest thing here is to ask the patient to swallow and report where the tip of the tongue is when they swallow. It should never be touching the teeth. In this case, treatment is directed at normalizing the swallowing reflex.

5. Normal tongue position in swallowing

When considering the temporalis muscle, think of the triad of health and the three factors that can cause problems. Mental or emotional stress can also cause over-contraction of this muscle, which does not have to be bilateral. Often in the office, just having the patient think of a stressful situation and palpating the temporalis will result in increased ache, soreness, and tender palpable fibers.

The other bone in this cranial pattern is the occipital bone. Abnormal forces on the occipital bone can also be a causative agent in creating this cranial fault. Observing the patient for the head level as well as palpating the suboccipital muscles and especially the fibers of the upper trapezius where it attaches on the occiput needs to be done. The other muscle that needs to be considered here is the function of the sternocleidomastoid. The upper trapezius and sternocleidomastoid become inhibited and contracted in normal walking. Failure of the inhibition in gait creates abnormal stress on the occipital bone. Another common cause of increased contraction in the upper trapezius is a strain of the acromioclavicular joint.

In chronic problems of the occipital bone, there are not only sphenobasilar faults but frequently Dr. Goodhart's original universal cranial fault.

In these cases, it is common to find problems with balance problems. Perform balance tests with the eyes closed and the head in different positions.

Conclusion

The correction of a cranial fault needs to include finding the underlying mechanical stresses which cause the creation of the faults and then correcting them. One of the great problems with this is that many times, more than one cause creates this cranial fault. Patients go home looking for a cause, and once they find one, they give up. It is not uncommon to have a patient have a structural problem like a dropped arch, a pelvic problem, a sleep position, a chewing pattern, a chemical sensitivity, and emotional stress, all of that is causing this cranial fault to reoccur.

Illustrations

All drawings were done by the author.

1. Temporalis red arrow vector Lateral pterygoid green arrow
   Medial pterygoid blue vector
2. Inferior sphenoid Temporalis contraction
3. Chewing using temporalis and masseter on left and right medial pterygoid
4. Pterygoid pocket
5. Normal tongue position in swallowing

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Building Your Own Electromagnetic Signature Test Vial Kit

Dylan B. Miller, D.C.

Abstract

The purpose of this paper is to share a method of creating your own, individual, electromagnetic signature test vials (vial). In cases where professionally made, high quality vials are available, I would recommend purchasing instead of creating on your own. However, there are still many nutrients which the vials are not available for purchase from a professional source.

These vials are another tool to help evaluate patients. Vial testing does not elicit the same neurologic response as lingual nutrient testing recommended by the International College of Applied Kinesiology (ICAK) or Applied Kinesiology Synopsis. 2nd Edition (Synopsis). However, the vials can be quicker to use, easier to store, effective, as well as non-invasive to the patient.

Key Indexing Terms
Duplicator, Electromagnetic Signature Test Vial, Professional Applied Kinesiology (PAK), Test Kit

Introduction

This paper describes a method to create specific vials which can increase the speed and accuracy of any treatment.

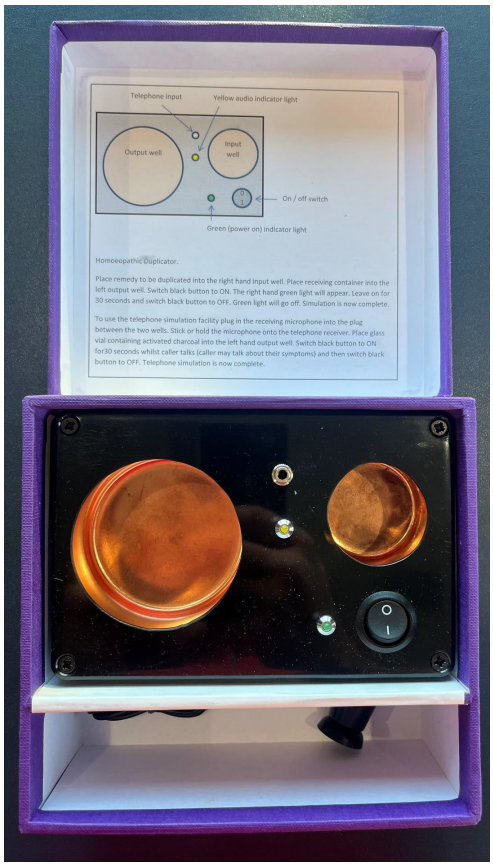
It is my impression that most practitioners, when testing nutrition, either place a remedy on the body in a glass or plastic container, use a general vial for that remedy, or place the exact nutrition on the tongue when testing nutrition for a patient. Instead of testing “Zinc” with a general vial, I wanted to be as specific as possible to test the exact zinc remedies I carry without oral testing. This became particularly important during the last few years while patients were paranoid of germs.

The most scientifically proven method for testing nutrition for a patient is to place nutrition on the tongue to activate the lingual receptors as described in the Synopsis and Quintessential Applications A(K) Clinical Protocol (QA). A vial does not elicit the same response or have the same value as lingual testing, however, does provide many other benefits. Each practitioner is encouraged to find what works best for their patients and their practice. My hope is to simply add yet another tool to your bag.

Discussion

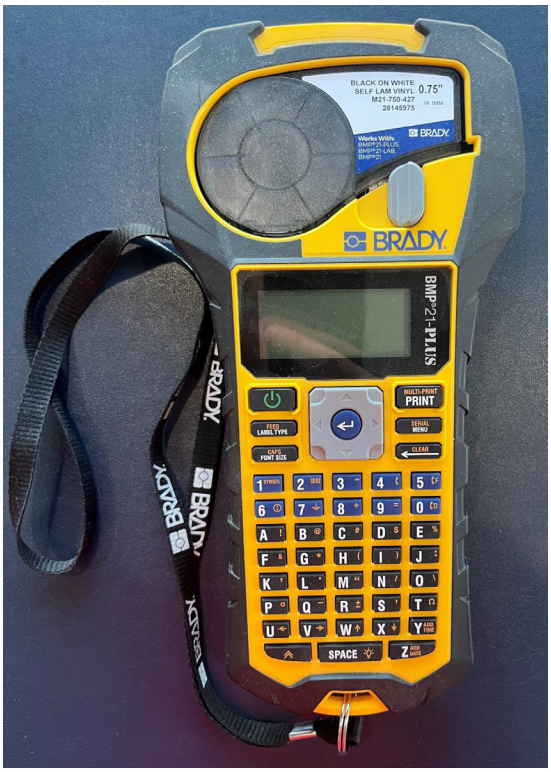
Below is an example of many of the nutrition vials I have made and use daily. The second photo is a close-up view.

Step 1: Purchase Homeopathic Duplicator.



Step 2: Purchase “blank non-energized, filled with charcoal” test vials. Some sources prefer to use alcohol or other methods of preservation which have not been used in this case.

Step 3: Purchase a handheld label printer with appropriate 0.75” self-laminating vinyl.



Step 4: Purchase 1.5” book repair tape.

Step 5: Try to create a neutral environment to make vials in. Turn off Wi-Fi, music, cell phone etc.

Step 6: Insert desired remedy to be copied into the small “input” well of duplicator (right side). Insert blank charcoal vial into output well of duplicator (left side).

Step 7: Turn duplicator switch on for 30 seconds to cause electromagnetic signature of remedy to be copied into the now energized vial, then switch duplicator to off position. (Green light indicates “on” position)

Step 8: Create a label name for the energized vial and trim length to fit vial with scissors before attempting to stick on vial. Below example is Complete Paleo from Nutri-West.

Step 9: Stick label on vial.

Step 10: Wrap labeled vial with book tape to ensure many years of use without fading label.

Final vial ready for use:

Note: Tablet remedies can be placed directly in the input well, however, ensure the input well is clean each time to prevent cross contamination. If a powder or liquid remedy is used, place remedy into a clean 20ml glass bottle. Then place the glass bottle in the input well.

Conclusion

I have received many inquiries and questions at different seminars from fellow practitioners when these vials were observed. I have used these with great success and accuracy and believe this will aid your patients in getting well.

A list of professional vial sources from within and beyond our community can be provided upon request.

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Five Types Of Switching

By: Paul T. Sprieser, D.C., DIBAK

Abstract

This paper is an attempt to state a clear understanding of Neurological Disorganization also known as Switching, and its five forms. This condition is extremely important in the practice of Chiropractic/Applied Kinesiology, and any other health care system that use manual muscle testing (MMT) to gain diagnostic and therapeutic information for the patients' bodies.

I will make the statement that everyone is switched! I also want to state that there are five forms of neurological disorganization or switching and most patients have at least two forms on every visit.

Introduction

The subject of switching first appears in Dr. Goodheart's, Applied Kinesiology Workshop Procedure Manual in 1970.[1] It is under the heading of Cross-Crawl, and the fact that 85% of the population is right handed and has a dominant cortical hemispheric dominance of the left brain. He refers to Carl H. Delacato, Ed.D, The Diagnosis and Treatment of Speech and Reading Problems.[2] He recommends the treatment of K27 bilaterally and umbilical CV8 point with a firm rubbing pressure. In the 1975 Procedure Manual on page 28 under the heading Use of K27 umbilical contacts routinely on all patients to correct switching.[3]

A healthy person's muscle functions should be strong when tested in a predictable manner. This is appropriate in testing muscles and analyzing the normal walking contralateral patterns that are produced in weight bearing and foot proprioception to activate or inhibit muscles.

Goodheart states this in the 1975 AK Workshop Procedure Manual on page 28, under the heading Use K27 umbilical contact routinely on all patients.[4] In Walther's first book on Applied Kinesiology-The Advanced Approach in Chiropractic in 1976, under the heading Connections: K27 is an alternator which allows the flow of energy to one side of the body or the other, especially in flexion or extension of the lumbar spine. K27 is classified by the Chinese in classic acupuncture as the "Home of Associated Points", it is the associated point for all associated points.[5]

At this point in time the introduction to therapy localization (TL) also took place. Goodheart spoke of switching with TL to both K27 points as a positive finding for switching. His description follows as "occasionally we will find indications that there should be weakness on one side, where the weakness shows up on the other side".

My interest in Neurological Disorganization or switching stems from my involvement with AK and my first Introduction to Dr. George Goodheart in June 1968 at the American Chiropractic Association (ACA), national meeting just prior to my graduation in August 1968. I have currently published seven paper on this subject in the Collected Papers of ICAK from 2001 through 2014. What I have discovered that there are five forms of switching or neurological disorganization.

Discussion

The idea of neurological organization had come about due to Dr. Goodheart reading of the book by Carl Delacato, Ed.D., "The Diagnosis and Treatment of Speech and Reading Problems", which was published by Charles C. Thomas Publishing in 1963.[2] This was a limited publication of 25,000 copies from 1963 to 1974. The book covers the neurological organization concept of how this connects to language problems due to injuries to the brain and spinal regions. It covers some anatomy of the nervous system and cortical hemispheric dominances and its importance to being able to learn to read and speak.

Goodheart presents this information in an article that appears in Chiropractic Economics titled "Cross-Pattern Crawling and Muscle Spasms"[6], He brings this in the 1970 Workshop Procedure Manual under the heading of cross-pattern crawling. He ties it together in 1975 with Therapy Localization (TL) to K27 with muscle testing causing a strong indicatormuscle to weaken. He suggests that all patients K27 and umbilicus (CV8) should be treated with a firm rubbing pressure for 20 or more seconds.

This part of the information on switching I review from Walther's Applied Kinesiology Vol.1: Basic Procedures and Muscle Testing, 1981. Evaluation for switching page 134, listed under the following-1. Acupuncture point K27, 2.-Governing and Conception Vessels points CV24 and GV27 and the Associated point at Bladder 16, located close to T6 and T7, 3.. Ocular Lock, which became Crossed K27. Finally the Auxiliary K27 is mentioned with it location adjacent to the transvers process of T11 vertebra bilaterally while simultaneously stimulating CV8.[7]

These are the following statement of importance: "The evaluation for switching should continue throughout the course of a patients' treatment". "If switching recurs on subsequent visits, the physician should evaluate further to determine the cause". Ideally, once switching is corrected it should never return unless the individual experiences trauma of either a structural, chemical or mental nature.

The subject of switching has been in AK for 53 years and the PRY-T has been 43 years. The statement by Walther had changed from stimulating K27 and CV8 at the start of all visits to try to find the reason for switching in Synopsis in 2000.[9] What I have learned is the source of standard switching is dural tension or dural torque. PRY-T is a method of diagnosing and treating meningeal irritation (mechanical meningitis), Yaw #2 is the source of standard switching 99% of the time and the remaining 1% is Yaw#1 and Pitch.[10]

1. Standard Switching- The original form with TL to both K27 right hand to the right and left hand to left causing an indicator muscle weaken. This is almost universal form present in 99% of patient we examine. This form has to do with the information being transmitted back and forth to the right and left cerebral cortex by way of the corpus callosum. This is the source of all subtle energy patterns described by Paul White, DC in "Figure 8" as well as John Diamond, MD presented in his book Behavioral Kinesiology (BK).[11]

2. Cross K27 Switching-Ocular Lock-The patient TL's K27 with the right hand to the left K27 and the left hand to the right K27. Goodheart had associated this with a weakness when the patient

is asked to read a standard line of text from left to right that does not occur when read backwards from right to the left. He called it the B'nai B'rith Syndrome referring to the language of Hebrew which reads from right to the left. I stated in a research paper that the three languages are Arabic, Hebrew and Japanese. I said that I did not know if this is produced by how the person learned to read or how we as humans are wired?

The **original switching** and the **ocular lock or cross K27 switching** were corrected with firm stimulation of both K27's and umbilicus or CV8 for at least 20 or more seconds. What I had found and presented in a research paper, is that original switching was due to dural torque of the yaw#2 pattern at nearly 99% of cases, leaving 1% from the pitch pattern or yaw#1. The ocular lock pattern was connected to the learning disability cranial fault **(LDCF),** that I discovered in 1975 and the cross K27 was corrected while teaching an AK course in 2007. Correction of the LDCF with pressure upward at the cruciate suture and downward on the vertex of the skull during inspiration corrected ocular lock.[12]

3. Lateral Atlas-HO Tendon-Musculo Meridian. The third switch pattern is almost universal and is therapy localized using the thumb contact to the transverse process of C1. This nerve root is only motor and not sensory in nature. The location is anterior to the mastoid process and posterior to the ramus of the jaw, in a little depression. TL to the transverse of C1 with the right thumb to the left transverse and the left thumb to the right transverse is positive for bilateral anterior subluxation of C1.[13]

My reason for suggesting this as switching factor is the following. If you check leg lengths first supine and the in the prone position, without correcting the lateral atlas subluxation you find the longer leg supine will become the short leg in the prone position. The effects are similar to those seen in standard switching pattern.

4. Ionic Switching refers to an imbalance of air flow through the nostrils of the nose. Have patient occlude the left nostril breathing in and then exhale on the same side, then occlude the right nostril breathing in and then exhale on the same side. If a weakness occurs to the indicator muscle we have ionic switching. It is treated by stimulating GV1 tip of coccyx and CV8 umbilicus simultaneously for 20 seconds. This will correct the ionic switching, which occurs in a small percentage of patients, maybe 10%.[14]

5. Therapy Localization Overload Phenomena or (TLOP). I discovered this form of switching in 1976 and published it in 1978 Collected Paper of ICAK. Have the patient TL the temporomandibular joint one or both sides without activation of the muscle of mastication. If TLOP is present a weakness of the indicator muscles will occur. This will cause myriad of strange patterns such as a non-challengeable ileocecal valve neither open nor closed, but a positive TL to Mc Burnie's Point. Also a presence of both Category #1 and Category #2 at the same time will be found. These patterns are the classic form of TLOP Switching. There are other positive patterns too numerous to mention here.[15]

Correction and treatment is the positive side or sides that TL to the ramus of the jaw. Move slowly downward to about ST7 will cause a weakness of indicator muscle inspiratory assist at this point with a thumb contact with a light thrust forward and the using the golgi tendon on the masseter

along with the spindle cell in the direction to weaken will correct the problem. The normal challenge patterns will return for open or closed ICV and one Category will become positive.

Conclusion

The fact that Neurological Disorganization or Switching leads to mistakes being made such as side of muscle weakness, pelvic categories, leg length, as well as cranial faults and challenges it is important to avoid these situations.

If the nervous system is not communicating information correctly it will lead to more serious systemic conditions that could cause organic disease. Dr. Goodheart's statement about the nervous system would seem to be true "God Will Forgive You, Your Nervous System Will Not".

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Food Toxin Additions: Saponins, Salicylates, Phytic Acid & Goitrogens. Their Symptoms and How to Evaluate using Applied Kinesiology

Michael Lebowitz, D.C.

Abstract

Previous submissions to the collected papers of the International College of Applied Kinesiology (ICAK) brought forth the concept of "food toxin testing". This showed that testing individual foods in their whole form often yielded up to 80% false negatives while testing toxic components within the foods such as alpha solanine, gliadin, etc. would eliminate these false negatives. Avoidance of the foods brought symptomatic relief to many patients. Four new "food toxins" are examined with results on testing 50 random patients.

Discussion

In 2011 Dr. Michael Lebowitz published a paper on food toxin testing (1). It examined testing of the following substances: alpha-solanine, gliadin, zein, lactose, casein, lactose, caffeine, paraxanthine, theobromine, and theophylline. When testing a facilitated muscle for either inhibition or hypertonicity he found that using the toxins as test substances yielded up to 600% more positive finding than testing whole foods with those substances in them. To find out the significance of the difference they had people avoid the foods that contained the substances regardless if the whole food itself yielded a positive test. The results often were dramatic in terms of symptom relief. Subsequent papers on lectins and oxalates yielded similar impressive results with oxalates (tested in the suggested way the paper stated) having an 800% difference between testing oxalic acid itself as compared to high oxalic acid foods such as spinach.
With this in mind we decided to explore 4 other potential food toxins: saponins, salicylates, phytic acid and goitrogens.

Saponins: Saponins are compounds produced by some plants for self- protection. The saponins are secondary metabolic compounds produced in healthy plants with anti-microbial activity and thus serve as potential chemical barriers against pathogens. Saponins are classified into two major groups; the steroidal and terpenoid saponins. Saponins are present in both cultivated plants (chili peppers, spinach, soybeans and most other legumes, quinoa, onion, oat, millet, tea, etc.) and as certain non-cultivated "wild" plants (Mojave yucca (Yucca schidigera), licorice (Glycyrrhiza species), ginseng (Panax species), fenugreek (Trigonellafoenum-graceum), alfalfa (Medicago sativa ,etc). In susceptible individuals they can cause increased intestinal permeability ("leaky

gut"), bloating, gas, diarrhea, as well as many other negative effects depending on genetics, nutritional status, toxic load, etc. (2,3).

Salicylates are naturally occurring compounds with pesticidal properties which plants produce to protect against insects, fungus, and bacterial infection. In humans, they can cause a wide range of symptoms from tinnitus to ulcers. High concentrations are found in avocados, berries, grapes, almonds, orange, olives, coffee, sweet potato, nightshades, peanuts, mint, and many spices, etc. Salicylates can alter or interfere with or alter prostaglandin and leukotriene metabolism. Salicylates can also be found in many medications, perfumes and preservatives.

The most common symptoms of salicylate sensitivity are:

- Stomach discomfort or diarrhea
- Itchy skin, hives or rashes
- Asthma and other breathing difficulties
- Rhinitis, sinusitis, nasal polyps
- Angioedema
- Headaches
- Bed wetting or urgency to urinate
- Changes in skin color/skin discoloration
- Fatigue
- Sore, itchy, puffy or burning eyes
- Hyperactivity
- Memory loss and poor concentration
- Depression
- Tinnitus ringing of the ears (4)

Phytic Acid is a natural substance found in plant seeds (including grains and legumes, nuts, etc.). This compound is known as an "antinutrient" for its ability to bind to minerals. Phytic acid impairs the absorption of iron, zinc, calcium, magnesium, manganese, and other minerals and can promote mineral deficiencies. Phytic acid has been shown to inhibit digestive enzymes such as trypsin, pepsin, α-amylase, and ß-glucosidase (5) thus potentially compromising protein and carbohydrate absorption. Phytic acid is found in bran and germ of many plant seeds and in grains, legumes and nuts. It is a simple sugar (myo-inositol) containing six phosphate sidechains, and as such, is a dietary source of phosphorus and an effective chelator of zinc, iron, magnesium, manganese, and calcium. Studies indicate that phytate-mineral complexes are insoluble in the intestinal tract, reducing mineral bioavailability. Vegetarians consuming large amounts of tofu and bean curd are particularly at risk of mineral deficiencies due to phytate consumption. In our practice we have seen many correlations between osteopenia and osteoporotic patients and an inhibition response when manually muscle testing phytic acid.

Goitrogens are compounds that can reduce iodine uptake in the thyroid gland and slow the production of thyroid hormones. The result can be an enlarged thyroid (goiter) and a host of metabolic disturbances. The most common plant goitrogens are compounds known as

glucosinolates found in broccoli, cauliflower, brussels sprouts, cabbage, kale, arugula, radishes, turnips, collard greens, bok choy, etc (6).

Goiters are usually the most obvious sign of iodine deficiency though they do not occur in the majority of patients who are deficient. Brain damage, mental retardation, reproductive failure, and childhood mortality are more serious consequences of toxicity.

Methods

Through much trial and error we found that each toxin above had certain muscles which yielded the most positive results possibly due to the most effected organs similar to what we previously found when testing oxalates (7).
The correlations are as follows:
Saponins best tested with the tensor fascia latae (TFL) muscle test.
Salicylates best tested with pectoralis major clavicular and sternal divisions.
Phytic acid best tested with pectoralis clavicular and sternal divisions.
Goitrogens best tested with teres minor muscle.

Sometimes the substances would show on the right side, other times the left side, and sometimes both. Due to this we found evaluating each side is important.

The muscles above were evaluated by exposing the patient to the substance in a glass vial under the south pole of a 2x5 magnet over GV-20 (8).

Inhibition of a strong indicator muscle or hyper facilitation (muscles used are the ones listed above) of it was considered a positive test. We first made sure the muscles exhibited a normal response (no inhibition or hyper facilitation) without exposure to the vial.

Results

For saponins 7 of 50 patients or 14% exhibited a positive test. Six were positive on a left TFL muscle and one was bilateral.

Salicylates were positive in 10 of 50 patients or 20% (5 right pectoralis clavicular, 2 left pectoralis clavicular, 2 bilateral pectoralis clavicular, 1 left pectoralis sternal).

Phytic acid was positive in 13 of 50 patients or 26% (6 left pectoralis major clavicular, 4 right pectoralis major clavicular, 2 bilateral pectoralis major clavicular, 1 left pectoralis major sternal).

Goitrogens were positive in 8 of 50 patients or 16% (5 left teres minor, 3 bilateral teres minor)

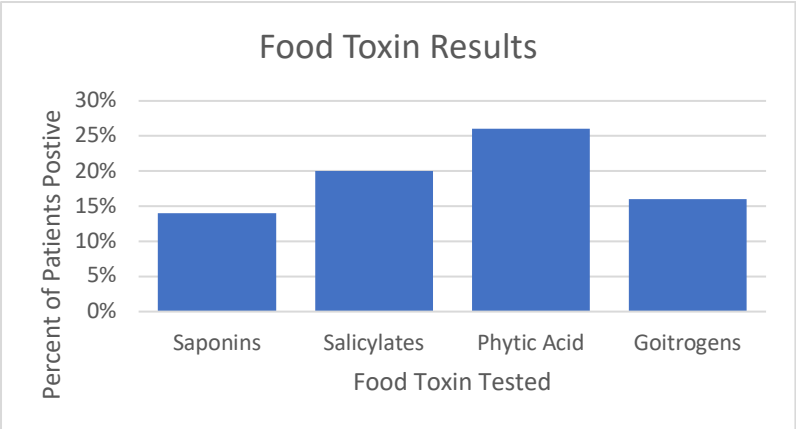

Figure 1. Results of percentage of patient's positive on food toxins

Patients were told to avoid the foods. The vast majority of patients returned 2 weeks later with significant improvement of symptoms but because they were simultaneously treated for dysbiosis, other foods and supplemented as needed, we cannot say for certain that avoidance of these substances was critical. On the phytic acid we will do repeat bone scans on appropriate patients in the future.

Conclusion

Saponins, salicylates, phytic acid and goitrogens are vegetable components that in a significant minority of patients needs to be considered as potential causes of your patient's symptoms if they are not totally responding to correcting dysbiosis, more significant food toxins (gliadin, alpha solanine, casein, lactose, zein, albumin, caffeine and its breakdown products), individual sensitivities, etc.

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IRT and B&E The Qi Connection

William E. Sisson, Jr., MA, D.C .

Abstract

Introduction:
There may be a connection between the Qi (life force energy) and the Injury Recall Technique (IRT) developed by Dr. Walter Schmitt, Jr, DC, DIBAK, DACBN. This same connection may apply to muscles that fail the autogenic inhibition (spindle cell approximation) test. It may also be relevant in cases where a Beginning or End (B&E) point of the acupuncture channels that originate or terminate on the face is used more than once during a patient visit.

Objective:
Develop a process based on Manual Muscle Testing (MMT) that includes this energy factor when clearing the confusion from the Central Nervous System (CNS) which may cause erroneous findings with MMT.

Method:
The new methodology utilizes the IRT maneuver in combination with Therapy Localization (TL) to the appropriate acupuncture Alarm (MU) point to address the energetic component in the procedures mentioned above.

It has been used during the last one- and one-half years in an Applied Kinesiology (AK) practice to clear interference patterns from the CNS prior to treating patients' clinical complaints.

Result:
Most of the patients tested demonstrated a need to have this energetic element cleared when eliminating reflexes arising from traumas and other stress-related events.

Conclusion:
An energetic imbalance appears to be a result of the many stresses that lead to confusion in the CNS. Use of the IRT maneuver in combination with the patient's TL to the Mu Point of the appropriate acupuncture channel can eliminate this component.

Key Words:
IRT, Alarm/Mu point, LQM, Set Point, Switching, Autogenic Inhibition

Introduction

Dr. Wally Schmitt adapted the Injury Recall Technique (IRT) from the work of Dr. Gordon Bronston, a podiatrist in Michigan. Dr. Bronston had learned his technique from its developer, Dr. Robert Croty, DPM and had used it while treating Dr. Schmitt for an ankle injury.

IRT uses a light ankle toggle or micro flexion of the occiput on the atlas, if trauma occurs above the shoulders, to eliminate the flexor-withdrawal type of neurological reflex associated with trauma.

Other challenges can be used to uncover hidden trauma reflexes. These include having the patient direct their eyes toward the site of the injury, turning the head and lateral spinal flexion. Dr. Schmitt named this more in-depth assessment Beyond IRT. (Schmitt Seminar Beyond IRT, Wilmington, NC, 1996)

The brain can also store the memories associated with trauma. Dr. Schmitt treated these with the Location, Quality and Memory (LQM) technique. In LQM the traumatic reflex is neutralized by stimulating the appropriate B&E point when the patient recalls an aspect of the traumatic event that causes an indicator muscle to weaken.

B&E points are utilized for other clearing procedures as well. These include the B&E technique (Walther, Applied Kinesiology Synopsis, 2d. ED., 2000, pp. 277-278), the Nociceptive Stimulation Blocking (NSB) technique (Quintessential Applications, The Neurological Rationale for a Comprehensive Clinical Protocol Using Applied Kinesiology Techniques 2005 AKSP), the Cover One Eye Cerebellar Challenge (Synchronizing the CNS, QA Home Study webinar, July 2020) the REM Challenge (QA Webinars – To Sleep or not to Sleep – part 1, July 2019), the Emotional Recall technique and the Set Point technique that Dr. Schmitt developed with Dr. Michael Lebowitz, DC (1989 Selected Papers of the ICAK, pp. 25-32).

Materials and Methods:
All evaluative testing was done with MMT. The procedure involved tapping the relevant B&E point while the patient therapy localized the appropriate MU point.

Discussion

About three years ago I observed that if a B&E point might be used more than once during a patient visit. I found that an indicator muscle would be inhibited when the patient therapy localized the Mu point for either the channel whose B&E point was used more than once or for its paired yin channel and a IRT challenge was sone . Applying the IRT corrective maneuver while the patient maintained the TL would negate the positive challenge. I routinely perform this procedure now as part of my IRT clearing procedure.

This energetic connection may also exist in the case of a hypertonic muscle. Dr. Schmitt taught that IRT could help reset muscles that are over facilitated. Such a muscle would be hypertonic to MMT and would not be inhibited by spindle cell compression. According to Dr. Schmitt's procedure stimulating the muscle's origin and insertion (O&I) and then performing IRT would reset the muscle to its normal resting state. Several of the patients I treated in this fashion returned with the same hypertonicity on a follow up visit. I found that TL to the MU point of the

acupuncture channel that ran through the muscle would recreate the muscle's hypertonicity even after the O&I/IRT correction. I hypothesized that there might be an energetic component to the muscle's hypertonicity that was not addressed by the O&I/IRT correction alone.

The procedure I developed as a result of my hypothesis is to first determine if spindle cell compression inhibits a muscle. If this test fails, treat the muscle as Dr. Schmitt taught. Next have the patient therapy localize the Mu point for the acupuncture channel running through the muscle and re-test the muscle. For muscles that accommodate more than one acupuncture

channel several MU points may have to be tested. If the muscle fails to respond to spindle cell compression, the patient continues to TL the Mu point while the IRT maneuver is again performed. Recheck with both TL to the origin/insertion and to the MU point with the IRT challenge to determine that the muscle has been reset to normal.

The procedure can be performed in the reverse order of that just described. When I have cleared the muscle using the MU point first the number of times I then have to retreat using O&I is less than vice versa.

Results

TL to the MU point of the indicated acupuncture channel together with the IRT maneuver in addition to the O&I/IRT method described by Dr. Schmitt seems to restore a hypertonic muscle to a normal response pattern and prevents recidivism. In addition, an IRT challenge to the MU point of any B&E acupuncture channel used more than once during a patient visit that inhibits an indicator muscle seems to indicate a hidden IRT pattern that should be corrected.

Conclusion

When the CNS cannot compensate for the accumulation of stresses to which it is subjected it creates confusion in the system. It may also affect the body's QI. This effect can manifest through hypertonic muscles and through other procedures that involve the use of B&E points. It can be detected with MMT when TL to the MU point for the acupuncture channel involved combined with an IRT challenge causes the inhibition of an indicator muscle . The imbalance can be corrected by using the IRT maneuver while maintaining the TL to the MU point.

More research is needed to confirm these findings.

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Management of a Veteran with Headache Disorder, Loss of Taste & Smell, Eye & Ear Pain: Chiropractic Case Report

Karly Abel Kantarevic, D.C.

Abstract

Headache disorder is the most common disorder of the nervous system, the third highest cause worldwide of years lost due to disability, and significantly impacts the veteran population. This case report demonstrates the value and effectiveness of Applied Kinesiology assessment and procedures for noninvasive management of a veteran with sudden onset headache, loss of taste & smell, eye & ear pain which resolved utilizing cranial adjusting techniques, performing cranial nerve tests while cold lasering the brainstem, and addressing mold exposure/sensitivity. To date the patient reports no headache, eye or ear pain and full resolution of taste and smell with no known episode for the past six years.

Key Indexing Terms

Headache, Loss of Smell, Loss of Taste, Ear Pain, Eye Pain, Veteran, Applied Kinesiology, Chiropractic

Introduction

Headache, defined as pain or discomfort in the head or face area, is the most common disorder of the nervous system impacting nearly 50% of the adult population at least once a year with 1.7-4% experiencing headaches more than 15 days a month.[1] Headaches can be primary or secondary due to another condition. There are several types of headaches including migraine, tension, cluster, and medication-overuse (MOH). Headache disorders have been underestimated, under-recognized and undertreated throughout the world. They are not only painful but can be disabling, in the Global Burden of Disease Study (updated in 2013) headache disorders were the third highest cause worldwide of years lost due to disability.[2] In addition, veterans are more likely to experience headaches than civilians with 36% of U.S. veterans who served one-year in Iraq having been diagnosed with headache and migraine.[3]

Headaches can have varying accompanying symptoms like loss of taste, loss of smell, eye, or ear pain. Traumatic brain injury (TBI) in combat veterans has shown to be correlated to loss of taste and smell with nearly 49% experiencing headache disorder with sensory impairment or deficit.[4] Headaches with loss of taste and smell that lingers have been shown to be correlated to allergies, sinus issues, and COVID-19 or long-haul COVID symptoms. Numerous factors including

smoking, obesity, the common cold, medications, high blood pressure, and cancer treatments increase the likelihood of loss of taste, loss of smell, eye, and ear pain.[5] Currently, treatment is aimed at finding the root cause and addressing it with antihistamines, prescription medication or by providing pain relief through anti-inflammatories, like NSAIDs.[1]

With headache disorder being the most common disorder of the nervous system, the third highest cause worldwide of years lost due to disability and impacting a significant number of veterans other therapies for headache, especially those with loss of taste & smell, eye & ear pain should be studied and noted.

The purpose of this study is to demonstrate noninvasive management of sudden onset headache disorder with accompanying loss of taste & smell, eye & ear pain in a veteran using Applied Kinesiology (AK) procedures.

Clinical Features

A 43-year-old male veteran presented with sudden onset headache, loss of taste & smell, eye & ear pain. The symptoms began suddenly, about 8 weeks prior to the initial examination, with sinus issues and the worst headache of his life. The patient noted that all symptoms were constant, he had a continual sore throat, stuffy nose, and the headache was an achy stabbing pain behind both eyes, into the temples, creating intense pressure in both ears. The sun aggravated all symptoms, and nothing relieved them. These symptoms disrupted daily life especially sleep, job, hobbies, social and self-care which the patient rated 4/10 (with 10 being totally unable to function) on the General Pain Disability Index Questionnaire. The patient was not a smoker, had no change in his 4 medications (he had used for several years to help PTSD, depression, and sleep), no traumatic brain injury, and no prior event. He had not found relief with physical therapy or traditional chiropractic care, and nothing was found medically significant through numerous medical providers including MD, ENT, ophthalmologist, or sleep studies.

Upon initial examination, blood pressure was 116/78 mmHg, respiration was normal at 15 bpm, gait was normal, words were not slurred, eyebrows raise equally bilaterally as well as smile/frown, patient reports no dizziness. Using AK Manual Muscle Testing (MMT), rectus femoris, tensor fasciae latae, pectoralis major sternal, latissimus dorsi, and upper trapezius muscles were inhibited bilaterally. The cruciate suture, temporal bulge fault (on the right), external frontal (right), inspiratory assist (bilaterally), symphysis menti, lambdoidal suture (left) , internal frontal (left), zygomatic (left), and lateral shear cranial fault (left) were all noted. Performing cranial nerves tests for cranial nerve 1, 3, 4, 6, 7, 8, & 12 inhibited any previously strong muscle. Moving the eyes in any direction, smiling or frowning, moving the tongue, hearing rustling in the ears, and smell (the patient could not smell at all bilaterally) were all noted. Therapy localization over the ileocecal valve, frontal sinuses, and emotional points also inhibited any previously strong indicator muscle for the patient.

Management and Outcomes

The treatment plan goal was to alleviate headache, eye, & ear pain symptoms as quickly as possible and longer term address the loss of taste & smell. This means addressing root cause issues found during the initial examination that could improve many areas of the body at a time. The first treatment began with adjusting the right sided temporal bulge fault & external frontal rotation.[6]

External Frontal Rotation:

A. Diagnosis
    a. Find a strong indicator muscle
    b. TL 2 hands over 1 eye on side of external fault
    c. If strong muscle goes weak challenge
B. Challenge
    a. Press caudal over central incisor on external side
C. Correction
    1. step one
        a. contact hard palate on side opposite external rotation just posterior to cruciate suture using 4-8 oz pressure
        b. vary pressure vector until digital pain over eyeball is relieved or...
        c. challenge in various vectors testing a previously strong muscle (P.S.M.)
        d. hold pressure 20-40 seconds or...
        e. phase above challenge, c, to respiration and use respiratory adjustment
    2. step two
        a. contact pterygoid plate on side of external rotation
        b. apply superior pressure for 10 - 20 seconds or...
        c. challenge pterygoid process superiorly, test P.S.M.
            (1) if above challenge is negative - challenge inferiorly
            (2) phase above challenge to respiration and use respiratory adjustment
    3. step three...the frontal lift
        a. contact superior edge of orbit on side of superior sphenoid lift (above)
        b. challenge superiorly, test P.S.M.
        c. if challenge was positive, phase to respiration and correct with superior pressure over 3-4 respirations
        d. this relieves a possible jamming of the internal suture between the inferior border of the frontal and superior border of the sphenoid bones
        e. this step is not always needed
        f. if sphenoid lift (step 2) resists adjustment, try frontal lift first
    4. Re-challenge after each step to verify correction

These two adjustments significantly changed how the patient's body was testing through AK MMT. Immediately after verifying correction, bilateral rectus femoris, tensor fasciae latae,

pectoralis major sternal, latissimus dorsi, and upper trapezius muscles were all very strong. All other cranial faults as well as spinal subluxations cleared and no longer therapy localized (TL) or inhibited the patient. Cranial nerve testing of all cranial nerves no longer weakened a previously strong muscle. Recommendations for consulting with his medical provider were given as 3 of the 4 prescription medications had serious interactions including tinnitus, sinusitis, headache, and fatigue.

The first 48 hours the patient had no pain related symptoms, however, still experienced loss of taste & smell. Pain began to return the third day, the patient noticed slight earache, pain behind eyes, and headache. The next visit included adjusting the external frontal rotation (right) and lateral shear fault (left) along with spinal subluxations C1, C2, T3, & T6. He noted the ear pain was less intense and less frequent and the pain for the headache and eye was only noted on the left side. Energetic vial testing found mould mix 1 & 2 to weaken a previously strong indicator muscle. Master set points were cold lasered which strengthened any inhibited muscle and cleared all spinal subluxations including C1 which was repetitive. Patient returned stating no headaches unless over exerting, no ear pain, no eye pain, with continued loss of taste and smell. Cranial nerve tests (1, 3, 4, 6, 7, 8, & 12) smelling, moving the eyes in all directions, smiling/frowning, rustling in the ears and moving the tongue were all performed while cold lasering the brainstem. This cleared all previous findings for that appointment. The patient returned stating his taste and smell had returned to normal, he had not experienced any headaches, eye or ear pain. He noted he has been sneezing and was recommended to use NET Allergy Spray nine sprays three times a day. At the next visit, 1 week later he no longer notes sneezing, sore throat or any previously listed symptom.

For the past 6 years the patient has not had another known episode.

Discussion

With headache disorder being the most common disorder of the nervous system, the third highest cause worldwide of years lost due to disability, and impacting a significant number of veterans it is important to further study therapies to improve or resolve these health complaints. Therapies like AK should be noted as being noninvasive and cost effective. AK procedures and methods are used to treat and manage a wide range of conditions and biomechanical concerns. In this case, a veteran resolved ongoing headache with accompanying loss of taste & smell, eye & ear pain that was otherwise not understood or helped by other professionals. He responded favorably to cranial adjusting, namely external frontal rotation, performing cranial nerve tests while cold lasering the brainstem, and addressing mold exposure/sensitivity.

Presently, conventional treatment is aimed at providing symptomatic relief and/or assessing the underlying pathology. After potential pathology has been assessed for and addressed, use of NSAIDs, antihistamines, and prescription medications are routinely used to address symptoms. None of which help resolve the underlying cranial involvement, dysfunction of the cranial nerves, or stress on the nervous system from mold exposure/sensitivity. Chronic NSAID use has been linked with cardiovascular, cerebrovascular, gastrointestinal, and renal adverse effects. Although they may reduce pain symptoms, they are not addressing the patients' complaints or the underlying issues causing his symptoms. Prescription medications for headache or migraine are commonly

linked to fatigue, headaches, dizziness, sore/tight throat and nausea- nearly identical to headache disorder symptoms and do not resolve the underlying root cause for the symptoms.[7] Also of importance, the serious interaction between 3 of the 4 medications the patient was using, which had side effects including tinnitus, sinusitis, headache, and fatigue. In contrast, the homeopathic remedy recommended to activate the body's natural ability to heal is safe for all ages, low risk of adverse effects, and compatible with other supplements and prescriptions.

The cranial adjusting, cranial nerve techniques, and energetic vial testing with accompanying homeopathy offers a noninvasive approach to address the underlying structural, nervous system dysfunction, and biochemical imbalances. The need for each technique was assessed at each appointment until headaches, loss of taste & smell, eye & ear pain resolved completely. Treatment began by adjusting two cranial bones, as the cranium had not been worked on to date and cranial imbalance is a major contributor to nearly all of the patient's symptoms. With the above measures not only did patient symptoms resolve, but the underlying cause was understood and addressed in noninvasive, nonsurgical, cost effective, and long-term safe methods. Adding clinical value and importance to the area of other therapies not well studied for headache disorders, especially in the veteran population.

Conclusion

With the prevalence and severity of headache disorders, especially in the veteran population, it is important to further study therapies to improve or resolve these health concerns. Therapies like AK should be noted as being noninvasive, nonsurgical, and cost effective. This case report demonstrates how a veteran resolved daily headache, loss of taste & smell, eye & ear pain by cranial adjusting, namely, external frontal rotation, cranial nerve techniques, and addressing mold exposure/sensitivity with targeted supplementation.

The goal for the treatment plan was to alleviate headache, eye, & ear pain symptoms as quickly as possible and longer term address the loss of taste & smell. The first adjustment the patient had reduction of his headache for 48 hours, which was the first time in several months. By the end of the first two weeks of care, seeing the patient twice a week the patient reported no headaches, no eye or ear pain, as well as his taste and smell back to normal. The patient checked in four more times, or every other week for 2 months post resolution of symptoms. For a total of 3 months under care. Although the patient has dealt with significant PTSD for the past 6 years to present the patient has not had another known episode.

This case demonstrates the value and effectiveness of Applied Kinesiology methods and procedure for noninvasive management of a veteran with sudden onset headache, loss of taste & smell, eye & ear pain.

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Manual Muscle Testing as an Indicator for Dysfunction of the Cervical Spine and the Effect of Chiropractic Treatment on Grip Strength

Jay Marienthal, D.C., DIBAK

Abstract

Objectives:

This study aims to determine if chiropractic adjustments are an effective treatment in the cervical spine and throughout the body, if manual muscle testing can be used to more accurately direct treatment of a chiropractic adjustment, and to see if grip strength can be used as an indicator to determine if the treatment has been successful.

Methods:

The data from this study was collected during routine visits to a chiropractic office. Pre-treatment grip strength and post-treatment grip strength were measured using a dynamometer, in patients after a full treatment, cervical spine manipulation only, or as a control group: before treatment, while waiting to be seen.

Results

The group that was given a full treatment was made up of 67 females and 38 males. After the full treatment, the females had an average increase in grip strength of 3.48 kg (7.67 pounds) and with a standard deviation of 2.64 kg (5.82 pounds) and 17.19% and a p value < 0.001. After the full treatment the males had an average increase in grip strength of 4.54 kg (10.00 pounds) and 12.12% with a standard deviation of 3.81 kg (8.41 pounds) and 9.57% and p value of < 0.001. The group that was only given a chiropractic manipulation of the cervical spine was made up of 42 females and 33 males. After the cervical spine only treatment, the females had an average increase in grip strength of 2.44 kg (5.38 pounds) and 11.91% with a standard deviation of 2.42 kg (5.33 pounds) and 12.53% and a p value < 0.001. After the cervical spine only treatment, the males had an average increase in grip strength of 4.45 kg (9.82 pounds) and 13.08% with a standard deviation of 3.92 kg (8.65 pounds) and 13.79% and p value of < 0.001. The control group was made up of 32 people: 22 women and 10 men. It did not show a statistically significant difference in grip strength and had an average increase of 0.06 kg (0.14 pounds) and average decrease of 0.39% with a standard deviation of 5.53lbs and 9.27% and a p value of 0.89.

Conclusion

This study shows that manual muscle testing is a valid tool to indicate dysfunction of the cervical spine in a clinical setting and that chiropractic treatment is beneficial to the cervical spine and the upper extremities.

Key Indexing Terms
Chiropractic, Applied Kinesiology, Manual Muscle Testing, Grip Strength, Dynamometer, Cervical Spine Manipulation

Introduction

Chiropractic has become a trusted, safe and effective treatment for disorders of the cervical spine and the upper extremities[1, 2]. Other studies have investigated the peripheral effects of chiropractic manipulation[6-15], and some have shown that chiropractic manipulation can result in increased joint position and strength[6-9], but none have investigated the effects of a chiropractic manipulation after using manual muscle testing to help determine the need and location of treatment. Manual muscle testing has been used in many different techniques to help diagnose and determine the appropriate method of treatment. In Applied Kinesiology, dysfunction of the cervical spine can be detected when a person's wrist extensor is determined to be conditionally inhibited and strengthens after contralateral rotation of the neck.[5, 5]

Objective

Very few studies have been performed that investigate the effects of chiropractic treatment on grip strength and some studies show that intervention decreases strength.[10] In this study, data was collected to determine if chiropractic adjustments are an effective treatment in the cervical spine and throughout the body, if manual muscle testing can be used to more accurately direct treatment of a chiropractic adjustment, and to see if grip strength can be used as an indicator of a successful treatment.

Method

Data was collected in this study from patients' treatment notes. These patients presented for routine visits at a chiropractic office with no deviation from a typical office visit. Patients were included in this study when, during treatment, it was determined that the patient had dysfunction of the cervical spine through manual muscle testing. Dysfunction of the cervical spine was detected when a patient demonstrated a weak wrist extensor, regardless of hand dominance, that strengthened after contralateral cervical rotation.

Grip strength was measured with a Camry electronic hand dynamometer, model EH101, that was recalibrated at the beginning of each measurement.

To increase statistical significance, at least 32 people were evaluated from each group: male control group; female control group; male cervical spine adjustment group; female cervical spine adjustment group; male full adjustment group; and female full adjustment group. Due to the

demographics of the clinic, the sample size had more females than males in each subgroup: control; cervical spine adjustment group; and full adjustment group.

Pre-treatment grip strength was measured on the side of the cervical spine that was determined to be dysfunctional through manual muscle testing before any treatment was applied. In the treatment groups, post-treatment grip strength was measured after a cervical spine chiropractic adjustment only or full chiropractic treatment, that included wherever the doctor determined it necessary to adjust. This full chiropractic treatment was directed by a diagnosis made by history, physical exam, imaging, palpation and through manual muscle testing. In the control group, the post-treatment grip strength was measured after waiting in the treatment room, usually prone with hot packs on the patient's back or while seated, for 5-10 minutes.

The control was chosen to determine if any increase in grip strength could be due to learning how to use the dynamometer after multiple uses. By recording a measurement before treatment and then after 5-10 minutes, while waiting for the doctor to return for treatment, it gave the patient repeated opportunities to use the dynamometer, while giving him/her enough time to rest to avoid repeated use fatigue.

The full treatment included any area determined to be dysfunctional in the cervical, thoracic, or lumbar spine, any joints of the upper or lower extremity, any soft tissue restrictions, or any cranial motion restrictions. The adjustments typically used in the cervical spine were a cervical break or long axis traction. The typical adjustments used in the upper thoracic spine were standing cervicothoracic adjustments, combo moves, bench TM or Maigne's adjustments. The typical adjustments used in the lower thoracic spine were Maigne's adjustment or standing thoracolumbar adjustments. The typical adjustments used in the lumbosacral spine were side posture adjustments or pelvic blocks.

Occasionally during the treatment, the grip strength was measured but it was later determined that additional treatment was needed. In these instances, the measurement taken after additional treatment was the one that was recorded and used in this study.

The grip strength was measured on a calibrated dynamometer. The patients were instructed to hold the device comfortably and then squeeze as hard as possible.

Statistics were analyzed to determine: the average change in grip strength, in kilograms (pounds) and in percent change; the standard deviation; and the p value.

Results

The group that was given a full treatment was made up of 67 females and 38 males.

After the full treatment the females had an average increase in grip strength of 3.48 kg (7.67 pounds) and with a standard deviation of 2.64 kg (5.82 pounds) and 17.19% and a p value < 0.001.

After the full treatment the males had an average increase in grip strength of 4.54 kg (10.00 pounds) and 12.12% with a standard deviation of 3.81 kg (8.41 pounds) and 9.57% and p value of < 0.001.

The group that was only given a chiropractic manipulation of the cervical spine was made up of 42 females and 33 males.

After the cervical spine only treatment the females had an average increase in grip strength of 2.44 kg (5.38 pounds) and 11.91% with a standard deviation of 2.42 kg (5.33 pounds) and 12.53% and a p value < 0.001.

After the cervical spine only treatment the males had an average increase in grip strength of 4.45 kg (9.82 pounds) and 13.08% with a standard deviation of 3.92 kg (8.65 pounds) and 13.79% and p value of < 0.001.

The control group was made up of 32 people, 22 women and 10 men, and did not show a statistically significant difference in grip strength and had an average increase of 0.06 kg (0.14 pounds) and average decrease of 0.39% with a standard deviation of 5.53lbs and 9.27% and a p value of 0.89.

Discussion

The overall results of this study show that both a cervical spine adjustment and a full spine adjustment significantly increase the grip strength, while the control group showed that there is no statistically significant improvement in grip strength. These results suggest that chiropractic adjustments are an effective treatment of the cervical spine, manual muscle testing can be used to determine the location to apply treatment to improve the function of the cervical spine, and grip strength can be a valid tool to determine the effectiveness of an adjustment.

The lack of statistical significance in the control group suggests that the method of control is an adequate way to create a control group for the use of a dynamometer in the measurement of grip strength. There was a similar amount of time between both the treatment groups and the control group, which would suggest that any statistically significant finding has to do with factors other than the repeated use of the dynamometer. The major drawback to this method is that, due to the clinical setting, the time the patient spent waiting between pre and post grip strength measurements could have been longer than the time spent between pre and post grip strength measurements in the treatment groups.

The p values in the full treatment and cervical spine only treatment, in both males and females, were all below 0.001. This suggests that the cause of the increase in grip strength is because of the treatment that was administered. The use of manual muscle testing was used in this study and not in Molouki, 2016, and suggests that manual muscle testing is beneficial in determining the location that the chiropractic treatment is applied.

The increase in post treatment strength was greater in the males than the females in kilograms (pounds), but not always in the percent increase in strength.

In the full treatment there was an increase in grip strength of 3.48 kg (7.67 pounds) in females and 4.54 kg (10.00 pounds) in males with a percent increase of strength of 18.71% in the females and 12.12% in males. In this group the males had a larger increase in strength, but females had a larger percent increase in grip strength.

In the cervical spine only group there was an increase in grip strength of 2.44 kg (5.38 pounds) in females and 4.45 kg (9.82 pounds) in males with a percent increase of strength of 11.91% in females and 13.08% in males. In this group the males had a larger increase in strength and a larger percent increase in strength.

In some of the groups the grip strength improved more in the full treatment group than in the cervical spine only group. However, the standard deviation was always higher in the group that had the larger increase in strength. In the female group the findings suggests that treatment of the entire body would be better for the patient but in the male group the findings suggests that treatment of the cervical would be better for the patient. Since the results do not show a consensus, but there is improvement in both groups, it does not suggest that treatment of only the cervical spine or treatment of the whole body is superior but does suggest that treatment is beneficial.

Although the control group rules out the theory that repeated use of the grip strength dynamometer could increase the patient's strength, it does not rule out that other parts of the chiropractic adjustment could have helped contribute to the overall increase in grip strength.

Conclusion

This study concludes chiropractic adjustments are an effective treatment in the cervical spine and throughout the body, manual muscle testing can be used to more accurately direct treatment of a chiropractic adjustment, and grip strength can be used as an indicator of successful chiropractic treatment. In the control group, there was no statistically significant change in pre and post grip strength. However, after both a full treatment or only chiropractic manipulation of the cervical spine, there was a statistically significant increase in pre and post grip strength. More studies should be done to investigate if muscle testing and grip strength can be used as valid tools to determine dysfunction of the spine and extremities and the need for chiropractic treatment.

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Resolution of Adhesive Capsulitis (Frozen Shoulder) Following Chiropractic Care and Applied Kinesiology (AK): A Case Study

Adam S. McBride, B.S., D.C.

Abstract

Objective:
The objective was to determine the effect of chiropractic care and Applied Kinesiology (AK) techniques to provide relief and range of motion restoration of the effects of right frozen shoulder syndrome.

Clinical Features:
A 30-year-old male patient presented with complaints of chronic right shoulder pain that radiated into his right upper trapezius from surfing.

Intervention and Outcomes:
AK based techniques were utilized to in the areas of vertebral subluxation to help decrease the discomfort associated with the patient's right frozen shoulder. Manual muscle testing (MMT) was also used to determine proper facilitation of reactive muscle testing. After two visits utilizing chiropractic care and AK based techniques, the patient's shoulder pain had subsided his range of motion was restored.

Conclusions:
This case report exemplifies a combination approach of care to a patient with adhesive capsulitis with a resolution of symptoms and a return to activity in a manner of 2 visits. A combination of chiropractic care benefitted the patient by use of AK based analysis through global MMT, and also while working with chief complaints allowed the patient to return to surfing in a relatively quick manner. However, research involving one or two specific techniques would benefit to know the true potential of care involving the area of complaints.

Key Indexing Terms:
Applied Kinesiology, frozen shoulder, chiropractic, adhesive capsulitis, manual muscle testing

Introduction

Frozen shoulder syndrome (FSS) is a common condition presenting to a variety of health care practitioners including chiropractors, osteopaths, medical doctors, and physical therapists. Also referred to as *adhesive capsulitis*, FSS remains one of the most poorly understood shoulder conditions,[1] with its etiology and pathogenesis largely disputed.[2] Recently, a consensus definition of FSS was reached by the American Shoulder and Elbow Surgeons to be "a condition characterized by functional restriction of both active and passive shoulder motion for which radiographs of the glenohumeral joint are essentially unremarkable.…"[1] The prevalence of FSS is thought to be 2% to 5% of the general population.[2,3] Primary (idiopathic) FSS may be defined as idiopathic shoulder pain of at least one month duration accompanied by increasingly severe limitation of active and passive glenohumeral movements in all ranges of motion in persons who have no identifiable general illness and whose radiographs are entirely normal.[4] Secondary FS is clinically indistinguishable from primary FS, however in secondary FS, an identifiable disorder such as a rhematological or neurological disease is present[5] or other potential predisposing factors. Patients with systemic diseases such as thyroid diseases [6,7] and Parkinson's disease[8] are at higher risk. Secondary adhesive capsulitis can occur after shoulder injuries or immobilization (e.g. rotator cuff tendon tear, sub-acromial impingement, biceps tenosynovitis and calcific tendonitis). These patients develop pain from the shoulder pathology, leading to reduced movement in that shoulder and thus developing frozen shoulder.[9] Frozen shoulder often progresses in three stages: the freezing (painful), frozen (adhesive) and thawing phases. In the freezing stage, which lasts about 2–9 months, there is a gradual onset of diffuse, severe shoulder pain that typically worsens at night. The pain will begin to subside during the frozen stage with a characteristic progressive loss of glenohumeral flexion, abduction, internal rotation and external rotation. This stage can last for 4–12 months. During the thawing stage, the patient experiences a gradual return of range of motion that takes about 5–26 months to complete.[10,11] Although adhesive capsulitis is often self-limiting, usually resolving in 1–3 years,[12] it can persist, presenting symptoms that are commonly mild; pain is the most common complaint.[13,14]

The purpose of this paper is to describe Applied Kinesiology (AK) interventions for the management of a patient with right FSS. Future research is needed to determine which protocols will be most effective for different populations and multiple types of FSS, as well as what long term effects AK and AK-based treatments may have on patients. It should be noted that only short-term effects were assessed, and it is still unclear what long-term effects AK may have on adults with FSS.

Case Report

Patient History

The patient was a 30-year old male presenting with right shoulder pain that radiated into the right upper trapezius area. The mechanism of injury reported was due to surfing activities. The symptoms began 1-month prior to the initial visit. On the initial digital pain drawing paper given to the patient, he indicated a circle around her back right upper trapezius. The description of the timing of the pain in the office paperwork said that the patient was experiencing this pain "Intermittently" (0-25% of the day). The nature of the symptoms was described as a "sharp pain"

that was not changing. The patient at the time of the appointment was reporting the pain to be about a 3/10, "10" being the worst amount of pain possible. At its worst, a 4/10 pain, and 0/10 pain at its best. The patient had also described that his symptoms were being made worse by reaching as well as laterally flexing his neck to the left. The patient reported his symptoms to be relieved by rest and stretching. The patient considered his overall health to be considered "very good". The patient had previously had chiropractic treatment 3-4 years previous to this appointment from another doctor, but it was only for wellness based care. The patient also noted previous scar tissue within the nasal passages from being previously punched in the nose from a fight, and this was further impacted by a deviated septum. The only significant family medical history was mentioned on the initial intake form was that there was alcoholism and depression throughout the patient's family.

Initial Vital Examination
The patient's height and weight were measured, with the patient weighing in at 175 lbs at 6'0. The patient's blood pressure was taken, and was recorded at 135/76 mmHg and had a resting pulse of 66 beats per minute.

Chiropractic Examination
The patient came in on November 2, 2022 for the chiropractic evaluation and treatment. No advanced imagining was taken on the first visit.

Postural Exam
Upon doing a posture exam, the patient was revealed to have a slightly elevated right head tilt, a high right shoulder, as well as an elevated right hip. There was also slight a right foot pronation as well as an internally rotated shoulder on the left arm.

Range of Motion Exams
The patient did not have any range of motion issues or limitations based on cervical and lumbar examinations.

Orthopedic Exams- Shoulder
The patient had a positive Mazion's Shoulder Maneuver test regarding the right shoulder. This indicated localized pain in the right glenohumeral joint.[15,16] The patient also had a positive Right Apley's Scratch test. In Apley scratch test, patient is asked to put his/her arm above head and arrive at behind the neckline to touch his/her upper back. This test analyzes the rotation of upward, external and elevation.[17] During physical examination if the patient is having severe pain, then the physical assessment is marked positive. Previous researches showed that the ROM (range of motion) and Apley scratch test are good for diagnosing frozen shoulder.[18]

Motion Palpation
Upon spinal examination, there was noted myalgia and myospasm on the left C1 vertebrae, right C5 vertebrae, L1 on the right, L5 on the left. The C1 vertebra noted to have a "lateralization" to the left while the C5 vertebra was noted as a C5 "vertebral body right". The L5 spinous process was noted to be posterior, right, inferior, or what Diversified protocol determines as a PRI-M "listing". There also were restrictions of extension noticed in the thoracic vertebrae of T4-T6 and T8-10.

Techniques Utilized in Care Practice

Applied Kinesiology (AK) Muscle Testing

One of the main ways that the patient was evaluated during treatment was by means of Manual Muscle Testing (MMT)/Applied Kinesiology (AK) analysis. Within the chiropractic profession, the ICAK has established an operational definition for the use of the MMT: "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" [19]

This technique was well utilized in the care of this patient for the treatments regarding a need for chiropractic adjustments/manipulations, sacro-occipital technique (SOT) blocking needs, ocular lock technique, nutritional testing, soft tissue care, acupuncture meridian therapies, Therapy Localization (TL) of care, and Ileocecal Valve (ICV) functioning.

Quantum Neurology (QN)

Quantum Neurology® Rehabilitation is a method of exercising and strengthening the Nervous System. This is done by incorporating neurological activation, physical mobilization, and light therapy. Using a patented system of evaluation and correction, it enables the practitioner to find hidden neurological weaknesses in the body. Specific techniques allow practitioners to activate the Nervous System's innate healing power so that the body can heal itself.[20] This technique was used in evaluating and treating various myotomes and cranial nerves and their associated inhibitory muscle tests.

Diversified Technique

Spinal manipulation is a passive and rapid movement of a joint beyond its active and passive limit of movement, but remaining within the limit of the joint's anatomical integrity. This patient received one to two dynamic thrusts, applied with high velocity low amplitude force, directed at one or more restricted lumbar, thoracic or cervical spine segments. This approach to manipulation is commonly referred to as diversified technique.[21] This technique was well utilized in the correction of adjusting specific segments of the spine and pelvis.

Chiropractic and AK Treatment
The patient was seen for a total of 2 visits of the time period from November 2nd, 2022 to November 8th, 2022. After the initial exams were conducted, the doctor did the initial chiropractic analysis on the first visit as well.

Upon the first visit, November 2nd, 2022 the doctor evaluated and adjusted based on AK analysis in a standing position by using the right deltoid muscles as a group evaluating the patient in a head forward and cervical flexion position, and it was determined to do a standing first thoracic (T1) adjustment. This was done by having the patient place his feet together, arms out horizontally and bilaterally to each side, and then the doctor placing their hands interlocked underneath the patient's arms and hands on the back of his neck. This was followed by the patient placing their hands on the doctor's interlocked hands, followed by the patient taking a deep inspiration and expiration, while slouching back into the supporting knee of the doctor and then the doctor would do a manual "traction" of the cervico-thoracic junction area. The right deltoid muscle group was retested and shown to be facilitated.

The doctor also performed Primary Atlas Technique (PAT)[22] and AK analysis and it was determined that the left C1 segment had shifted laterally. This was adjusted in a supine position via a rotary Diversified chiropractic high velocity-low amplitude (HVLA) adjusting in a superior to inferior and lateral to medial line of drive with an 2nd digit (index finger) contact. The 5th cervical vertebrae (C5) was also found via therapy localization (TL) with the patient contacting the vertebrae to have a "vertebral body right" rotation malposition, which was also adjusted via a rotary Diversified chiropractic high velocity-low amplitude (HVLA) adjusting C5 from right to left, counterclockwise with the head in slight flexion.

In addition to the cervical spine segments being adjusted, the Lovett Reactor vertebrae[23] of L5 and L1 in the lumbar spine were also adjusted in side posture lying stance using HVLA as well.

The patient was evaluated and treated based on findings from an inhibited muscle test via the Quantum Neurology (QN) model of analysis. The pubic bone was checked first. This was performed by the patient laying supine on the table with the knees bent, feet together while flat on the table. The doctor placed the hands on the patient's distal femur heads, and the patient was instructed to approximate the knees while the doctor resisted. There was a failure/inhibition of the knees to approximate. The patient then TL'ed each side of the pubic bone, and it was determined that the patient had a superior left pubic bone. This was corrected with the use of an Activator™instrument adjusting tool[24] with a line of drive of Superior to inferior on a superior pubic bone contact while a GRT™red light was placed at level of the patient's brainstem. The muscle test was rechecked and showed a facilitation of the initial pubic bone test. The S1 myotome aka the peroneus tertius was also tested bilaterally, and shown to have an inhibition on the left foot. This was corrected with the doctor's hands placing pressure on the patient's left inguinal ligament and then a re-testing showed a facilitation of the peroneus terius. This was also determined to showing a right sided rectus femoris inhibition on the right side, and was corrected with firm pressure applied to the space at 2" above and 1" lateral to the umbilicus. This was also shown to facilitate upon testing the muscle post-treatment.

The doctor also checked the patient's ileocecal valve (ICV)[22], and it was determined that the patient showed having an "Open" ICV. This was shown by testing a strong indicator muscle, in this case the right pectoralis major-clavicular (PMC) division, and then having the patient TL the right lower quadrant of the abdomen just 1-2" above the right anterior superior iliac spine with his fist. This showed an inhibited PMC muscle. The test was then "challenged" by having the patient pull the right lower quadrant abdominal tissue superior and medial towards the left shoulder, which did facilitate the PMC muscle. This was also further confirmed showing an inhibition of the right iliacus muscle. From there, the various points addressed were the Bladder 58 acupuncture meridian point on the left, which is on the posterior border of the fibula; Kidney 4/5, which is posterior and inferior to the medial malleolus, in the depression medial to the attachment of the tendon of the calcaneus. This was also corrected with firm pressure within the patient's right bicipital groove and over the lamina of the C3 vertebrae on the right. Following all of that treatment, the patient re-TL'ed the ICV and the PMC showed strengthening as well as the right iliacus muscle.

The patient also showed to have a right hyoid dysfunction as well, specifically his right omohyoid. This was tested by using the bilateral PMC muscles as indicator muscles, and then having the patient protrude the tongue out of his mouth, which showed an inhibition of the bilateral PMC muscles. This was then examined by moving the patient's hyoid bone in various directions to stretch the muscles and testing a previously strong indicator muscle for weakening. It is assumed that a positive test is due to neuromuscular spindle cell dysfunction in the muscle being stretched.[22] technique. When positive, the doctor evaluated the muscle being stretched with accurate (TL) by having the patient therapy localize to the muscle with the tip of his index finger, the area of dysfunction. The treatment was then directed to the neuromuscular spindle cell to push its ends together. The bilateral PMC muscles were then re-tested with the patient protruding his tongue showing a facilitation and no longer needing any treatment on the hyoid muscles.

The patient's pulse points were also checked as part of AK diagnosis. This test was performed by using the Rectus Femoris muscle as an indicator muscle, and then having the patient contact/TL the various pulse points until there was an inhibition of the muscle noted. It was determined that he had a right-distal wrist crease point show up as an inhibited muscle test, indicating the most deficient meridian, which in Chinese medicine is designated as a "Metal Element" point. The metal element related muscle that was checked was the tensor fascia latae (TFL) on the left side. This was correlated by the patient TL'ing the "alarm point" for the TFL which is 1.5" lateral to the patient's umbilicus on each side of the abdomen, which facilitated the previously inhibited TFL. The doctor also held contact at the "tonification" point of Large Intestine 11 (LI11). LI11 is a point located at the elbow, which is located at the end of the crease on the outer side of the bent elbow.[25] The doctor then retested the original left TFL muscle and there was a facilitation of the muscle.

The patient was also adjusted prone on the T4-T6 as well as T8-10 vertebrae since they were also TL'ed and shown to have inhibition using the hamstrings as a group as an indicator muscle. This was also confirmed via bilateral teres major muscle testing showing fixations[22] in these various areas.

The patient was also noted to have a left Category (CAT I) listing[22] with a confirmation of both his hands being placed on the left SI joint testing his left hamstring showing an inhibition. This was also confirmed with his left piriformis inhibiting upon being in a quadruped position. This

was corrected with the patient prone, using blocks placed at the right ASIS and the left greater trochanter. This strengthened/facilitated the hamstring response, and the patient was left on these blocks for about 2 minutes until the hamstring was retested, showing a titration point where there was an inhibition and showing no more work was needed.

The second and final visit took place on November 8th, 2022 with the patient having no pain in the right shoulder, but only some minor discomfort in the lower back. The doctor used PAT and found a right lateralization of the C1 vertebrae, which was adjusted supine via a rotary Diversified chiropractic high velocity-low amplitude (HVLA) adjusting in a superior to inferior and lateral to medial line of drive with an 2nd digit (index finger) contact.

The doctor also checked the patient's ileocecal valve (ICV)[22], and it was determined that the patient showed having an "Open" ICV. It was corrected in the same manner as the first visit.

This patient once again had a "Metal element" distal wrist crease pulse point identified, which corresponded to an inhibited left TFL muscle, and was treated by holding the LI 11 point until a pulse was found on the left elbow crease, and the left TFL muscle was facilitated.

The patient was also shown to have a CAT I listing on the left side once again, and was treated in the same manner as the first visit.

Chiropractic/AK Outcomes

SOAP (Subjective Objective Assessment Plan) notes were taken as a daily record keeping procedure to monitor patient progress. The notes explained the basic procedures mentioned on each subsequent visit and what was found upon chiropractic examination and what was adjusted or worked on with QN and AK therapies.

Upon conclusion of the 2nd and last visit of the patient, he had reported that his right shoulder pain had totally dissipated and was able to perform Apley's Scratch test and Mazion's test with no discomfort in the shoulder, and he was also able to lift furniture and surf in the 6 days between visits. The patient had mentioned that the incorporation of QN and AK treatments of the right shoulder from visit 1 had made a big difference in the recovery of the right shoulder.

Discussion

The aim of this study was to determine the effect of several different AK based techniques with chiropractic care on decreasing the frequency and duration of shoulder pain this patient had experienced over the last month when surfing. In this case report, the right frozen shoulder discomfort he had been experiencing was likely being caused because of overall body joint mechanics that made the right shoulder, specifically the humerus bone, compensate for the lack of overall motion and subsequent pain he was experiencing.

In this particular case study, the patient responded rapidly with conservative AK and AK-based therapies addressing the entire body since the patient reported the mechanism of injury initially started from surfing. These symptoms were only present for a 1-month duration, so long-term

effects were not noted. The evaluation on the follow up appointment also showed that he had no range of motion issues including negative tests of both Mazion's test and Apley's scratch test on the right. This could indicate that it was more of an acute-based injury and that there was overall postural distortion causing shoulder compensation.

In other types of treatments for FSS, there is a tendency to rely upon injections and/or physical/physiotherapy to aide in the recovery. Based on the available evidence, it appears that the use of an Intra-articular (IA) corticosteroid injections for patients with frozen shoulder of duration less than 1 year is associated with greater benefits compared with all other interventions, and its benefits may last as long as 6 months.[26] This has important treatment ramifications for the general and specialist musculoskeletal practitioner, providing them with an accessible, cost-effective,[27] and evidence-based treatment to supplement exercise regimes, which is anticipated will inform national guidelines on frozen shoulder treatments moving forward.

In the short-term, IA corticosteroid appeared to be associated with better outcomes compared with no treatment in all outcome measures. Adding arthrographic distension to IA corticosteroid may be associated with positive effects that last at least as long as 12 weeks compared with IA corticosteroid alone; however, these benefits are probably not clinically significant. Compared with physiotherapy, IA corticosteroid seemed to be associated with better outcomes, with clinically significant differences. Combination therapy with IA corticosteroid plus physiotherapy may be associated with significant benefits compared with IA corticosteroid alone or physiotherapy alone for ER ROM and function, respectively, at 6 weeks.[25]

Because of the paucity of robust evidence, no firm recommendations exist for clinical practice. The National Institute of Health and Care Excellence (NICE) guidelines,[28] influenced in turn by the BESS/BOA recommendations, recommend a stepped approach, starting with physiotherapy and only considering IA corticosteroid if there is no, or slow, progress.

Many treatments are available for frozen shoulder including both operative and non-operative. Operative procedures include manipulation under anesthesia and arthroscopic surgeries. Surgery reduces the severe complications of frozen shoulder. Non-operative includes pain management through different modalities (Transcutaneous electrical nerve stimulation, Short wave diathermy, Interferential therapy etc.), mobilization techniques, exercise plan and precautionary measures. All treatments just improve the functional time to recovery and increase the range of motion.[29] However, none of the treatment is authentic to totally eliminate the future chance of disease.

Physical examinations are generally considered low-cost process and results can directly be obtained at the time of the consultation. On the other hand, precision is based upon doctor's knowledge and practice. Now a day's frozen shoulder is diagnosed by clinical examination and imaging tests.[30] Firstly doctor diagnoses the problem by asking the patient to rotate the shoulder in a different direction. If physicians are uncertain about the problem, then formal test such as magnetic resonance imaging (MRI) can be carried out for diagnosis. Arthography is considered a standard test for the diagnosis of a frozen shoulder. It is having sensitivity 91 %, specificity 100 % and accuracy 92 %, but the test is an expensive and painful process.[31]

As part of this case study, there was no advanced imaging taken due to the acute onset of the FSS symptoms as well as the patient's fast response to care. There was also not a need for advanced

imaging from a cost-perspective benefit for the patient as well. There is no existing fact, that any solitary check can diagnose a frozen shoulder problem.[32] Cost-effective treatment process is always dependent upon proper clinical assessment and diagnosis. The severity of the disease can be judged best by imaging tests as compared to clinical examination. According to the recent researches, if we make decision just on the basis of physical examination, it has sure chances that to give us false-positive ratio. Analysis made on the basis of physical examination always conflict with the imaging test. Due to this, we cannot make any decision just on the basis of clinical examination.[30]

Physiotherapy is widely adopted as an initial treatment in many shoulder conditions including FS.[33,34] Physiotherapy should include an exercise program that can restore shoulder motion. The patient should be placed on an exercise program with the goal of regaining and maintaining motion. Patients receiving exercise therapy should begin an active assisted ROM exercise program as well as gentle passive stretching exercises including forward elevation, internal and external rotation, and cross body adduction. These exercises should be performed five to six times per day. And it is important to perform multiple 5- to 10-minute sessions per day as the shoulder will become stiff again in the time between sessions.[35]

Many studies have demonstrated physiotherapy as an adjunctive intervention that provides good results. NSAIDs were proven to be more effective when used in combination with physiotherapy as compared to NSAIDs alone.[36] Similarly, steroid injection used in combination with physiotherapy resulted in better outcomes compared to injection alone.[37,38]

Despite the self-limited natural history of the disease, some patients fail to achieve desired outcomes with non-xoperative management.[11,39,40] Factors that influence the decision on surgical management include severity and duration of symptoms as well as response to conservative treatment.[39,41] General indications for surgery are persistent pain and limited motion despite a minimum 3 to 6 months of non-operative management including medication, local injections, or physiotherapy.[11,29,40] Levine et al.[42] reported that patients with more severe initial symptoms, younger age at the time of onset, and reduction in motion despite 4 months of compliance with therapy are most likely to require surgery.

Another potential treatment for addressing FSS is Manipulation under Anesthesia (MUA). MUA involves passive tearing of the thickened inflamed capsule and contracted ligaments. It is mainly performed under general anesthesia; however, recent development of ultrasound technology enabled it with brachial plexus or cervical nerve root block.[43,44] Magnetic resonance imaging after MUA shows capsular tears (midsubstance and humeral avulsion of glenohumeral ligaments), labral tears, or bone bruises of the humeral head.[44] And arthroscopic findings of post-MUA include hemarthrosis, tearing of the joint capsule or rotator cuff, superior labrum from anterior to posterior tear lesion, labral tear, middle glenohumeral ligament rupture. Even though the optimal timing of MUA has not yet been determined, Vastamaki et al.[45] suggested that if conservative management failed, the best time for MUA might be between 6 and 9 months from the onset of the symptom. They believed that too early manipulation (before 6 months after the onset of symptom) may lead to a recurrence because the disease is still at the inflammation stage.[45] MUA has been used extensively with satisfactory short- and long-term results. This particular case study also did not have a use for MUA regarding the patient.

There is presently very little evidence to support chiropractic management of FSS. Murphy et. al[46] reported that that the OTZ Tension Adjustment restores normal function of C0-C1, trapezius, and SCM, thereby restoring normal glenohumeral mechanics, improving shoulder ROM, and reducing pain on elevation of the arm. It has been previously shown that some shoulder complaints resolve after practitioner-applied manipulation.[47-54], However, with regard to the efficacy of chiropractic adjustments specifically for shoulder complaints, the current evidence is limited,[55] consisting of one small pilot study,[56] a qualitative study,[57] and a number of case reports,[55,58-60](such as this one).

In AK based treatments of evaluation, it appears that the subclavius muscle is important in rotating the clavicle. In many cases of "frozen shoulder," great improvement can be made by treating the subclavius muscle.[61] Since the subclavius muscle cannot be directly tested, it must be evaluated by observation of clavicle movement and therapy localization over the muscle. Treatment of the subclavius muscle is usually directed to the neuromuscular spindle cells, Golgi tendon organ, or origin/insertion. The digital pressure applied must be rather heavy to contact as much of the muscle as possible.[22] This was not addressed in this particular case study, but serves as a good indicator for future studies.

Conclusion

This case study describes several AK based therapies for the treatment of frozen shoulder syndrome (FSS). It's applicability to other patients with similar conditions should be explored. More research is needed on the subject of AK care-based therapies with chiropractic for the treatment of frozen shoulder. Specifically, focusing on one individual technique in the treatment of FSS or limited shoulder mobility for further research would be best.

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Resolution of Epigastric Pain & Chronic Hiccups Following Chiropractic Care, Applied Kinesiology (AK) and related techniques: A Case Study

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Abstract

Objective:
The objective was to determine the effect of Applied Kinesiology (AK) and complimentary neurological based techniques to provide relief of the effects of chronic hiccups.

Clinical Features:
A 73-year-old man presented with complaints of chronic hiccups ongoing for 1 year with concurrent pain in the epigastric region of his chest which radiated into the cervico-thoracic junction. This was also further complicated by weight loss and extreme fatigue noted by the patient.

Intervention and Outcomes:
Multiple AK based techniques were utilized to in the areas of vertebral subluxation to help decrease the frequency and duration of the hiccups and discomfort associated with them. Nutritional manual muscle testing (MMT) was also used to determine proper facilitation of reactive muscle testing. After seven visits utilizing chiropractic care, nutritional testing and AK based techniques, the patient's hiccups had subsided and resolved.

Conclusions:
This case report exemplifies a combination approach of care to a patient with epigastric pain with chronic hiccups with a resolution of symptoms and a return to activity in a manner of seven visits. A combination of techniques benefitted the patient by use of AK based analysis of vertebral subluxations, and also while working with chief complaints allowed the patient to return to activities of daily living in a relatively quick manner. However, research involving one or two specific techniques would benefit to know the true potential of care involving the area of complaints.

Key Indexing Terms:
Applied Kinesiology, hiccups, chiropractic, nutritional testing, manual muscle testing (MMT)

Introduction

Hiccups are understood by most people, but are still a poorly understood phenomenon caused by involuntary, repetitive contractions of the diaphragm and, in many cases, the intercostal muscles. The medical term for this condition is 'Singultus', which can be translated from Latin as 'to be caught in the act of sobbing'. The coordinated contraction of the inspiratory musculature leads to a rapid intake of air that is, within a few milliseconds, interrupted by closure of the glottis. It is this that results in the characteristic sound, the 'hic' in hiccups, between 4 and 60 times a minute.[1] The classification of hiccups is based on their duration. An acute attack lasts less than forty-eight hours. Persistent hiccups last more than 2 days. Intractable hiccups are present if the attack lasts more than 1 month. Persistent hiccups are most likely to be associated with an underlying pathological, anatomic or organic disease process.[3] Intractable hiccups that continue for more than 1 month are usually indicative of a serious organic disturbance.[4] If left untreated, intractable hiccups can cause severe discomfort, depression, reduced physical strength, and even death.[5]

According to a report by William H. Dobelle, approximately 4000 hospital admissions are due to hiccups are reported each year in the United States.[6] The intractable hiccups are more common in men (82%) than in women. Most of the men suffering from hiccups are 50 years of age or older.[2] Psychogenic hiccups have been reported to occur more commonly in women. The usual rate for hiccups is four to sixty per minute with fairly constant frequency in an individual.[7] Pathological hiccups can be explained as a form of epilepsy or a failure of supra-spinal inhibition.[8]

Pathophysiology

The central component is located in the periaque-ductal grey, subthalamic nuclei among the brain stem respiratory center, phrenic nerve nuclei, reticular formation and hypothalamus.[9] The central component for hiccups lies in the medulla and is thought to be entirely separate from the pathways involved in rhythmic breathing.[10] Dopamine, gamma-amino-butyric-acid (GABA), serotonin, glutamate, and glycine neurotransmitters can regulate this central mechanism. The hiccup arc has modulatory input from catecholaminergic and serotonergic afferents.

The release of 5-hydroxyl-tryptamine (5HT) from the gut enterochromaffin cells and enteric vagal afferents may also lead to hiccups as seen in a case report following administration of cisplatinum, a chemotherapeutic agent.[11] The mental branch of the trigeminal nerve was also postulated to develop hiccups when stimulated via chin shaving.[12] Significant negative intrathoracic pressure may occur during hiccups that may result in hypotension, bradycardia, pneumomediastinum, and subcutaneous emphysema.[13] The mechanism of action of hiccups might be mediated through agonizing 5-HT1A and antagonizing 5-HT2A receptors to enhance the activity of the phrenic nerve, thereby inducing hiccups. This concept was supported in a case report in which quetiapine was successfully used to resolve the aripirazole-induced hiccups. This may suggest the partial agonist and relatively high 5-HT1A receptors binding affinities in the pathophysiology of hiccups.[14]

The most commonly used pharmacological treatments include metoclopramide which reduces the intensity of esophageal contraction, chlorpromazine,[15] baclofen, nifedipine which reverses the abnormal depolarization in the hiccups reflex, valproic acid that enhances GABA transmission centrally,[16] antipsychotics, glucagon, GABA analogue which acts by activating an inhibitory neurotransmitter, and dimethlamine derivative of phenothiazine which acts centrally by dopamine

blockade in the hypothalamus.[17] Baclofen (GABA-agonist) is among the substances that act through the nervous system and has by far the best ability to treat chronic hiccups.[18, 19, 20, 1] However, a Cochrane systemic review found insufficient evidence as to which pharmacological agent is best for hiccups.[21] Hiccups are the manifestation of diaphragmatic myoclonus and are considered to be a form of physiologic myoclonus.

It has been suggested that damage to the cervical cord, brainstem, hypothalamus, and supratentorial area precipitate hiccups by stimulating the hiccups reflex arc or decreasing the normal inhibition of hiccup neurons. It is suggested that all potentially successful therapeutic drugs used to treat hiccups either decrease the input from gastrointestinal tract (GIT) to the hiccups center or decrease the excitability and output from the hiccups center.[20 ,22]

The exact etiology of hiccups is unclear, and it is unknown why diverse drugs like dopamine blocking agents (DBA), baclofen, clonazepam, and phenytoin, which have widely varying mechanisms of action, can be effective in the treatment of hiccups.[23]

The purpose of this paper is to describe chiropractic and Applied Kinesiology (AK) based interventions for the management of a patient with epigastric pain stemming from chronic hiccups. Future research is needed to determine which protocols will be most effective for different populations and what types of hiccups complaints are being presented. It should be noted that only short-term effects were assessed, and it is still unclear what long-term effects AK-based therapies have on patients with chronic hiccups.

Case Report

Patient History

The patient was a 73-year old male presenting with chronic hiccups. The symptoms of the chronic hiccups began in February of 2022 suddenly and without provocation. This patient was also experiencing Gastroesophogeal Reflux Disease (GERD) symptoms alongside when having the hiccups. On the initial intake form, he indicated a circle over the chest with an emphasis on the epigastric region of where pain was present. The description of the timing of the pain in the online intake said that the patient was experiencing this pain was “Occasionally” (25-50% of the time). The nature of the symptoms was described as a “burning” and “tightness” that was not changing. The average intensity of the patient’s symptoms was between a 3 and 8 out of a possible 10, 1 being “mild” and 10 being “severe”. The Patient had also described the symptoms were being made worse by bending, especially leaning over to put on shoes, cold climate, and lifting/carrying anything. The symptoms only improved with rest and time. It should also be noted that the patient had seen several other doctors and had an abdominal CT scan in May of 2022 and an upper GI endoscopy on 10/24/22, both with negative results. The patient had been prescribed Ozemprazole and Rosuvastatin (Crestor) by his primary care physician, but only took the medication as needed. The patient had also noted that he had extreme fatigue, which had been constant for a period of at least 6 months. The patient’s sleep schedule was also severely affected with him waking up around 1:00 AM-3:00 AM to urinate. There were also complaints of hemorrhoids and some flatulence in the history. The patient had also noted that there were sinus issues to which that were attributed to sinusitis, which also the patient alluded to the labored breathing patterns. It is also noted that this condition caused the patient to slow down eating, and in a 6-month period the patient claimed to have lost 10 lbs.

Initial Vital Examination
The patient's height and weight were measured, with him weighing in at 145 lbs and standing at 5'9. The patient's blood pressure was also taken, and recorded at 140/104 mmHg and had a resting pulse of 70 beats per minute. The patient's forehead temperature was also recorded at 97.7ºF.

Chiropractic Examination
The patient's first initial appointment took place on Saturday, February 11th, 2023 for evaluation and treatment. No advanced imagery was taken on his first visit. There were no motor patterns within the cervical or thoracic spinal myotomes. The patient did have a decreased (1+) hyporeflexic response on the left biceps reflex test, indicative of the C5 nerve root. There was also a hyperesthesia noted on the right arm in the C8 dermatome region. Subluxation complexes were found at the base of the sacrum and at C1 on the left.

Postural Exam
Upon doing an initial standing posture exam, the patient revealed to have a high left head tilt, a high left shoulder, an elevated right hip crest, anterior head translation with a bit of thoracic kyphosis, and an externally rotated right foot.

Range of Motion Exams
The patient was noted to have restricted cervical extension with tight pain noted in the right upper cervical region with an 8/10 severity noted. The patient also noted having a tight pain discomfort upon performing left lateral cervical flexion, with pain being noted in his left mid-cervical region with an 8/10 severity. In addition, the patient also noted tight pain when performing left lateral flexion, especially noted in his left rib cage with an 8/10 severity.

Orthopedic Exams
Ely's Test on the left leg with some pain in the left quadriceps was rated as tight sensation in the left quadriceps with an 8/10 severity was noted on a prone examination of the patient. Hibb's Test on the left was also revealed to have pain in his left lower abdominal quadrant with it feeling a tight sensation and having a severity of 8/10. Palpatory findings on hip, leg, and low back musculature were determined on a visit-by-visit basis upon what was found and needed for AK-based therapies.

Motion Palpation
Upon spinal examination, there was noted myalgia and myospasm on the left C1 vertebrae, the right C5 vertebrae, the right L3 vertebrae, and the base of the sacrum. The C1 vertebrae was noted to have a "vertebral body left malposition" while the C5 was noted to have a "vertebral body right malposition". The right L3 was noted to be posterior, left, and inferior, or what Diversified Protocol determines a PLI-M "listing".

Techniques Utilized in Care Practice
There were several different techniques and strategies used in the care of this patient that were for his benefit to remove subluxations found and alleviate symptoms associated with the chief complaint of epigastric pain with chronic hiccups.
Applied Kinesiology (AK) Muscle Testing

One of the main ways that the patient was evaluated during treatment was by means of Manual Muscle Testing (MMT)/Applied Kinesiology (AK) analysis. Within the chiropractic profession, the ICAK has established an operational definition for the use of the MMT: "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" [24]

This technique was well utilized in the care of this patient for the treatments regarding a need for chiropractic adjustments/manipulations, sacro-occipital technique (SOT) category blocking needs, ocular lock technique, nutritional testing, soft tissue based care, acupuncture meridian therapies, pulse synchronizations, Therapy Localization (TL) of care, Ileocecal Valve (ICV) functioning, and any emotional-related stressors that pertained to neurovascular reflexes aka Bennett's Reflexes on the head.

Diversified Technique
Spinal manipulation is a passive and rapid movement of a joint beyond its active and passive limit of movement, but remaining within the limit of the joint's anatomical integrity. This patient received one to two dynamic thrusts, applied with high velocity low amplitude force, directed at one or more restricted lumbar, thoracic or cervical spine segments. This approach to manipulation is commonly referred to as diversified technique.[25] This technique was well utilized in the correction of adjusting specific segments of the spine and pelvis.

Quantum Neurology (QN)
Quantum Neurology® Rehabilitation is a method of exercising and strengthening the Nervous System. This is done by incorporating neurological activation, physical mobilization, and light therapy. Using a patented system of evaluation and correction, it enables the practitioner to find hidden neurological weaknesses in the body. Specific techniques allow practitioners to activate the Nervous System's innate healing power so that the body can heal itself.[26] This technique was used in evaluating and treating various myotomes and cranial nerves and their associated inhibitory muscle tests.

Neuro-Emotional Technique (NET)

Building upon these principles and incorporating several health disciplines, neuro-emotional technique (NET) was introduced by Dr. Scott Walker, who based it on the principle that the stressor effects of dormant and/or unresolved-issues-trauma are what determines the body's responses. These responses are relatively personalized to the conditioned, experiential and emotional reality of the individual. NET is defined as a multimodal stress reduction mindfulness-based intervention and was founded upon 3 essential concepts. (1) Cognitive behavioral psychology: sharing aspects in common with standard CBT for traumatic stress, in terms of exposure therapy, NET seeks the reversal or extinction of classically conditioned, distressing emotional responses to trauma-related stimuli, such as stress. (2) Traditional Chinese medicine: NET engages the energy system, in which a patient touches a pulse point that is determined to be involved in the body's stress reaction to a particular stimulus. The links between emotions and the meridian system have been expressed in acupuncture theory for 2000 years. Current concepts hold that tightness in the fascial system might represent acupoints and meridians in the human body. (3) Muscle testing: this feedback technique is believed to be an indicator of altered physiological function, in which a given muscle is less capable of resisting an outside force when there is some alteration in the function of the nervous system. Specifically, Walker proposed that the muscle test responds to cognitive and emotional stimuli.[27] This technique was well utilized in finding any underlying subtle subconscious physiological nervous system interferences with the patient's subjective nature in dealing with his various epigastric or hiccups discomfort.

Chiropractic and AK Treatment

This patient was seen for a total of 7 visits of the time period from February 11th, 2023 to March 14th, 2023. After the initial history taking and examinations were conducted, the doctor did initial chiropractic care and AK analysis on the first visit as well.

Upon the first visit, February 11th, 2023, the patient was evaluated and treated based on findings from an inhibited muscle test via the Quantum Neurology (QN) model of analysis with the cranial nerves. This was demonstrated in a seated position by testing the various motor and sensory examinations of individual cranial nerves and then noting whether an anterior-adducted straight arm push-down Manual muscle test (MMT) "weakened" or inhibited. This would be followed by "scanning" or contacting the body with fingers by the doctor down the surface of the spine while there was a straight arm MMT being applied with one arm until there was a secondary inhibition or "weakening" of the muscle test at a various segment of the spine contacted by the fingers of the practitioner. An appropriate analogy would be- finding the "short circuited" vertebral area/segment. From there the doctor would use a 2-pronged fork from a Hypervolt™ massage instrument on the bilateral sides of the spinous process segments of where the "short circuited" contacted vertebrae was found. This in clinical QN practice is usually corrected using an ArthroStim™ instrument, but the Hypervolt™ sufficed in this case. This was to provide a sensation of vibration that correlated with mechano-reception within brain centers that corresponded to the vertebrae found to inhibit the straight arm MMT. The same cranial nerve MMT would then be re-checked for "strengthening" or facilitation. This strategy of a technique was used on the right eye of Cranial Nerve (CN) II (optic nerve) by shining a pen light in each eye to measure pupillary contraction correlated with the MMT. For CN III/IV/VI (oculomotor/trochlear/abducens nerves) the doctor had the patient follow a pen with just his eye tracking and it was found that in the right lower corner there was an inhibition of the muscle test. For CN VII (facial nerve) the action of smiling inhibited the muscle test. For CN IX/X (glossopharyngeal/vagus nerves) the action of

swallowing inhibited the muscle test. And finally, for CN X (vagus nerve) the doctor used Valsalva's Manuever of taking a deep inspiration and bearing down, which also caused an inhibition of the muscle test. Each of these CN tests were corrected using the 2-pronged fork from a Hypervolt™ massage instrument on the bilateral sides of the spinous process segments that correlated with the specific CN inhibition from the muscle test and were retested for "strengthening" aka facilitation.

In addition to QN treatment, the doctor used AK analysis in a standing position by using the right deltoid muscles as a group evaluating the patient in a head forward and cervical flexion position, and it was determined to do a standing first thoracic (T1) adjustment. This was done by having the patient place his feet together, arms out horizontally and bilaterally to each side, and then the doctor placing their hands interlocked underneath the patient's arms and hands on the back of his neck. This was followed by the patient placing their hands on the doctor's interlocked hands, followed by the patient taking a deep inspiration and expiration, while slouching back into the supporting knee of the doctor and then the doctor would do a manual "traction" from inferior to superior of the cervico-thoracic junction area. The right deltoid muscle group was retested and shown to be facilitated.
The doctor also performed Ocular Lock Technique[28] from AK analysis and it was determined that the patient had a Base Posterior (BP) Sacrum due to the inhibition of a bilateral pectoralis major-clavicular (PMC) division muscle test with the patient's eyes looking directly inferior. Following this, the doctor then performed a side-posture push from superior to inferior on the intermediate sacral crest segment and then retested the ocular lock which showed a facilitation of the bilateral PMC muscles.

The doctor also performed Primary Atlas Technique (PAT)[28] and AK analysis and it was determined that the left C1 segment had shifted laterally. The doctor used an Activator™ instrument for the adjustment adjusting the segment from Left to right/lateral to medial. MMT was also used with Therapy Localization[28] (TL'ing) the C5 vertebrae, which was also adjusted by the Activator™instrument from posterior to inferior with a slight vector of right to left.

The doctor also checked the patient's ileocecal valve (ICV)[28], and it was determined that the patient had a "closed" or spastic ICV. This was determined by having the patient using a strong indicator muscle test of the right PMC, and placing his left hand in a closed fist position just 1" above his right Anterior Superior Iliac Spine (ASIS). Upon having the patient push the tissue of his right fist inferior and lateral towards his right hip, it was determined that the patient had a Closed ICV. This was also confirmed via testing the quadriceps as a group, and noting that the quadriceps had an inhibited muscle test as a group. This was corrected by first checking the nutrition by having the patient tasting the Standard Process™ supplement Choline, which facilitated the muscle test of the quadriceps as a group. The L3 vertebrae was also TL'ed while testing the quadriceps as a group and was corrected using a side posture adjustment while the patient laid on his left side. The doctor also applied light pressure to the bilateral Bladder 58 meridian point, which lies on the posterior aspect of the lower leg, behind the external malleolus, 7 cun directly above UB 60, 1 cun inferior and lateral to UB 57.[29] Upon retesting the original TL of the ICV, the patient's right PMC facilitated, and the quadriceps as a group also facilitated.

The patient's pulse points[28] were also checked as part of AK diagnosis. This test was performed by using the Rectus Femoris muscle as an indicator muscle, and then having the patient contact/TL

the various pulse points until there was an inhibition of the muscle noted. It was determined that he had a right-distal wrist crease point show up as an inhibited muscle test, indicating the most deficient meridian, which in Chinese medicine is designated as a "Metal Element" point. The metal element related muscle that was checked was the tensor fascia latae (TFL) on the left side. This was correlated by the patient TL'ing the "alarm point" for the TFL which is 1.5" lateral to the patient's umbilicus on each side of the abdomen, which facilitated the previously inhibited TFL. The patient also had lingual nutritional testing establish that there was a need for Standard Process™ Betaine Hydrochloride, which facilitated the muscle as well. In addition to this, the doctor also held the "tonification" point of Large Intestine 11 (LI11). LI11 is a point located at the elbow, which is located at the end of the crease on the outer side of the bent elbow.[29] The doctor then retested the original left TFL muscle and there was a facilitation of the muscle.

The doctor also noted a needed diversified prone adjustment on T8-T10 via TL'ing those areas, and it was used with a bilateral hypothenar contact with a line of drive of straight posterior to anterior. There was also a need for a Category 2[28] (CAT 2) SOT blocking procedure because the left side showed an inhibited straight arm supine arm-fossa test, which correlated with an inhibited left hamstring as well. The CAT 2 listing is usually considered a hypermobile sacroiliac joint. This was performed supine by having the patient pull the straight arm superiorly against the doctor's hand, while the patient was holding the inferior-medial part of the lower aspect of the inguinal ligament of the left side. It was corrected using 2 SOT blocks by placing one block underneath their left ischial tuberosity pointing 45º superior to the patient's right shoulder, and the other block just underneath the right posterior superior iliac spine (PSIS) and then rechecking the arm fossa test for facilitation. The patient laid on these blocks supine for about 2 minutes, and then the arm fossa test was rechecked for a "titration point" whereby the arm fossa test would inhibit, showing no more need for a block placement, and the blocks were removed.

The second visit took place on February 13th, 2023. The doctor used PAT and found a right lateralization of the C1 vertebrae, which was adjusted via a rotary Diversified chiropractic high velocity-low amplitude (HVLA) adjusting in a superior to inferior and lateral to medial line of drive with an 2nd digit (index finger) contact. A lateral left occiput was also noted using bilateral PMC muscle testing, with the patient protruding his tongue out to left indicating this finding, and was also adjusted via Diversified chiropractic technique with a contact at the left nuchal line of the occiput and having a superior to inferior line of drive with a fingertip contact.

The patient tested once again for a Closed ICV to which Choline again strengthened the response of the quadriceps muscles as a group. The patient was instructed to take 2 Choline tablets per day before sleep. The doctor again applied light pressure to the bilateral Bladder 58 meridian point, which lies on the posterior aspect of the lower leg, behind the external malleolus, 7 cun directly above UB 60, 1 cun inferior and lateral to UB 57 until a pulse was noticed. Upon retesting the original TL of the ICV, the patient's right PMC facilitated, and the quadriceps as a group also facilitated.

This patient once again had a "Metal element" distal wrist crease pulse point identified, which corresponded to an inhibited left TFL muscle, and was treated by holding the LI 11 point until a pulse was found on the left elbow crease, and the left TFL muscle was facilitated.

The patient also received QN care for CN III/IV/VI combination. The doctor once again had the patient follow a pen with just his eye tracking and it was found that in the right lower corner there was an inhibition of the muscle test. This was treated with a facilitation of the muscle once corrected with the corresponding vertebral level treated with the 2-pronged fork from a Hypervolt™ massage instrument on the bilateral sides of the spinous process segments. QN was also used when treating the CN combination of IX/X via the patient swallowing, which showed an inhibited straight arm pull down muscle test, and then corrected by the 2-pronged fork on the Hypervolt™ massage instrument on the bilateral sides of the spinous process segments. The swallowing action was re-tested showing a facilitation of the straight arm muscle pull down test.

This patient also received an NET clearing on the emotion of "low self-esteem" after TL'ing the epigastric area with his hand and identifying the main original event memory. The patient was tapped on the T1, T5, and T9 vertebrae of the spine, and then retested with the straight arm MMT while the patient held the idea of the original event memory, which was "strong" or facilitated. This patient also required the NET™ homeopathy remedy spray #9 of ER911 for further assistance in the emotional processing.

The third visit took place on February 20th, 2023. The patient showed no signs of hiccups. The patient via ocular lock was determined to have a left posterior C2 vertebrae by means of his eyes laterally looking left with an inhibition of the bilateral PMC muscles. This was corrected via a Diversified rotary HVLA adjustment, and the bilateral PMC was retested showing facilitation.

This patient once again had a "Metal element" distal wrist crease pulse point identified, which corresponded to an inhibited left TFL muscle, and was treated by holding the LI 11 point until a pulse was found on the left elbow crease, and the left TFL muscle was facilitated.

The patient also had his neurovascular (NV) aka Bennett's reflexes[28] corrected by holding the pulse points on the head for the Circulation-Sex related muscles, specifically the piriformis, left gluteus medius, and adductor muscles as a group all on the left side. These muscles were all tested previously showing an inhibition of the muscles, and showed a facilitation when retested after the NV points were corrected. The hands were places on the frontal eminences of the forehead bilaterally and there was a synchronization of the pulse points.

The fourth visit took place on February 28th, 2023. The patient's hiccups had returned in greater frequency. The patient via ocular lock was determined to have a left posterior C2 vertebrae by means of his eyes laterally looking left with an inhibition of the bilateral PMC muscles. This was corrected via a Diversified rotary HVLA adjustment with a posterior to anterior, medial to lateral line of drive. This patient once again had a "Metal element" distal wrist crease pulse point identified, which corresponded to an inhibited left TFL muscle, and was treated by holding the LI 11 point until a pulse was found on the left elbow crease, and the left TFL muscle was rechecked showing facilitation. The patient also received QN care for CN II with the pen light shining in the right eye causing an inhibition of the straight arm pull down muscle test, and was corrected. The CN III/IV/VI combination was also checked and corrected in the same manner. The CN VIII (auditory/vestibular nerve) was tested by a rubbing of the doctor's fingers to create a sound just lateral to the external aspect of the ear on the right side of the patient, while the doctor was performing the straight arm muscle test, which showed an inhibited test. This was also corrected in the same manner as the previous CN tests. CN X was also checked via Valsalva's Manuever of

taking a deep inspiration and bearing down, which also caused an inhibition of the muscle test, and the same correction was applied. CN XI (spinal accessory nerve) was also checked, having the action of elevating the shoulders was also shown to have an inhibited straight arm muscle test. These CN findings were all treated with a re-facilitation of the muscle once corrected with the corresponding vertebral level treated with the 2-pronged fork from a Hypervolt™ massage instrument on the bilateral sides of the spinous process segments.

The 5th visit took place on March 2nd, 2023. This patient received an NET clearing on the emotion of "resentment" while the doctor TL'ed his T4-T6 segments. The patient also received an NET clearing on the emotion of "lost" while he TL'ed his neck. The doctor also performed Primary Atlas Technique (PAT) and AK analysis and it was determined that the left C1 segment had shifted laterally. This was corrected via a Diversified rotary HVLA adjustment with a line of drive of superior to inferior, left to right. This patient once again had a "Metal element" distal wrist crease pulse point identified, which corresponded to an inhibited left TFL muscle. In addition to the TFL, the Pectoralis Major-Sternal (PMS) division muscle on the right as well as the Teres Minor muscle on the right were also tested, and showed inhibition. Hypothalamus PMG from Standard Process™ was lingually tested and showed a facilitation of the left TFL, right PMS and right Teres Minor muscles. In addition, the patient was also treated by holding the LI 11 point until a pulse was found on the left elbow crease to re-engage the left TFL. The patient was instructed to take 1 Hypothalamus PMG tablet per day with food.

The 6th visit took place on March 7th, 2023. The patient reported having no hiccups. The patient also received QN care for CN III/IV/VI combination. CN VIII was also tested once again by a rubbing of the doctor's fingers just outside of the ear on the right side of the patient, while the doctor was performing the straight arm muscle test, which showed an inhibited test. These were both treated with a re-facilitation of the muscle test once corrected with the corresponding vertebral level treated with the 2-pronged fork from a Hypervolt™ massage instrument on the bilateral sides of the spinous process segments. The patient via ocular lock was determined to have a left posterior C2 vertebrae by means of his eyes laterally looking left with an inhibition of the bilateral PMC muscles. This was corrected via a Diversified rotary HVLA adjustment.

This patient once again had a "Metal element" distal wrist crease pulse point identified, which corresponded to an inhibited left TFL muscle, and was treated by holding the LI 11 point until a pulse was found on the left elbow crease, and the left TFL muscle was facilitated.

The 7th and final visit took place on March 14th, 2023. The patient again reported having no hiccups for a 1 week period. The patient was shown through MMT of the bilateral PMC muscles to have a left lateral occiput, signified by having him protrude his tongue out and to the left. This was corrected via an HVLA adjustment with a superior to inferior line of drive on the superior nuchal line on the left. The doctor also performed Primary Atlas Technique (PAT) and AK analysis and it was determined that the right C1 segment had shifted laterally. This was corrected via a Diversified rotary HVLA adjustment with a line of drive of superior to inferior and lateral to medial (right to left).

The patient tested once again for a Closed ICV to which choline again strengthened the response of the quadriceps muscles as a group. The patient was instructed to take 1 Choline tablet per day before sleep this time. The doctor again applied light pressure to the bilateral Bladder 58 meridian

point, which lies on the posterior aspect of the lower leg, behind the external malleolus, 7 cun directly above UB 60, 1 cun inferior and lateral to UB 57. Upon retesting the original TL of the ICV, the patient's right PMC facilitated, and the quadriceps as a group also facilitated.

This patient once again had a "Metal element" distal wrist crease pulse point identified, which corresponded to an inhibited left TFL muscle, and was treated by holding the LI 11 point until a pulse was found on the left elbow crease, and the left TFL muscle was facilitated. Hypothalamus PMG from Standard Process™ was again lingually tested and showed a facilitation of the left TFL, and the patient was instructed to continue taking 1 tablet per day with food.

Chiropractic/AK Outcomes

SOAP (Subjective Objective Assessment Plan) notes were taken as a daily record keeping procedure to monitor patient progress. The notes explained the basic procedures mentioned on each subsequent visit and what was found upon chiropractic examination and what was adjusted or worked on with QN, NET, and AK therapies.

Upon conclusion of the 7th and last visit of the patient, he had reported his hiccups to be decreased by 100%, and he was released to maintenance care as needed. The patient had mentioned that the incorporation of NET, QN and AK treatments of the epigastric pain from the first visit-on had made a big difference in terms of the progression of decreasing the frequency of the resulting hiccups.

Discussion

The aim of this study was to determine the effect of several different AK based techniques with chiropractic care on decreasing the frequency and duration of hiccups that had become chronic in nature. In this case report, the epigastric discomfort he had been experiencing was likely causing his hiccups symptoms to become a chronic issue.

Research indicates that the presence of hiccups is usually due to the sudden onset of erratic diaphragmatic and intercostal muscle contraction and immediately followed by laryngeal closure. The abrupt air rush into lungs elicits a "hic" sound. Hiccup is usually a self-limited disorder; however, when it is prolonged beyond 48 hours, it is considered persistent whereas episodes longer than 2 months are called intractable. A reflex arc involving peripheral phrenic, vagal and sympathetic pathways and central midbrain modulation is likely responsible for hiccup. Accordingly, any irritant in terms of physical/chemical factors, inflammation, neoplasia invading the arc leads to hiccups.[31] The onset of this patient's chronic hiccups was unknown, but what could be postulated is that this patient's resolution of the frequency of hiccups could be due to the correction of QN based techniques that involved the vagus nerve (CNX).

Since hiccups has a neurological reflex arc consisting of peripheral pathways and central midbrain modulation, patients with intractable hiccups are likely to have structural or functional irritation involving the reflex arc.[32] Central process of hiccup remains poorly understood, it may not only be confined to the medulla but may also involve other parts of central nervous system (CNS) located between brainstem and cervical spine.[33] It can be theorized from the chiropractic intervention involving the HVLA adjustments to the various cervical spine vertebrae, especially

in the mid cervical spine (C3-C5), this could have stimulated a parasympathetic response from the brain to increase vagal tone and allow the diaphragm to properly relax and not cause a reflex action to trigger the patient's hiccup response.

Unfortunately, there is no guideline available to direct treating these serious disorders effectively. Chlorpromazine is approved by the US Food and Drug Administration as the only drug to treat hiccups until now.[33] However, using chlorpromazine to treat hiccups without correct diagnosis of lesion responsible for hiccup may lead to missing potentially serious conditions that may cause this symptom. Literature suggests that measures ranging from conventional remedies, alternative medicines to emerging therapies may treat hiccups successfully.[33]
Basically, transient hiccups are self-limited, and neither etiological evaluation nor immediate treatment is needed for these subjects unless their hiccup recurs. The effective hiccup treatment is exactly established upon a correct diagnosis of lesion responsible for the serious event. For example, after effective measures were undertaken to CNS lesions such as vascular ischemia and tumors, hiccup episodes subsided. Similarly, some peripheral lesions related hiccups responded well after these lesions were ablated. In addition, many available therapies are not evidence-based; moreover, alternative medicines and remedies have been tested with unbelievable effectiveness.[31] Acupuncture has been employed to treat serious hiccups among patients with myocardial infarction and metastatic liver tumor.[34] A control trial confirmed that this procedure was superior over ritaline to treat stroke related hiccups.[35] The addressed mechanisms of acupuncture procedure are complex which include changed axonal excitability, diminished nociceptive circuits in the dorsal horn, inhibited spinal reflexes, segmental pre- and post-synaptic inhibition mediated by GABA, and activated supra-spinal centers via spinoreticular fibers, and spinothalamic and spinomesencephalic neurons etc.[35] Similarly, near-infrared irradiation applied on the acupoints to improve the local blood circulation of affected areas has been shown to effectively treat intractable hiccups.[37] This may be a potential reason why the patient responded well to meridian pulse point analysis and correction of the Large Intestine 11 point (LI 11) on several visits, and why meridian therapy of holding certain tonification centers improved the response of the patient's muscle tests from inhibited to facilitated.

It is well known that GERD is commonly associated with belching. Apart from the main reflux symptoms in terms of acid regurgitation, heartburn, globus, dysphagia and hoarseness etc, hiccup was not rare among the GERD patients.[38] Granted the patient the patient had an abdominal CT scan as well as an upper GI endoscopy with negative results, the betaine hydrochloride tablet which was lingually tested initially on the first visit potentially complimented the strengthening of the TFL response via stomach functioning to produce stomach acid, which would be potentially beneficial in aiding relief of any GERD-like symptoms.

Other remedies in terms of breathing into a bag, breath holding, swallowing granulated sugar, drinking/gargling iced water, forceful traction of tongue, biting lemon, eating peanut butter, eyeball compression, carotid/rectal massage, Valsava maneuver, fright and gastric lavage etc. have long been recommended to treat hiccups for many years. These remedies may be very convenient and less hazardous, however, their effectiveness to treat serious hiccups are usually uncertain.[32,33,39] The only time the patient performed Valsalva's maneuver was when doing the specific muscle test related for QN analysis and treatment, so it does not serve as the best example for a potential remedy of treatment.

Walther[28] mentions in regards to gait analysis that sacroiliac articulations equate with the sternocostal articulations. Treatment to this association is sometimes effective in treating Tietze's syndrome. The xiphoid process and coccyx relate together and may be associated with general diaphragmatic involvement or specific problems, such as hiccups. It can also be postulated that a hiatal hernia can also lead to hiccups. The hiatal hernia is sometimes referred to as "the great mimic" because of the numerous symptoms it can create that often lead diagnosis astray. The symptomatic picture can relate to apparent digestive disturbances, heart problems, and shoulder, neck, and jaw pains, as well as dysphagia and hiccups.[28]

Being that the diaphragm is also interrelated with the hiccups reaction, correction of the diaphragm also should typically be addressed. When there is general low energy in the meridian system, correction of the diaphragm will often improve an individual's energy level.[28] This was seen in the patient across the seven visits that he was seen for care. Knowing that the phrenic nerves control diaphragmatic function, it was also important to address this as well. Efferent supply to the diaphragm is by the phrenic nerves, arising from C3, 4, 5.[40] Very often when this nerve appears to be disturbed a subluxation is found at C3, although it can be located at C2, 4, or 5. This was often an area that was adjusted on the patient and postulates why the patient was able to have cessation for periods of times without having a chronic hiccup reaction. Long term studies would be more beneficial in evaluation of the benefits of treatment.

Conclusion

This case study describes several AK based therapies for the treatment of chronic hiccups. It's applicability to other patients with similar conditions should be explored. More research is needed on the subject of AK care-based therapies with chiropractic for the treatment of chronic hiccups. Specifically, focusing on one individual technique in the treatment of chronic hiccups and/or epigastric pain for further research would be best.

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Standing Subscapularis Jump Test and its Outcome Related to Covid 19 Vaccine Status

Michael Lebowitz, D.C.

Abstract

Over the past 50+ years of Applied Kinesiology (AK) the subscapularis muscle has been related to the heart. Goodheart and others have evaluated a standing subscapularis test in combination with jumping. This study correlates the results of the test with receiving the covid vaccine and covid history.

Introduction

For both lay people and professional health care workers, the safety of the Covid 19 vaccines have been debated with each side showing bias from "it is perfectly safe" to "all who are vaccinated will drop dead in the next year of two". Obviously, the truth lies somewhere in the middle. In our office Drs' Michael and Noah Lebowitz have had patients present with many different symptoms within close proximity to being vaccinated. These symptoms have occurred after the 1st dose in some cases and in one, not until the 5th dose. Symptoms reported included stroke, pulmonary embolism, paralyzed vocal cords, cardiac arrhythmia, Peyronie's disease, rheumatoid arthritis, generalized severe weakness prolonged for months, unresolving muscle and joint issues, just to name a few. In alternative medicine we specialize in treating subclinical issues: problems that may elude normal western medicine diagnoses (before becoming pathologies) via traditional labs, exams etc. In the 1960's Dr Goodheart developed a test where the subscapularis was evaluated standing for facilitation. Then the patient was put through an activity to raise the pulse rate and then the subscapularis was retested in the same fashion (1). Myocarditis, pericarditis, cardiac arrythmias and other symptoms have been reported in studies as possible but "rare" side effects of the vaccine (2, 3, 4, 5). Knowing it typically is not an all or nothing phenomena, we decided to use a variation of the "Goodheart test" and collect data. Also, with what appears to be an increase of sudden deaths of many pre 50-year old's (athletes and all others) we thought it could be an illuminating study.

Procedures & Methods:

We took 50 patients (randomly selected, some new, some existing) from our clinic. While standing we tested the subscapularis muscle bilaterally (one at a time). If the patient had normal facilitation, they were included in the study. In a handful of patients one of the muscles was inhibited on initial screening (due to shoulder dysfunction or some other phenomena). These people were excluded. We had the patient do 10 moderate vertical jumps and retest the subscapularis. These jumps typically raised standing pulse 20-30 points. If the subscapularis inhibited on either or both sides after jumping, that was a positive finding though etiology would be unknown (heart, structure,

aerobic deficiency, etc.). We felt that structure would probably not be affected as much by vaccine status and that if there was a difference between the vaccinated and unvaccinated, maybe we were picking up subclinical heart findings. On patients with positive "jump" tests we tested 3 substances to see if any would negate the finding: a) L-carnitine, b) dan shen (herbal anti-coagulant and vasodilator), and 3) hawthorn berries (tradition heart strengthening herb). Any of the three could be suggestive of a subclinical heart issue. We then asked the patient the following questions:

1) Did you have covid? If so, how many times?
2) Were you vaccinated for covid and if so, which vaccines did you receive and how many?

We stopped at 50 people as a clear pattern was emerging. We also saw without doing any corrections how long the inhibited subscapularis stayed inhibited (this was only done on 10 or so patients as we hadn't thought about it initially).

This was just a preliminary study, and more questions could be asked: Which other reflexes were positive, acupuncture points, heart related tests, etc. On a few of the more severe patients we did run D-Dimer, Fibrinogen and Cardiac Calcium Score CT's all of which were within normal limits.

Results

Of the 50 people tested 26 (52%) failed the test (at least one subscapularis was inhibited from jumping with the duration of the weakness running from 1 minute to at least one hour when they left the office).

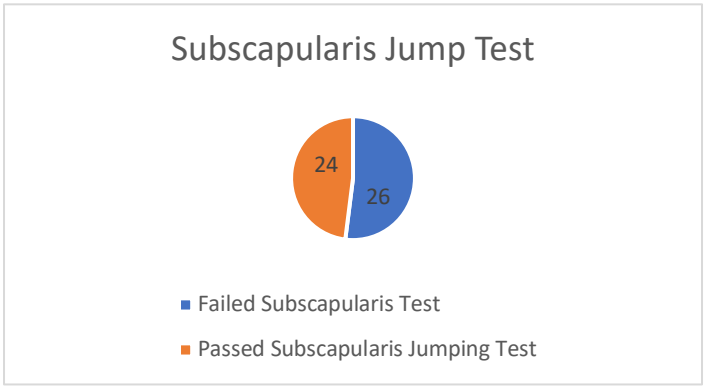

Image 1.

Of the people that were tested, 23 received at least one covid vaccine and 27 received no vaccine.

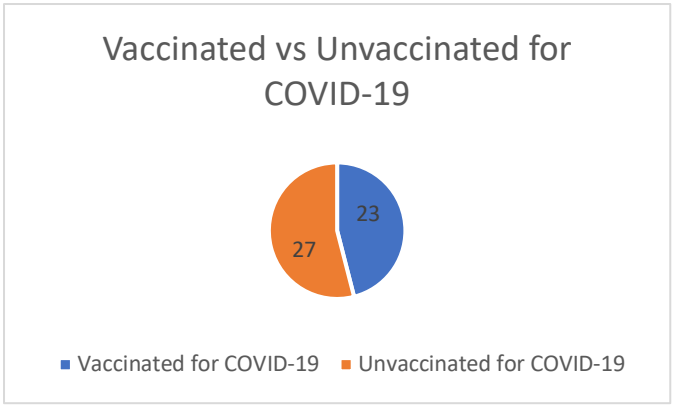

Image 2.

In the "unvaccinated" group, 4 out of the 27 failed the jumping test (18.5 %)

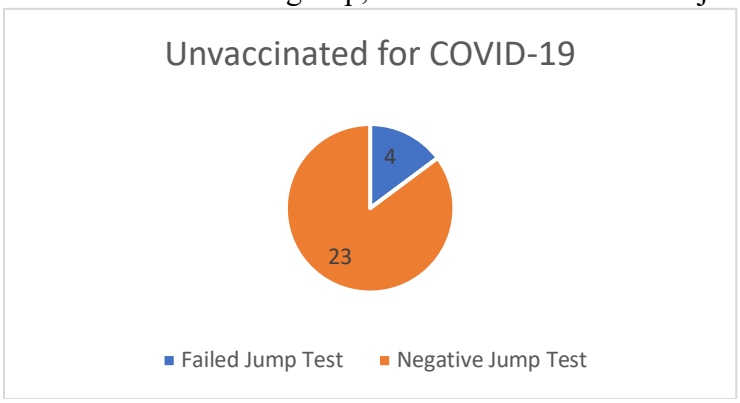

Image 3.

In the vaccinated group, 21 out of 23 failed the jumping test (91.3%)

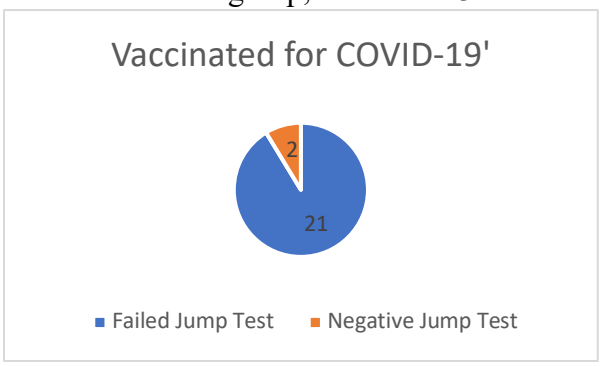

Image 4.

Of the people that had pfizer vaccines 5 out of 6 failed (83.3%)
Of the people that had the moderna vaccine 10 out of 10 failed the test (100%)
Of the people that had the J and J vaccine, 2 out of 3 failed (66.7%)
Of the people that had vaccines from more than 1 company 4 out of 4 failed (100%)

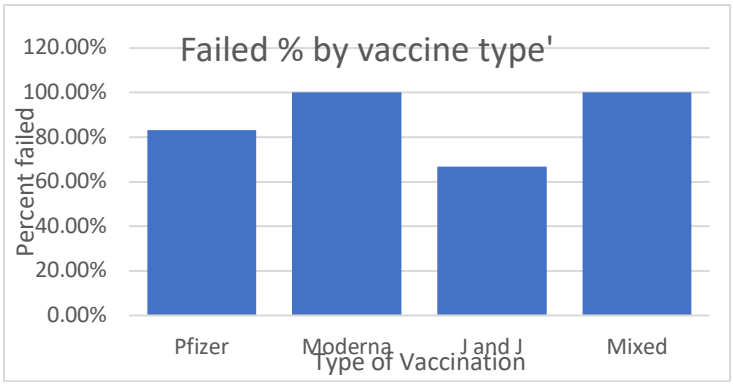

Image 5.

Whether or not people had a covid infection did not appear to influence the results of the test.

Of the 26 that failed the test, 24 had the inhibition negated by hawthorn berries (92.3%)
3 were negated by Dan Shen (11.5 %) all 3 of which were also negated by hawthorn berries.
0 were negated by L-Carnitine

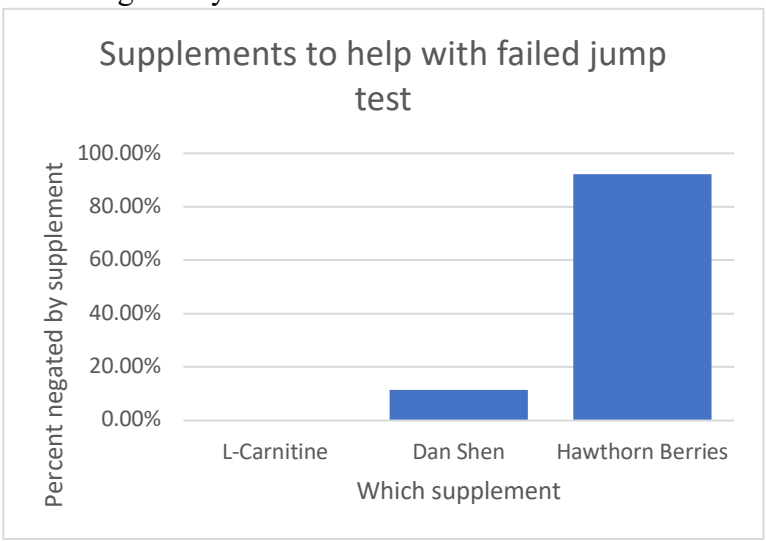

Image 6

Hawthorne is considered cardiotonic, vasodilating, antihypertensive, antihyperlipidemic and also helpful in treating atherosclerosis (6)

Of the unvaccinated people 3 out of 27 did not get covid (11.1%)
of the vaccinated people 4 out of 23 did not get covid (17.4%)

This was based on just asking them if they had covid.

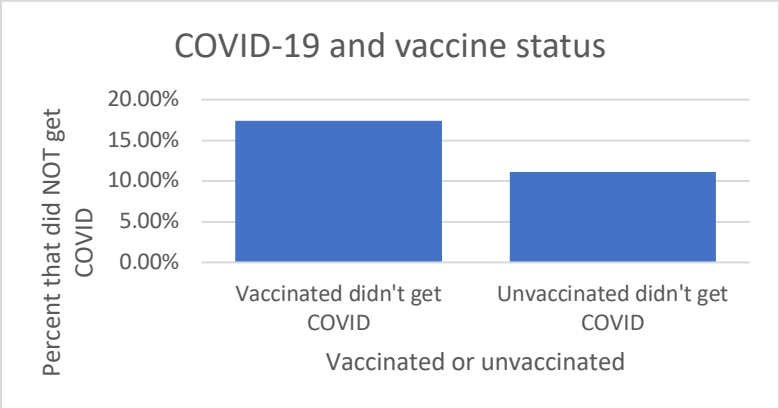

Image 7

The results are strikingly significant, though, "what is going on that influences the subscapularis muscle?" needs to be answered.

Conclusion

Covid vaccines have a high correlation with the inhibition response of the subscapularis muscle in the standing position after 10 vertical jumps. The test being negated by a cardiotonic herb suggested that in the vast majority of covid vaccinated people, there is some type of subclinical heart involvement based on long standing muscle organ relationships in applied kinesiology

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Tomorrow is not Promised: One Man's Contribution to Ease Human Suffering

Kerry McCord, D.C., DIBAK & Walter H. Schmitt, D.C., DIBAK

Abstract

The script of a video presentation created by the authors to introduce the use of manual muscle testing and indicator testing as fundamental principles underlying Applied Kinesiology (AK) assessment procedures is presented. At its core, it is a testament to one man's journey as a student, teacher and practicing physician.

Under the expert direction of a professional "story engine" creator, the authors spent countless hours writing and rewriting in a conscientious effort to introduce concepts inherent in Applied Kinesiology and advance Quintessential Applications (QA) as an entry point for the study of AK.

Key Indexing Terms
manual muscle testing, indicator testing

Introduction

As a matter of context, this script writing project began in late 2020 and was not yet completed upon the unexpected passing of our (my) teacher, mentor, colleague, and friend, Dr. Walter H. Schmitt on November 20, 2021.

Dr. Schmitt believed that all of humanity, whoever you are and wherever you may live, deserve the very best in natural, holistic, low-cost, low-tech health and wellness care; and that all people and communities' benefit from improving the quality of even one persons' life… thus, instilling hope in the future.

He wrote: "When we restore normal afferent activity, supply the appropriate nutrients, and administer to the mental and emotional environment, we pave the way for efficient cellular function and allow for optimal expression of our genetic potential."

In 2022, faced with "life without Wally," I rededicated myself to the project's completion, rewriting the copy in the third person, as I would now be its sole narrator. The script was completed in the summer of 2022, recorded, and subsequently enhanced by PowerPoint slides, videos and visuals.

I was deeply honored to air the world premiere of "Tomorrow Is Not Promised: One Man's Contribution to Ease Human Suffering" on October 5, 2022.

The following is the unedited version of the script used in the video presentation now available for viewing at https://qahomestudy.com.

Script

I'm Dr. Kerry McCord and I am delighted to spend time with you today. I know that your time is valuable. You work hard, you went to school for a long time, invested a great deal, and learned a lot along the way.

Perhaps you sometimes feel like you are not getting the full value for all the blood, sweat, and tears that you sacrificed to get where you are today. Maybe that's true financially, or in your professional fulfillment, or maybe in a lack of appreciation. Or, possibly you feel that you should be able to give more: to your family, to your friends, to your patients.

I've been around for a while and can relate to all these thoughts and feelings. That's why I am here to tell you about the life's work of the late Dr. Wally Schmitt who passed suddenly and unexpectedly on November 20, 2021.

I realize that you have listened to many other presentations, and you might be asking if you even have time for this. However, I assure you, if you listen and open your mind, what you hear will reveal new vistas, provide new perspectives, and allow you to see healing in an entirely new, exciting, and compelling way.

So… Let me take you on a journey toward a vision of healing and clinical practice that took years to comprehend.

Early in Dr. Schmitt's career, he had the opportunity to practice and teach with the renowned clinical investigator and healer, Dr. George Goodheart.

During these early days, a close family member was quite ill and presented with a puzzling array of symptoms including a blood sugar of 30 while fully conscious and able to move. The constellation of symptoms was so baffling that the patient had to be admitted to the hospital.

Wally (Dr. Schmitt) asked Dr. Goodheart, "How can we figure out the possible causes for the patient's problems?"

Dr. Goodheart responded with a litany of differential diagnoses. He had an amazing understanding of how to diagnose and treat every patient that came for care.

Wally said to him, "You have to know as much as any other doctor who might treat this patient." He replied, "No Wally, we have to know more. We have to know what we know, and know what others know, and then be able to put it all together better than anyone else"

That statement reached Wally to his core, as his eyes opened in awe at Goodheart's insight. Every day in practice Wally was learning new things while watching and listening to him. Not just techniques and procedures, but a way of truly seeing what was taking place in the patient's body, a unique insight into each individual patient's physiology.

It was clear that what Goodheart had mastered, Wally needed to master. Goodheart's vision of health and healing was what he needed to see.

Goodheart helped Wally understand how to integrate "what we know and what others know." And… in process, he gained confidence and a peace of mind. Regardless of how patients presented in Wally's office, the "What do I do now?" feeling was gone!

And… though he continued to practice, learn and teach, there was a distinct gap between what he was teaching and how seminar participants were able to use the information in clinical practice.

After traveling and teaching with Wally for more than two years, I had a sudden and unanticipated epiphany followed by a conversation that would unalterably change his life and mine.

Following a seminar in Dallas, Texas, where Wally demonstrated the comprehensive application of the clinical thought process that he had developed, visibly excited, I approached him and asked: "Have you been trying to tell us that the order in which we perform the techniques and procedures that we have been learning has a direct impact on the outcomes that we see?"

The simple answer was: "Yes!"

I said: "I don't think anyone understands that, and it has taken me more than two years of traveling and teaching with you to get a glimpse of what you have created. So… either I'm slow or nobody gets it."

Wally responded, "I don't think you're slow."

With a profound sense of purpose, I replied: "I will need all your notes. I'm going to write a clinical reference manual, designed to be used in daily practice, and everyone, if they are anything like me, is going to want it!"

I then asked another career altering question: "Where is the thought process written down? I need to summarize it for the Book's introduction."

He replied, "It's in my head"

I responded, "You're going to have to put it on paper! Tomorrow is not promised, and, God forbid, if you should die unexpectedly, your life's work will go with you. You can't let that happen." And… providentially, so it began!

During that year and beyond, we spent thousands of hours editing, revising, re- imagining, and recording a comprehensive curriculum. It took a ton of work to lay the groundwork for QA Home Study online, thus making this work more accessible and easier to learn than ever.

About 10 years ago, we were teaching pain relief techniques at a professional conference. In the back of the room, there was a doctor in an electric wheelchair.

I later found out that he had fallen off a ladder 3 years earlier and fractured his acetabulum. Unable to walk, he had gained significant weight, postponing plans for the required surgery.

During the hands-on workshop that followed, this doctor's longtime friend and colleague used these pain relief techniques on his hip. His response was nothing shy of remarkable.

At the end of the lecture, he motioned to me to come over to where he and his friend and colleague were sitting. Without hesitation, he said, "Watch this" and he stood up and walked across the room and said, "this is the first time since the accident that I've been able to walk more than one step… and without pain!"

His colleague who had treated him during the workshop said, "I have been in practice for 30 years and have seen many remarkable responses, but this is by far the most astounding result I have ever witnessed."

I asked him to go to the front of the room and share his experience with Dr. Schmitt. As you might imagine, Wally was delighted to hear of and see his marvelous response.

Both Wally and I were reminded that this was much bigger than the patients we are privileged to serve. We spoke with eagerness and anticipation about how this work had the potential to empower many with the understanding and skills to regularly achieve outstanding, and often remarkable… and even unimaginable results.

I realized that Wally had synthesized the clinical skills that fulfilled what Goodheart had taught him decades earlier: "We have to know what we know, and know what others know." We had finally gotten this out of his head and into the hands of thousands of doctors who are helping hundreds of thousands of patients.

We each have our own story. His gave birth to an extraordinarily effective clinical thought process and a variety of useful procedures and techniques… and hopefully a path for you to follow to achieve the peace of mind that comes from applying all your hard-earned clinical expertise in the most efficient manner.

On the other hand, I had been blessed to have had the foresight to recognize that by recording it and leveraging technology, together we could ensure that this life-changing work was made readily available to healthcare practitioners the world over.

His sudden passing caused me to reflect on that moment years past when I said, "Tomorrow is not promised, and, God forbid, if you should die unexpectedly, your life's work will go with you. You can't let that happen."

That fateful Sunday morning, November 21, 2021, following a phone call from Wally's wife telling me that he had passed while jogging in his neighborhood, I was in shock. Such news was so unexpected.

I wept off and on that entire day and didn't sleep much that night. Wakeful, I arose from bed, sat down at my computer, and began to reimagine my role as I rededicated myself to ensuring that his work, published and yet unpublished, was made even more readily accessible "to lessen the suffering of patients around the world."

This desire to help others is the passion and purpose that unites us as healthcare practitioners.

I believe that the greatest gap in health and wellness these days is not in understanding technology or research, but in achieving a universally applicable, personalized, patient centered, application of this technology and research in a manner that generates exceptional outcomes and lasting results.

For more than 45 years Wally was privileged to help thousands of clinicians of all professions, to improve the lives of millions of patients with this remarkably reliable and precise process. Together, we stood side by side for almost two decades and pursued our mission to educate physicians and provide for patients the very best in natural, low tech, low cost, health & wellness care.

As we proceed on this journey without him, we will explore insights into the principles that optimize human function that made my practice and his… and the practice of so many others… so fulfilling.

Think back to when you first decided that you wanted to enter healthcare as your life's profession.

Think back to the ideals and values that motivated you at that time.

Think back to the anticipation of exploring the wonders of the human body and its healing power and your vision of relieving pain and suffering and helping your patients live a better life.

Over time and out of necessity, the real world often redirects our course. But… if you get in touch with these early images of what treating patients might be like, you might ask, how does it compare with what I do every day?

So many practitioners have been jaded through the years. After all the study and work that you have put in to get to where you are today – does it seem like you are getting all that you imagined for all that effort? Could there be more to treating patients than you are now experiencing?

Wally suggested that this is quite likely, and perhaps I can show you how to become more closely aligned with your original perspectives about healing…

What is the first thing most people do after getting a haircut? They find a mirror and take a look.

What do you think your patients do after they leave your office? They assess their status to see if anything has changed.

The patient knows if they are better. Shouldn't you?

One of the biggest challenges encountered by most healers in any profession is the lag time between introducing or performing treatment procedures and waiting to see if the therapy prescribed has the hoped-for result. This is a source of anxiety for both doctors and patients.

Many doctors try a therapy and weeks may pass before it is known if the therapy is compatible with the patient's specific needs. If the therapy does not achieve the desired outcome, then a new course of therapy must be charted and the result, once again, delayed. This cycle is often repeated several times before the patient responds… or… moves on.

The success rate for many therapies, especially in chronic disease, is far less than 50%. Wouldn't it be nice to know if the therapy you recommend is compatible with your patient's needs before they leave your office? Wouldn't it be useful to have a real-time tool for personalized, precision care that eliminates the lag time between instituting a therapy and witnessing the outcome to see if it was appropriate for the patient?

The good news is… there is such a tool. That tool is indicator testing and is based on patient response while the patient is in the office. It is used to determine whether the response to a potential therapy is helpful or not. With indicator testing, the patient's problem is assessed: pain, range of motion, a neurological test, an activity of daily living, and so on. Then, you observe if the measured indicator is helped by a particular therapy. Consequently, both you and your patient know immediately whether a specific therapy is compatible with your patient's needs.

Of course, you can explain your proposed treatment so that the patient understands, but with Indicator Testing, the patient feels the change immediately as you simultaneously observe the response. Indicator testing provides immediate feedback and you and your patient share in the experience. It (indicator testing) does not always yield significant improvement, but even when there is no change, you are guided in the right direction.

Believe me, patient's will stick with you when you are intimately engaged in the process of their healing. They will know that you are pursuing their health with an awareness of what works for them… and what doesn't.

As valuable as Indicator testing is, using it for each individual procedure can be time consuming. Fortunately… there is a way to dramatically streamline the process.

In the 1960s, Dr. Goodheart's innovative observations expanded the use of standardized muscle testing evaluation for analytical and diagnostic use in any practice…

But wait a minute, I can feel that some of you may be tuning out because of preconceived notions about muscle testing. Many doctors have had a negative or outdated impression of what muscle testing is in the modern clinical setting.

Consider this, there is no comparison between a master chef, who daily hones their craft, and a hot dog vendor, who heats up a hot dog and puts it in a bun, except… they both prepare food. And… if you spent your whole life only aware of hot dog vendors and not master chefs you might not have a very high opinion of food either.

Unfortunately, many people, especially those in academia, who have had no direct exposure to muscle testing as originally taught by Goodheart, have made similar erroneous comparisons. While some muscle testing concepts may have been dismissed in the past, I am here to tell you that this simple neurological tool is on the cutting edge of precision medicine and personalized patient care.

In Quintessential Applications (QA), we employ a physiological and basic science driven system of analysis that looks specifically at neurological function using muscle testing as an extension of the neurologic-orthopedic exam.

QA focuses initially on those factors that have an impact on every system in the body. Neurologically speaking, the primary goal is to remove interruptions between the brain and the neuromuscular and autonomic pathways. Biochemically, the goal is to promote optimal chemistry for efficient cellular function. Not surprisingly, achieving each of these goals depends on the effective treatment of the other.This neurologic-orthopedic approach smoothly guides you through this process.

In Quintessential Applications you will learn muscle testing based on principles published in a peer reviewed paper.

We are sticklers for accuracy. As we have acknowledged, muscle testing has been used in many ways, some more sophisticated than others. However, when used properly, it is a real-time diagnostic tool that keeps you current as your patient changes.

Manual muscle testing is a science and an art. You need to practice testing muscles. It takes time to get a proper feel for this hands-on tool.

For example, it's clear that anyone can listen to a heart. But, cardiologists, who spend years listening to heart sounds, can hear many things that others of us cannot. It takes a long time to develop such expertise.

The same is true for muscle testing. It takes practice and must be done precisely to obtain precise outcomes for your patients. We teach this in Quintessential Applications. And… although mastery takes time, our students report obtaining remarkable results with their patients right away. The QA Program is designed for immediate clinical use by teaching some of the most commonly encountered and profoundly impactful techniques first.

It is often said, “A picture is worth a thousand words.” Indicator testing is the picture that brings physiology to life, as you bear witness to the marvel of improved function, while expanding your clinical abilities session by session.

For instance, suppose you’re trying to decide what nutrient a patient requires, and you have several choices. After measuring a range of motion or the level of pain, have the patient chew each of the various choices one at a time and observe which among them makes the patient better or worse.

This process is the application of the scientific method at the most basic level:

Make a hypothesis, test the hypothesis, and with the results either confirming or rejecting the hypothesis, prescribe a therapy (if the hypothesis is confirmed) or, if the hypothesis is rejected move on to a new hypothesis.

For example, let’s say your patient demonstrates a need for vitamin B-12 based on history, labs, and exam findings. However, there are 4 types of vitamin B-12. Which form of B-12 is most compatible with your patient’s needs? Which company’s product is best suited to your patient’s needs? Which supplement do you choose?

To answer these questions, you must first make a simple hypothesis. For example: “hydroxocobalamin will help this patient’s shoulder pain.” Then, have the patient move their shoulder to the point of pain and measure it on a scale of 1-10. Now that you have a measurement, instruct the patient to chew and taste one or more sources of hydroxocobalamin. Then, observe if tasting the nutrient from one source or another decreases the pain. If it does, then you have supported your hypothesis. If it doesn’t, then you have rejected the hypothesis.

If the hypothesis is rejected, you make a new one: “methylcobalamin will help this patient’s shoulder pain” and proceed to evaluate the new hypothesis with real-time results. You continue this scientific process for all four types of B-12 to determine which type most effectively meets your patient’s needs.

You can measure any dysfunction indicated by the patient’s presentation.

For instance: have your patient try to get up from a seated position or perform a knee bend or flex the spine to touch their toes. If diminished function is observed, evaluate various therapies to identify a course of action that produces a favorable response.

Or, in asymptomatic patients, measure a generic range of motion and observe if a therapy improves general flexibility. This is easy to do. It is common sense. And… I’ll tell you this, if you’re not actively using muscle testing and/or indicator testing in your practice, you’re leaving a wealth of useful clinical information on the table.

Some years ago, Dr. Schmitt taught a seminar on nutrition at of the University of Miami Miller School of Medicine.

Early in the seminar he discussed the value of using Indicator Testing to determine precise nutrient supplementation for each patient. He demonstrated these concepts on a subject with low back pain that was aggravated by bending forward and attempting to touch their toes. As he explained to those in attendance, oftentimes low back pain is related to a need for some form of vitamin E.

As you know, there are many different types and preparations of vitamin E available. He had the subject chew 4 different Vitamin E sources, one at a time, and measured range of motion and pain on bending forward after chewing each pill. Three of the four
sources resulted in an improvement in forward flexion and pain, but one of them made a dramatic improvement in flexion and decreased the pain by 85%.

Later that night, at a social event, a man approached him, raised his hands over his head, bent forward at the waist and touched the floor. He repeated this several times as he introduced himself and said, "Dr. Schmitt, I am so glad to meet you. I have had persistent back pain for 3 weeks and have been unable to bend over during that entire time. Look at me now. As he vigorously shook his hand he said, "My wife tested me with vitamin E and look – no pain at all!"

His wife, an administrator at the University, had attended Dr. Schmitt's lecture and upon returning home prior to the social event, tested various sources of Vitamin E on her husband achieving this phenomenal result upon chewing one of those sources. The patient's improved function from his wife's application of Indicator Testing principles made both of their lives better.

The results achieved were real-time. Patients see the difference and that encourages compliance. It will do the same for you and your patients.

QA is effective, high quality, low tech real-time healthcare. It facilitates your efforts to change your patients' lives… and in so doing, it will remind you of why you chose the healing arts as your chosen profession.

Most doctors have been trained to focus on local problems or single systems and decide on a treatment plan suggested by their locally focused examination. Not infrequently, there is much more to the underlying cause than might be considered during such a narrowly focused exam.

Therefore, most practitioners are getting suboptimal results because the classical patterns of evaluation have limited flexibility to dive deeper into the potential underlying cause of the patient's presenting symptomatology.

For instance, a tendency toward injury, or, chronicity following injury, could be due to a habituated neural pathway, or underlying inflammation associated with an offender in the patient's diet, or the need for a particular nutrient, or some other disturbance of normal physiology that needs to be addressed.

Dr. Schmitt summarized this principle in these words, "It is the common clinical approach in all healing professions to look at the patient's local complaint(s) as the primary focus of the initial clinical assessment. The QA Clinical Protocol revises this focus by insightfully approaching the patient's presenting complaint(s) as an integral part of their overall physiology. It assesses and treats 'physiology gone wrong' in a systemically oriented, logical, efficient, and clinically rewarding manner."

Sometimes results from your therapeutic efforts take time, but, if the appropriate approach is applied, the body can often change in an instant. The fact is… the changes that we who practice using QA routinely see in patients are often considered outliers or miracles. This is because, with the clinical tools that we have at our disposal, we are able to look at the whole person and adapt over time as the patient goes through the healing process.

What made an impact for the patient a few weeks or months ago may not have the same effect today if they're progressing… or, if they are not.

When you go to a doctor, he or she recommends a course of therapy that may last for months, but, the adaptive immune system has a 5-7 day cycle. Thus, if you have an immune related problem, the therapy that works today may not work weeks from now. Even so… many, if not most doctors, continue with the therapy originally prescribed instead of re-evaluating and changing course.

It has been said, "Although you cannot control the direction of the wind, you can control the set of your sail." The application of manual muscle testing and indicator testing principles allows you to change "the set of your sail."

Conventional wisdom suggests that the optimal clinical approach is primarily informed by the data presented in large clinical studies. However, though such studies are important, if you approach every patient as an "n of 1"… that is, as an individual, the possibility of achieving a favorable outcome dramatically improves.

In QA we initiate treatment by addressing the spinal cord driven neurological adaptations from injury (recent and ancient) that become habituated and impact all areas of the human system. By relieving these adaptations, you help resolve the underlying cause of a host of seemingly unrelated signs and symptoms.

This approach restores normal muscle spindle cell control mechanisms necessary for muscular and postural control and relieves local and systemic autonomic responses associated with disturbed digestive and other organ dysfunction.

Let me give you an example: It is common knowledge that if you're in pain, the digestive tract tends to slow down. It's as if your body is focusing on the injury, the source of the pain or the stressor, and… is in a state of "survival first" and digestive activity later.

Every system of the body is directly or indirectly influenced by pain… or nociception, neurologically speaking. Therefore, since all systems: immune, endocrine, gut, muscular, etc. are adversely impacted by pain or nociception ...shouldn't we address nociceptive activity prior to addressing any other system or local problem?

The answer is "Yes".

With this fundamental principle at the forefront of our therapeutic efforts, the QA Protocol initiates treatment by first addressing sources of nociception and pain.

So, in this example, if the patient has chronic pain and difficulties with digestion, treating sources of nociception and pain first makes it easier to address the disturbed digestion.

This also points to why it is so important to consistently assess the needs of the patient, because when you clear up one problem, it can affect aspects of the patient's physiology that potentially influence another.

Let me tell you about one of our QA practitioners, Dr. Melissa Tang.

Dr. Tang graduated with honors from Life University in March 2014. That summer, while awaiting her license to start practice, she was involved in a life changing, career altering automobile accident. At impact, the left side airbag deployed and struck her in the side of the head and left shoulder. She said, "it felt like my arm had been amputated." Immediately following the accident, she began to experience severe neck pain, middle & lower back pain, left hip and leg… pain and weakness.

She consulted a personal injury attorney and was referred to a clinic specializing in personal injury care. For 3 months she was treated multiple times weekly with manipulation and physical therapy, but much to her chagrin, without improvement. She also received non-steroidal intramuscular anti-inflammatory injections that not only did not help… but, unfortunately, made her sick.

Her husband, discouraged with her persistent pain and lack of progress told her, "This isn't working. Your symptoms are getting progressively worse. You are dying and need help." He insisted that she find someone who would take a different approach and find a solution… no matter what the cost.

The following day, she called a Life University instructor who had introduced her to Quintessential Applications and made an appointment with him for evaluation and treatment.

On that initial visit, her blood pressure was through the roof… and her balance was so bad she could hardly stand upon closing her eyes, even for a second. Following an extensive muscle testing examination where most muscles tested were found weak, she was treated using the QA Protocol… as her husband watched.

When that first visit was finished, her blood pressure had returned to normal, she was able to stand steady with eyes closed, and 80% of her persistent pain was gone. She was astonished!

After she and her husband left the office and got in their car, he said "You need to do this work. I literally watched you heal on the treatment table."

She returned for follow-up once weekly and after the 3rd visit, all her symptoms had resolved… with the minor exception of residual weakness in her left leg and hip, though that too had greatly improved.

Just a few visits later, heavy metal toxicity was identified, and after some investigation as to the source, 9 amalgams that she had had for quite some time were hypothesized to be the underlying reason for the persistent lower extremity weakness. Subsequently, she consulted a holistic dentist and over the next 18 months, the fillings were slowly and carefully removed, one amalgam at a time.

As she gradually recovered from the heavy metal toxicity, she immersed herself in the study of QA, treated herself at home (with her husband's help) and received supportive care from her QA Doctor as her lower extremity weakness gradually resolved.

Daily, she was studying and learning new concepts and techniques. Not yet in practice, she tried out her newly acquired knowledge by treating her husband and a few close friends and relatives.

Interestingly, and as it turned out… fortuitously… while treating her husband, she found a subscapularis weakness that would not resolve no matter what treatment approach was used.

In applied kinesiology circles the subscapularis is found to be associated reflexively with the heart. This persistent weakness prompted her to refer him to a cardiologist for evaluation. In fact, three times a referral was made and three times nothing significant was found, but, on the third visit a CT scan was ordered. The scan was performed a few days later and revealed a significant blockage of his right coronary artery and endarterectomy (roto rooter) surgery was scheduled.

However, during surgery, the blockage was found to be so severe that a stent had to be inserted to open the artery. After surgery, the cardiologist, intrigued with how her patient could possibly have known that he had a significant heart problem, asked him to enlighten her. Although he explained that his wife was able to discern that a difficulty with his heart was present through the use of assessment procedures she had studied in her post-graduate training as a chiropractor specializing in applied kinesiology, the cardiologist didn't really give it much attention… however, before she went on to her next surgery, she said, "whatever it was, it saved your life."

Many of you have brilliant clinical training, though, if you are anything like Dr. Tang and the other practitioners enrolled in QA Home Study, what you've learned does not always sync up with what you experience in clinical practice. You may have a ton of tools… but, when used as indicated by literature or common standards of practice, they may not always yield the desired result.

It might be like pulling a hammer out of your toolbox, based solely on what you have learned from published research, pounding on that which seems like a nail, and then waiting to see if your patient responds favorably to the treatment provided.

However, when you know you're using the most relevant tools and clinical concepts to determine what is appropriate for each and every patient, regardless of what the patient's problem might be, you proceed with confidence and a peace of mind.

Many of you are treating patients, and making progress with some, if not many. However, when they feel normal once again, will they remember that you were responsible for their recovery, or, will they attribute it to something or someone else?

Unless you're demonstrating clearly the progress made and the value received, the patient may not be able to connect the dots.

One of the most impressive attributes of the QA Protocol is that the positive changes are obvious to both patient and practitioner. And… usually before the patient leaves the office or ends a virtual call.

Remember this salient principle – measure, measure, measure. Visit by visit, the measurements used may vary depending on patient presentation. You may measure…

Flexibility (limited movement in the neck, back or limb) Pain and/or tenderness (structural or visceral)
Blood Pressure (sitting, lying and standing) An orthopedic or neurological test
Fatigue (generalized or following certain activities)
Brain fog, weakness or a feeling of unease that is hard to describe

Each visit, find something that you can measure and use it to demonstrate progress to you and your patient. We all want to function better and experience less discomfort.
Show your patient that that is possible.

It is my expectation that many of you have questions and I promise I will show you how you can reach out to get those questions answered soon. For now… if you have a question, you might want to write it down.

That being said… one of the most common questions asked goes something like this, "My practice is different from yours. Can you help me create the confidence, clarity and results that you achieve without having to change my practice style?"

The simple answer is "YES"!

Clinicians of all stripes, backgrounds and practice styles are achieving remarkable, consistent, and lasting outcomes using the concepts and procedures taught in the QA Course. And… they report that their patients are so happy with the results that they become fans and look to them to address all their healthcare needs, as well as those of their family and friends, creating a steady flow of patients and a wait-listed practice.

The QA Home Study Program is the means by which this is accomplished. If you are a healthcare provider (chiropractic, medical, acupuncture, naturopathic, etc.) that examines and treats patients daily… using the principles, techniques and procedures taught in the QA Course will help you remove the obstacles that impede your patient's progress, and, in process, you will achieve more efficient and effective results.

Look… I know that you must be intrigued, or you wouldn't still be listening, so… I invite you to go to www.qahomestudy.com, enter your email address and get instant access to a no obligation one-week free pass to review QA Home Study.

That's right, a no obligation one-week free pass… our gift to you. Just go to www.qahomestudy.com and enter your email address.

You'll get instant access to:

- ***All 16 Sessions*** *of the QA Course with live demonstrations providing a model of what you will do in your office every day!*
- ***Over 200 hours of clinical education videos*** *with course notes!*
- ***All the QA clinical forms, handouts and peer-reviewed papers*** *for use in practice management, patient education and as a ready reference!*
- ***All QA Enhancement Webinars (over 100 hours of content)****, including topical series on the Immune System, Adrenal Dysfunction, Synchronizing the Central Nervous System, Sleep, the Small Intestine, Glutathione and more… as well as common questions asked, comprehensively answered and categorized for easy access!*
- ***And that's not all...***

Whether you are new in practice or have been practicing for years and think you've seen it all, I assure you… QA Home Study will provide insights that will immediately improve your clinical outcomes and enhance patient satisfaction.

In addition, you will have access to an audio recording of the 35-page award winning paper written and read by Dr. Schmitt himself discussing the thought process that underlies the neurological and biochemical principles driving this context for clinical thinking… helping you apply QA principles and procedures even more effectively.

Some of you may have a concern that studying online might not provide the depth of instruction you've come to expect at live seminars. However, one of the many ways
that we have addressed this concern is by amplifying the online experience with session related enhancement webinars (49 one-hour webinars in total) that expand on the concepts taught in each session and allow you to apply those concepts even more efficiently.

Finally… I know if you're like me, you want something you can use as a reference when treating patients. The good news: A comprehensive clinical reference manual has been produced, is available for purchase, and fully represents all the techniques and procedures taught in the QA Course.

The QA Book is fully tabbed, allowing you, while treating patients, to access in seconds any of the clinical procedures taught in the QA Course, helping you rapidly integrate what you have learned while dramatically improving patient outcomes.

And… as is human nature, I know that some of you are thinking that although you are intrigued, you will put this off for the "right time…" when you have more money in your bank account, more time in your schedule, more energy to study and expand your clinical expertise… however, every day you wait for that "green light" is just another day that you're stifling the additional impact that you could have… and… leaving "money on the table."

However, enhancing your expertise, creating lasting outcomes and happier patients is not all you're putting off. I'm here to tell you… there will come a time when you need this work in a way that is priceless to you and/or those close to you. So… let me ask: Is there ever a "right time" …or could the "right time" be RIGHT NOW?

Picture a day when you wake up energized and excited to start your day with such a deepened sense of confidence that you are absolutely certain that you are going to be able to help anyone that walks through your door, no matter what their clinical presentation might be.

Picture a day when your loved one says: "I am so grateful for you! The problem that I have struggled with for years is now gone. You were able to fix the problem when no one else could."

Picture a day when you look back on the thousands of patients you've been privileged to see with the knowledge that they have lived healthier and more vibrant lives thanks to you, taking satisfaction in knowing that the work you are doing is so much bigger than you could have ever imagined.

Our overarching mission has always been to educate and inspire healthcare providers like you to improve their clinical expertise and thereby, the lives of their patients.

Tomorrow is not promised, yesterday has passed, there is nothing like the present… it is a gift… so why not make today the day that you take that next step in pursuit of clinical excellence and enhance your ability to help your loved ones and the patients you are privileged to serve.

As we began this journey together, I mentioned that in late November 2021, I lost my colleague, business partner, personal physician, mentor and dear friend, Dr. Wally Schmitt. His absence is felt every day as I and others continue to be inspired by his work and are committed to carrying on his legacy.

Frequently, I reflect on the conversation Wally and I had had not so long ago when I realized that what he had developed was a physiologically based, basic science driven context for clinical thinking that gave birth to a neurological (and biochemical) hierarchy for the ordered application of clinical procedures and techniques… and I asked, "Where is this written down?

As you may recall, he replied, "It's in my head."

I boldly responded, “You’re going to have to put it on paper! Tomorrow is not promised, and, God forbid, if you should die unexpectedly, your life’s work will go with you. You can’t let that happen.”

I am so grateful that I spoke up and encouraged him to take action on that day, because now, even though he has passed, his legacy lives on, changing the lives of patients and practitioners alike with what has been created. I can’t tell you how often I've put things off, both big and small, thinking that I would have time for them later... but later never came.

Dr. Schmitt's final lesson to me was how much of a gift each day truly is.

As experts and leaders in healthcare, you and I have the awesome responsibility and privilege of enhancing the quality of life of those we serve.

We don't know how long we have to live or love or serve... that's why it’s so important to take action NOW on the things that matter.

I encourage you to make the concepts and principles taught in Quintessential Applications an integral part of your therapeutic arsenal.

I assure you… You won’t regret it.

It is said, “Your destiny is created in the moment of decision.” Take advantage NOW of the 1 week free trial by registering at www.qahomestudy.com.

Make our gift to you, a gift to all those you are privileged to serve for years to come.

Conclusion

An “In Memoriam” webinar to honor the life and legacy of Dr. Walter H. Schmitt was held on December 1, 2020. It was attended by a vast gathering of friends and family, colleagues and patients, from the four corners of the globe.

The recording of the “In Memoriam” webinar is available at https://qahomestudy.com/dr- wally-schmitt-memorial/.

Dr. Wally, as many called him, served with a dignity of bearing, authenticity, and humility that seemed almost other worldly, yet he was very down to earth and approachable… and all this without expectation.

Dr. George Goodheart, Jr., Wally's neighbor as a boy and mentor as a young physician remarked: "There is an approach in healthcare that helps the doctor understand functional health disorders (the early stages of disease processes) and provide direction toward optimal treatment of these dysfunctions still in the repairable stage."

Wally dedicated his life to the principle of restoring function and gave birth to a clinical approach and thought process that guides the physician through the forest of the patients' symptoms toward a favorable and often remarkable outcome.

People from every walk of life, diverse in country of origin, culture and ethnicity have been influenced by Wally's vision for AK and its role in easing unnecessary suffering the world over.

Among his many students was a medical physician that, after attending the QA Course in Orlando, Florida remarked "Quintessential Applications has the seed within it to change the way medicine is practiced the world over."

Thankfully, Quintessential Applications, often referred to as "the ideal way to organize AK," will be taught by Wally for years to come, as his seminal work has been recorded and is available online at https://qahomestudy.com.

Reverend Dr. Katie Crowe, who presided at his funeral service on the Wednesday prior to Thanksgiving 2020, opened with these words:

"An esteemed colleague of Wally's, reflecting on meeting him more than 20 years ago, said, "I then realized that it was possible to be a genius, kind and humble at the same time."

Another shared gratitude for Wally's life and the love, healing, laughter, and richness he brought into the world.

Still another noted that Wally's inexhaustible contributions improved the lives of every one of his colleagues and millions of their patients as well. He was… referred to as a legend in his field."

In a prayer delivered that same day by Reverend Tommy Grimm we find the following: "We give

thanks for his warm and wide smile, his easy manner, his kind touch….

We celebrate his vigor for life, his joy in skiing, dancing, and sport, his devotion to his family, the love he nurtured over so many years in the covenant of marriage with Anne.

We give thanks for the burdens Wally lifted and the care he provided; for the pain he alleviated, and the compassion he carried. In his field, we marvel at the practitioners he mentored, and the legacy he left."

And finally, comments and reflections from some of the physicians whose lives he touched:

"It is difficult to accept that he is no longer with us, but… his legacy will live on for all future generations of AK practitioners through his work and contributions. …mostly I will remember Wally for his pure kindness and compassion, which is perhaps the greatest legacy for any practitioner or person."
Dr. Tracy Gates, United Kingdom

"Wally… was the most wonderful dancer. He knew his moves and how to command us ladies into spins and dips. He danced with grace, control, joy and happiness. …the way he made me feel on the dance floor and in the few conversations we shared will remain with me. He was an exceptionally special man to be able to make this kind of imprint on the souls of so many."
Dr. Susan Walker, Australia

"I was working on my husband tonight and the flow of emotions from loss to nostalgia, to sadness, to an awareness of being part of something so profound, was indescribable. And then… the disbelief that he is no longer with us but still feeling his presence while doing his work. It was simply incredible. All I could tell my husband was that Wally's passing magnified the totality, the vastness, and the expanded greatness of his work."
Dr. Melissa Tang, USA

"There are no words of consolation… but know Wally will live on in his works and teachings, through every person he ever helped, inspired, encouraged. Like a star imprinting its light on the world, he will shine always… He shines in you! "
Dr. Tavia Rayes, USA

Suffice it to say, when any of us, that have been privileged to study, learn and practice Applied Kinesiology, use the wisdom, insights, techniques and procedures imparted by Wally in private conversations, in seminars or webinars, during countless presentations at ICAK USA and International Conferences, or the hundreds of hours of recordings that, for years to come, can be viewed online… his everlasting light "shines in you!"

Informal Papers

Volume 1, 2023-2024

Applied Kinesiology the Best Tool for COVID Care

By John Erdmann, D.C., LAc, Dibak, Dipl.O.M.

Abstract

Muscle testing and applied kinesiology is the art of finding neurological imbalances projected into the musculoskeletal system. When we have a mystery of symptoms and problems not responding to the usual standard of care,we need the body to show us where to start, continue and finish. This paper shows my flow of muscle testing and acupuncture associations to address these questions. Applied Kinesiology (AK) is uniquely suited for new and unknown diseases such as COVID. We have come a long way, but Applied Kinesiology is still the best way to read and interpret the body's reaction and response in a proactive healthy clinical setting.

Key Indexing Terms

Applied Kinesiology, Chiropractic, Traditional Chinese Medicine, Acupuncture, Muscle Testing, Goodheart, Chapman Reflexes, Meridian Therapy, COVID, Luo points.

Discussion

There is opportunity where there is strife. COVID and what the world has endured during this pandemic is no exception. There is wisdom and insight in observing nature . TCM or Traditional Chinese Medicine is the study and AK is our ability to understand what to do with that nature. The most basic concept of TCM is simplified into "Yin and Yang" as symbolized in the TaiJi symbol or otherwise referred to as the Yin and Yang circle. Where there exists deficiency, there has to be excess. Disease can be described as either excess or deficient tone for example.

Observationally, in checking any muscle system with its Yin and Yang relationships we can utilize some special acupuncture points. Let me introduce the "Luo" points. It connects Yin and Yang meridians first and then spreads out to transfer energy from deficient and excess channels. When we can balance nature's opposites, we can create "a peace on earth."

Take any muscle and its related Yin Yang paired muscle, test them "in the clear." Test them to their own reflexes, preferably their "Alarm points," for a 51% or a TL (Therapy Localization) that takes the facilitated muscle into NF (Non-Facilitated) status. If they cross TL to each others' reflexes, any change from or to Facilitation or NF then you have a Yin/Yang imbalance. This is where to use the Luo acupuncture point first. Test to see if the Luo point for either muscle facilitates the NF (Non-Facilitated) muscle or TL.

Example:

1. Test any muscle for, ie. deltoid. If Facilitated in the clear, check it's own Alarm point (Lu1) no change check the Yin/Yang muscle relationship or in this example St25 (large intestine alarm point) if now it is NF (deltoid testing weak) then we have what we are looking for.

2. The large intestine alarm point (st25) brought out the weakness and therefore it is the deficient meridian in comparison to the lung. We would treat Li 3 or the Li- Luo point.

Conclusion

Our good work is only as powerful as "How long does it last." If we fail to remove the barriers to healing or to allow "the yin and Yang to balance, it will only return to its power struggle

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Brain-Based MMT Patterns: A PAK Perspective on Dural and Mitochondrial Factors effecting Cerebral and Cerebellar, Sensory, and Motor Nerve Function

Barton A. Stark, D.C., DIBAK, DIAMA

Abstract

The author discusses common specific patterns of brain organization and dysfunction. A review of cerebellar and cerebral aspects of diagnosis and treatment regarding muscle inhibition is presented and expanded based on the author's clinical experience. Correlations to typical Professional Applied Kinesiology (PAK) findings and structural factors are clarified. Specific PAK diagnostic and treatment protocols are recommended.

Key Indexing Terms

Professional Applied Kinesiology, Functional Neurology, deafferentation, trans-neural degeneration, TBI, traumatic brain injury, concussion, brain

Introduction

Abnormal or sub-optimal brain function is a common finding in many cases of abnormal muscle inhibition observed by PAK practitioners.

Specific brain-based activities are discussed as useful manual muscle testing (MMT) challenges to determine if brain opportunities are a part of the clinical puzzle with any MMT weakness. Thus, a rapid brain-based challenge routine is presented for cerebellum and four of the cerebral lobes. These challenges are based in mainstream neurological testing, most confirmed by fMRI studies. Dural, mitochondrial, and sensory/motor nerve factors are discussed. Creative treatment efforts are also presented

This author as obserbed brain-based opportunities in a wide variety of ordinary as well as athletic patients, many of whom had been treated with limited or no success in other ways.

Brain-Based Diagnostic procedure:

Any Muscle Inhibition – challenge for strengthening:

1. Head rotation right and left with eyes straight ahead
   a. (or Nose touch, heel-shin)
   b. Indicates Cerebellum on side of head turn
   c. May need to first rule out Ocular lock and cervical rotation induced weakness
2. Olfactory stimulation right and left, one nostril occluded (ex: essential oil)
   a. Indicates ipsilateral Frontal cortex ***
   b. Can also test with eyes closed
3. Auditory stimulation right and left– (ex: tuning fork)
   a. Indicates Contralateral Temporal cortex
   b. Can also test with eyes closed
4. Visual field right and left – (ex: penlight)
   a. Shine at 45º angle lateral to medial to avoid other eye
   b. Indicates Contralateral Occipital cortex (1)
5. 4 Interlocking finger figures - (Images 4-7) (2)
   a. Indicates Parietal cortex opposite side of strengthening
   b. Helpful to have a muscle inhibition on both sides of body for testing
   c. Can also test with eyes closed
6. Note brain areas that cause strength on brain challenges listed above
   a. Some areas may not strengthen
      i. Can also test with eyes closed
   b. Cerebellum is priority side for most treatments (1)
   c. Look for outliers in cerebrum
      i. If 3 cerebral lobes strengthen on right and one on left, then the "outlier" is the one on left
      ii. treat with trans-cranial magnet therapy, acupoints, nutrients, and relevant stomatognathic areas
7. Consider findings and handedness of patient
   a. Right handed
      i. Left cerebral cortex and right cerebellum should be dominant
      ii. Right cortex and left cerebellum should be weaker
   b. Left handed – vice versa
   c. Cerebrum and cerebellum opportunities should be contralateral
      i. If ipsilateral then patient brain is a "stacked deck" (1)

8. TL or challenge treatment options from the inhibited muscle or related indicator like an Alarm Point:
   a. AK 5 Factors circuits (8)
   b. nutrients including mitochondrial ATP support:
      i. adrenals, activated B-vitamins, Mg, Mn, COQ10, Iron, Phosphorus, Copper, sun exposure, time-restricted eating, Methylene blue, NAD+; avoid PUFA oils, EMF, and excess iron (3,4)

ii. an Alarm point TL that strengthens original muscle inhibition is an excellent nutrient MMT indicator (image 8) (4, 5, 8)

c. Other potential treatment areas/methods
   i. Dural, transcranial magnet therapy, brain related acupoints (6, 8, 15, 16)
   ii. Chiropractic treatment is mostly on side of cerebellar finding (1)

9. Optional MMT for challenging the 6 Frontal lobe areas individually, retest for strengthening effect after each activity: (6)
   a. Primary Motor cortex: motor circuitry
      i. Hand grip or Finger tapping
   b. Premotor area: blueprints for motor patterns
      i. Patient touch fingers to thumb in quick succession
      ii. "Blow a kiss"
      iii. Patient demonstrates a movement involved with an injury
   c. Frontal Eye Fields: eyes motor function
      i. Patient follow an object right to left and up and down (pursuit movement)
      ii. Patient looks right, left, up, down (saccadic movement)
   d. Dorsolateral Prefrontal cortex: executive mental functions
      i. One method to test DLPC is Controlled Oral Word Association Test (COWAT) for verbal and phonetic fluency
      ii. Patient says maximum number of words in one minute, start with words that begin with F, then A, then S
   e. Orbital and Basal Areas (Orbitofrontal cortex): impulse control, socially inappropriate behaviors
      i. Stroop Test: use color word chart or can do online
      ii. Stroop test word chart has list of words like blue, green, red, etc that are colored different than the color name, so Doctor asks patient to tell the color of each word (not just read the words)
         1. Example: if the word "RED" is colored blue the correct answer is blue for that word
   f. Supplementary Motor Area and Anterior Cingulate cortex: motivation
      i. No published bedside or neuropsychological tests for the SMA or AC (6)
      ii. Can use AK Psychological Reversal (PR) methods to test patients' motivation, will, volition:
         1. Patient states: "it is true that I am motivated to accomplish _____"
         2. Patient states: "it is not true that I am motivated to accomplish _____"
         3. If 1 and 2 above give bilateral MMT inhibition and facilitation, respectively, then there is psychological conflict
            a. Test PR acupoints for strengthening: SI 3 (most common; may also need CoQ10 supplement), TH 3, SI 1, K 27, SP 21, or any B&E acupoint (see PR treatment below) (7, 8)

Treatment:

1. If available, use Trans-cranial magnetic therapy (TMT) over brain areas of opportunity while doing related AK treatments revealed by Therapy-localization (TL), primarily on side of Cerebellum opportunity
2. Example: head turn to right with eyes straight strengthens inhibited muscle …so apply relevant extremity/spinal adjustments on right side of body preferably starting in distal extremities and moving up from there
    a. Treat AK 5 Factors (esp cranial and sutural faults) ((7, 8)
    b. Treat relevant brain healing/stimulation acupoints either empirically or those which show strengthening on TL * (see image 2)
        i. Acupoints can be treated with LLLT, essential oils, electro-acupoint stimulation, or with tuning fork (ex: 128 Hz)
    c. Apply stomatognathic system adjustments/mobilizations (pelvis, spine, cranium, TMJ) (7, 8)
        i. In addition to treating common AK Pelvic Categories and Cranial faults, a particular Dural release can be performed empirically as follows to further release dural tension between the intracranial and upper cervical attachments:
            1. A gentle traction adjustment of occiput/upper cervical spine is delivered while maintaining gentle inferior traction to upper cervicals
            2. This can be done by hand or using a cervical "Y- Strap" device while using a towel or thick resistance band to maintain the inferior traction (see Image 1)
            3. Dural Observation: Palpate and visualize for lateralization of coccyx (image 3). This will indicate the side of increased dural tension as well as sphenoid tipping. (9, 10)
                a. The cervical traction mobilization can be localized with lateral head tilt to side of coccyx laterality while performing the traction mobilization
                b. Coccygeus muscle may need myo-fascial treatment on side of coccyx lateralization (9, 10)
            4. For PR Treatment diagnosed in step 9 of Brain-Based Diagnostic procedure above:
                a. Doctor treats positive acupoint bilaterally with patient doing complete eye rotations with eyes open and closed while patient states several times: "in spite of this conflict about_____, I fully accept, love, and respect myself."
                b. Retest for neutral response to original PR statements
                c. Finish with left Temporal Tap while patient states the positive motivation statement (7, 8)

3. When further cerebellar stimulation is needed:

a. Instruct patient to do warm water caloric therapy on side of cerebellar indicator once per week until indicator is resolved
    i. Use MMT indicator (side of head turn with eyes straight), or side of body lean during Romberg test
    ii. Caloric therapy: infuse a tall glass of warm water into ear using ear syringe (stop if patient has untoward reaction) (1)
b. Paravermal cerebellar area stimulation can be accomplished with extremity chiropractic adjustments, MFT, etc (12)
c. The vermal cerebellum areas are easily stimulated through spinal adjustments, and a modification of the SOT Vaso-motor Dural adjustment as shown below: (12, 13)
    i. Slow inferior to superior gliding mobilization over spinous processes from sacrum to occiput to stimulate cerebellar vermal region…and to generally release restrictions around the dural port of the IVF (where spinal dura is merging with nerve root epineurium)
    ii. pressure is applied mostly during inspiration (see image below)

Image 1

Image 2

Dural Release Treatment:
Thick stretchy band with moderate inferior pressure and Cervical Y-Strap providing gentle superior traction…20-30 seconds

- *not performed on small children, or any vulnerable patient*
- *always rule out cervical bruits, hypertension, and positive George's test*

Example: **Trans-cranial magnetic therapy** with Neodymium magnet (14) over right cerebral cortex with LLLT treatment of **Triple Heater 5**

Images 4-7……. finger figures for Parietal lobe stimulation (2)

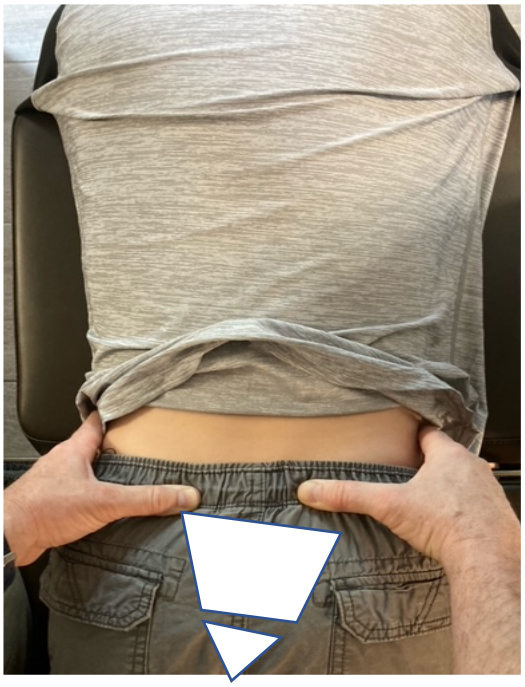


Image 3

- *Image 3* is example of coccyx lateralized to left and inferior right sacral base (9, 10)
    - Indicates left "SB+" in SOT terminology which means increased dural tension esp on left in this case
    - Thus, dural release traction can be applied with some right cervical lateral flexion
    - In this example there is also possible left PI ilium and/or Sacral apex posterior, and Spheno-basilar extension fault (13)
- ↑ dural tension (SB+) corresponds to spheno-basilar extension and sacral flexion
- ↓dural tension (SB-) relates to S-B flexion and sacral extension (13)

Other priorities for dural correction: (7, 8, 10)

- C1-3 fixation/subluxation
- Occipital posterior, anterior, lateral misalignments
- Pelvic Categories and sacral leveling
- "level the head and level the tail"

*Brain Healing Acupoints (15, 16)

- Brain: LI 4, LV 3, GV 16
- Nervous System: HT 3, GV 16
- Kidneys: GB 25, KI 3

*Brain Stimulation Acupoints (15, 16)

- Triple Heater 5 – Outer Pass
    - Usually with ST 36
- TH 20 – Minute Angle
- Gallbladder 8 – Leading Valley
- GB 15 – Head Governor of Tears
- GB 14 – Yang White
- GB 37 – Bright Light – Luo pt.
    - Often with GB40

Nutrients can speed nerve/brain healing and protection of blood-brain barrier (BBB):

- Supraspinatus inhibition is a good AK indicator for brain related nutrient testing (7, 8)
    - If not inhibited can test with eyes open and eyes closed to see if weakness is elicited
- If supraspinatus inhibition is not found, Front Mu Alarm points, Back Shu, or Source points are also excellent nutrient testing points when therapy-localized with a magnetic wand (see image 8) (4, 7, 8, 14)
- Methylcobalamin B12, Vitamin D, Benfotiamine, Alpha Lipoic acid, GLA, DHA Omega 3 fish oil, PB125 (strong NrF2 stimulator), whole complex vitamin E or A, activated B-vitamins especially B5, B6, and B9, whole food Lithium, phospholipids, Mg Threonate, ATP related nutrients
- Viscum (Mistletoe), Burbur, Pinella – brain/NS drainage remedies
- Low-carb, ketogenic, intermittent fasting, and time restricted eating can help stimulate Brain-Derived Neurotrophic Factor for brain healing and memory formation (17)
- For BBB: Berberine, Vit.A, B1, food based caffeine, curcumin, DHA, L-glutamine, Magnesium, protein

Post-treatment

Observe the result: how does the patient feel? The optimal result is for patients to feel taller, more comfortable (less pain), more relaxed, and show normalization of muscle testing.

If they experience dizziness, headache, or feel “wiped out”, then carefully consider reorganizing treatment to minimize adjustments, especially in the cervical spine, and slowly add needed adjustments as the patient demonstrates the ability to integrate the treatment stimulation without untoward reactions. These patients may require very gentle treatment methods due to trans-neural degeneration, pre-existing TBI or brain damage, a “stacked deck”, gut microbiome and/or liver toxicity, poor nutrient reserves, neurotransmitter imbalance, mitochondrial insufficiency, oxidative stress, radio-frequency (cellphone) pollution, blood-brain barrier malfunction, and/or common related diseases such as Lymes. (1, 3, 4)

Discussion and Review of Cerebrum and Cerebellum

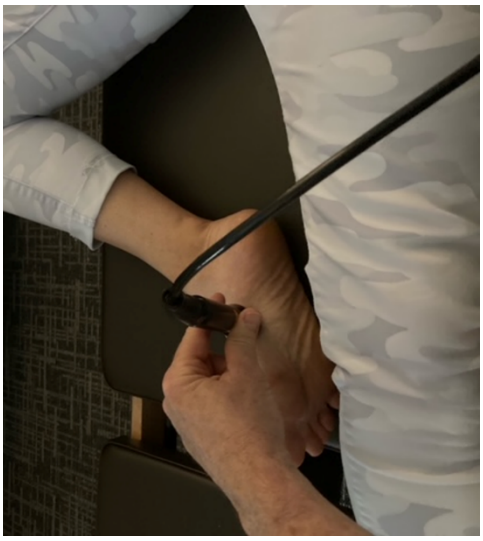
Billions of neurons in Cerebral cortex are divided into frontal, temporal, parietal, occipital, insular, and limbic lobes. Insular and limbic lobes are not covered in this paper. There is lateralization of cerebral function whereby right cerebrum is oriented to the creative, artistic, musical, and intuitive. Left cerebrum is related to language, logic, and mathematical thought. (18) Sensory/motor signals are contra-lateral in cerebrum, so right side of body is controlled by left cerebrum and vice versa.

With the bedside examination methods presented in the Brain based testing protocol above, an AK practitioner can delve into cerebral function more deeply than the traditional right and left-brain

AK challenges. Often there will be an "outlying" lobe of the cerebrum that gives a positive strengthening on the opposite side from the rest of the cerebral lobes. In this case the author recommends TMT over that cerebral lobe while performing cranial and chiropractic adjustments primarily on the side of the positive cerebellar test. If no "outlier" is found among the cerebral lobes, then TMT treatment can be focused on the side of cerebellum opportunity.

Also recommended is the Dural release shown in Image 1 above which is theorized to benefit the attachments and posture of falx cerebri, tentorium cerebelli, and meningeal sections that certainly affect cerebral and cerebellar CSF and blood flow. (7, 8, 13)

AK reflexes and acupoints are best treated on the side where they TL. Acupoints can be treated with LLLT, essential oils, electro-acupoint stimulation, or with tuning forks (ex: 128, 432, or 528 Hz tuning fork). The author recommends these types of point stimulation because they are replete with electro-magnetically and/or physiochemically sophisticated signatures that help naturally re-establish a truthful reference beam based on the holographic nervous system model. (8)



Treating KI 4 with LLLT

A brief review of cerebral and cerebellar functions and corresponding cranial/sutural faults is presented below:

Frontal lobes are associated with functions like thought, emotion, language, reasoning, problem solving, attention, consciousness, memory, and voluntary motor activity. It is home to the pre-frontal cortex, frontal cortex, frontal eye fields, motor association area, Broca's area (on dominant side of cerebrum), part of the gustatory cortex, and the primary motor cortex (motor strength, planning and coordination).

Frontal neurons communicate with the sub-cortical Caudate Nucleus and Globus Pallidus circuitry and receives input from Thalamus. Frontal lobe activity in adults also provides normal suppression of primitive reflexes. (6, 18)

In regard to mental/emotional aspects of improving human performance the DLPC, Orbitofrontal cortex, SMA, and AC cortex areas of frontal lobe are, in the author's experience, productive when improved with brain-based treatment. (6)

The portions of primary motor cortex adjacent to the midline are often affected by jamming or laxity of the sagittal suture. When the suture is corrected through manipulation there will be improvement in underlying cerebral microcirculation. This benefits motor function of the body parts that are represented on that area of the primary motor cortex (upper and lower extremities, and trunk). (13)

Applied Kinesiology abnormal muscle inhibition often involves the frontal motor areas. **Eyes closed** may accentuate frontal lobe activity. (7)

Internal or external Frontal, or sheno-basilar cranial faults. Sagittal, fronto-zygomatic, frontonasal, metopic (in children), coronal suture jamming or laxity.

Temporal lobes contain the auditory cortex and auditory association area, the olfactory cortex, Visual Area 5 (V5), and Wernicke's area (on dominant side). Related functions include hearing, memory, emotion, and speech comprehension. **Eyes closed** may accentuate auditory temporal lobe activity, whereas **eyes open** may accentuate Visual Area 5 in the temporal cortex. (18)

Temporal Bulge cranial fault. TMJ subluxation. Cruciate, Squamous, occipito-mastoid, petro-occipital, petro-squamosal, or temporozygomatic suture jamming or laxity.

Parietal lobes contain the primary somatosensory cortex, sensory association cortex, and the posterior association area. These areas process stimuli from sensory receptors for touch, temperature, nociception, and mechanoreception located throughout the skin, musculoskeletal system, viscera, and taste buds. The posterior association area is a general association area for visual, auditory, and somatosensory stimuli. (18)

*P*arietal descent, or spheno-basilar cranial fault. Sagittal, squamous, lambdoidal, or coronal suture jamming or laxity.

Occipital lobes provide awareness and recognition of visual retinal stimuli through the primary visual cortex and the visual association cortex. Right retinal signals are processed in the left visual cortex and vice-versa. Eyes open accentuates occipital lobe activity. (7, 18)

Universal, spheno-basilar faults. Occiput misalignment. Lambdoidal, occipitomastoid, petro-occipital suture jamming or laxity.

Cerebellum is commonly referred to as the "little brain" and is divided into three lobes: anterior, posterior, and flocculonodular. Generally, after identification of brain areas which need stimulation using the Brain-based/MMT protocol, the indicated cerebellum will be the priority, as it will have benefit to all other brain areas when treated.

The cerebellar circuit communicates with cerebral cortex areas, midbrain, medulla, and pons to coordinate smooth voluntary movement of arms, legs, and trunk, proprioceptive function for balance and posture regulation, and to monitor voluntary movement.

Midline body stability (spine/trunk) is controlled by the **ipsilateral vermal** (midline) cerebellar area, whereas extremities are controlled by the **ipsilateral paravermal** cerebellar areas. The vermal and para-vermal areas are easily stimulated through spinal and extremity adjustments, respectively, and a modification of the SOT Vaso-motor dural adjustment. (12, 13)

Cerebellar cortices process volitional directives from the higher brain areas, like frontal lobes, and send them back to cerebral motor cortices for voluntary muscle actions. (12)

Spheno-basilar and Universal faults, lambdoidal and occipito-mastoid suture faults; Anterior, posterior, and lateral occiput misalignment.

Neurotransmitters Review

For long- and short-term cerebral and cerebellar treatment outcome it is often essential to understand and improve neurotransmitter (NT) levels. Related NT cofactor nutrients are reviewed below. The balance of the gut microbiome also has a strong effect upon each NT. (19)

Acetylcholine (ACh) is major NT for Cerebral cortex, anterior horn of spinal cord (motor signals), Autonomic nervous system (ANS), and CN 3,7,9, and 10. Necessary nutrients for these Cholinergic pathways are Choline, Acetyl groups (Wheat germ oil), Lactobacillus Plantarum, and ionizable Calcium (calcium lactate, Ca++). The post-synaptic receptors for ACh are the Nicotinic receptors in CNS, ANS, and skeletal muscle. ACh is normally recycled in synapses through action of acetylcholinesterase. (19, 22)

The remaining ANS nerves are the post-ganglionic sympathetic nerves from the thoraco-lumbar regions. These nerves use norepinephrine at their synapses. Therefore, the relevant nutrient co-factors are protein, P-5-P, CA++, adrenals, ATP, and healthy gut microbes. (4, 19, 22)

- Serotonin
  - Majority produced in digestive system
  - Requires B3, B6, tryptophan, HCL
  - Anxious depression
- Nor-epinephrine (NE)
  - Produced in adrenals and NS
  - Post-ganglionic NT in ANS
  - Needs B6, Tyrosine, tyrosinase, HC, Mo
  - Low-down depression
- Dopamine
  - From Phenylalanine
  - Needs B6, tyrosinase, HCL
  - Parkinson's

    - Post-ganglionic NE pre-cursor
- GABA
    - Formed in Krebs so requires ATP nutrients, esp P-5-P
    - Provides background of inhibition for NS
    - Tendency to be "wired" or difficulty calming down

For NT muscle testing an imprinted NT test vial may be placed over the carotid artery as a challenge for strengthening of a brain related muscle inhibition (see below). This can give the AK practitioner an indication of which NT system to provide support. (Ex: if NE strengthens then likely patient will need protein, tyrosine, P5P, Mo, or whole vitamin C) (22)

In example to left patient is TL'ing an active HT Alarm point which provided a convenient group shoulder flexor muscle inhibition that is being used to test an NT vial over carotid artery.

Image 8

Global treatment considerations

- *Consider organ relations to persistent muscle imbalance and brain function*
    - *Primary organs are usually indicated clearly on TCM Tongue diagnosis, AK T-S line, etc (5)*
    - *Treat via CMRT visceral manipulation(13)*
    - *Organ drainage and/or nutrient support*
    - *AK Five factors (7, 8)*
- *Past emotional/physical trauma may require*
    - *Psychosomatic techniques*
        - *Switching, psychological reversal, phobia treatment, Flower Remedies, prayer, positive affirmations (7, 8)*
    - *Adaptogenic support for Adrenals and brain (4)*
- *Inherited dysfunction*
    - *Homeopathic miasm or constitutional remedies*

Sensory Receptor Discussion

- **Golgi Tendon Organ**
  - **Protects muscle and tendon from overload, tearing, and injury**
    - *Optimal function is essential for athletes*
  - 10-20 muscle fibers per GTO
  - Reflex action by way of spinal cord interneurons
  - Brain interaction through 2nd order neurons of Spinocerebellar tract
    - Facilitate vertical support and postural stability (Romberg test)
    - SOT Upper Trap line is helpful diagnostic tool for areas of interference of sensory signal quality in the dorsolateral columns of spinal cord (spinocerebellar tract) (8, 11, 13)
  - Are mechanoreceptors that transduce ***muscle force*** along large, myelinated, fast 1b axons (72-120 m/s)
    - 1b fiber synapses are mechanically and voltage-gated ion channels that require **sodium** (NA+; thus **adrenal** function, Koenisberg test), and **Kidney channel** function for energetic containment of body voltage
    - 1b fibers synapse with two interneurons in spinal cord, one to inhibit the muscle when the force limit is exceeded by way of an inhibitory post-synaptic potential that is **Glycine** dependent, and one that facilitates the antagonist when needed which is a glutamate dependent excitatory post-synaptic potential
      - GTO force limit is memorized in the interneuron (20)

- **Muscle Spindle Cell**
  - Transduce ***muscle length***
  - Brain awareness of body parts movement and position
- Above sensory functions require ***ATP*** *supplied to 1st, 2nd, and 3rd order sensory neurons, cerebellar, cerebral, thalamic, and motor neurons at every level (12)*
- *In addition to mitochondrial ATP support,* ***LLLT*** *can be applied to* ***dorsal root ganglia (DRG)*** *(see below) to encourage nerve mitochondria and optimal sensory (GTO, MSC) afferentation function*

DRG treatment using 200 mw low level laser…

- projecting energy between ribs for a thoracic spine DRG
- for lumbar DRG's can apply LLLT on anterior of body
- *Caution: not used over lower abdomen during pregnancy*

Motor Units in muscle

- Signal begins in brain motor neuron
- Received by motor unit (a neuron + group of muscle fibers)
- Motor units convert chemical energy into mechanical force/movement
- Size Principle: motor units contract from smallest to largest
  - Smaller units are also slower – Type 1
    - aerobic muscles: more mitochondria, capillaries, and myoglobin
    - aerobic base fitness important (23)
  - Larger units are faster – Type 2a, Type 2b/2x (anaerobic muscles)
  - Max muscle contraction takes ~ .5-2.5 secs (21)

Max power exertion in muscle determined by:

- Motor unit synchronization - # motor units recruited
- Rate coding – tells motor units speed of action potential discharge
- Amount of muscle available to contract (21)

Muscle/tendon injury may be more likely when some small section of muscle becomes depleted of ATP. This creates confusion of GTO and MSC afferent signal quality to cerebellum, resulting in improper motor pattern efferent signals. An imbalanced muscle contraction within the muscle may then cause injury or tearing.

Conclusion

The author has observed excellent recovery of muscle function and brain balance by treating the relevant dural, mitochondrial, and sensory/motor nerve factors along with certain brain-based home therapies.

We have seen these factors effect human comfort, healing, and performance in everyday patients to professional athletes at the highest level of sport.

Thus, we suggest the brain-based testing protocol as a normal extension of an AK MMT examination. This protocol is based in accepted nervous system challenges and, on the treatment level, can be flexible based on the practitioner's skillset.

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Loss of Hand and Finger Control When Clarinet Playing- A Case History

Robert Ozello, D.C., DIBAK

Abstract

A case history of left hand and finger loss of control when playing the clarinet. The patient had been to another chiropractor with no results. I have found that it is important to have the patient bring their musical instrument to the visit to recreate the situation that causes the symptoms. This allows me to trace the imbalances back to the causes of the symptoms. Proprioceptor technique was used to correct reactive muscles. The suspected muscle is activated. Then the muscle is therapy localized. If positive the muscle Golgi tendon organs and muscle spindle cells are challenged. They are then corrected by either approximating or separating the muscle fibers depending on the challenge results. Then the muscle is activated again to check for reactivity of the target muscle.

Introduction

The patient was unable to play her clarinet properly. She had lost control over her left hand and fingers when playing the clarinet. She was a retired music teacher and played in community band. She played the clarinet for almost sixty years and was frustrated with her clarinet playing.

Key Indexing Terms

Hand and finger control, Clarinet, Applied Kinesiology, Proprioceptor, Reactive Muscles, Cervical Dysfunction

Materials and Methods

Applied Kinesiology Manual Muscle Testing

Results

The patient's symptoms were completely alleviated after 3 visits over 2 weeks. There was improvement after each visit resulting in complete alleviation of symptoms. There was no reoccurrence.

Discussion

A 66-year-old female presented with left hand and fingers weakness and loss of control when playing the clarinet. Her fingers would slide off the tone holes and keys.

I instructed her to bring her clarinet to her appointments.

I muscle tested her left wrist flexors and extensors, finger flexors and oppones pollicis. They were all intact. When she played the clarinet all these muscles tested weak. I then had her blow into the clarinet (called the embouchure). When she did this all those muscles weakened. I then had her activate various skull and facial muscles.

When she activated her right and left platysma, right and left zygomatic, right temporalis, risorius and right procerus her left wrist flexors and extensors, finger flexors and oppones pollicis tested weak. I then corrected her right and left platysma, right and left zygomatic, right temporalis, risorius and right procerus using proprioceptor techniques on the muscle spindle cells and Golgi tendon organs.

Upon correction of those muscles the patient was able to play the clarinet without any impediment to her left hand and fingers. All muscles were corrected using proprioceptor work and strain counter strain techniques.

There were also multiple cervical fixations and subluxations that were corrected. Subluxations of C3,4 6 and T 4,5,6 were corrected. Fixations of T1/2, T8/9 were corrected.

The patient reported that she had no return of symptoms even after extended practice, rehearsal and performance sessions.

Conclusion

When a patient experiences symptoms when playing a musical instrument, when possible, I have them bring the instrument to the appointment to recreate the issue. It creates a much better result and maximum improvement for the musician. It puts the patient in the circumstances that cause the symptoms.

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Pain And Weakness When Riding A Bicycle- A Case History

Robert Ozello, D.C., DIBAK

Abstract

A case history of low back pain, leg weakness and inability to sit straight on a bicycle.

Key Indexing Terms
Low Back Pain, Leg weakness, Applied Kinesiology, Proprioceptor, Reactive Muscles, Strain and Counter Strain, Bicycle, Type 1 Diabetes, Electrolyte Drink

Introduction
The patient had trouble riding his bicycle. He was an avid bicyclist who routinely rode 100 miles or more per week. He had low back pain and leg weakness and was unable to sit straight on a bicycle.

Materials and Methods
Applied Kinesiology Manual Muscle Testing, Nutritional Evaluation

Discussion

A 61-year-old male presented with low back pain and leg weakness when riding his bicycle. He was unable to sit straight on the bicycle He also had Type 1 diabetes. The patient also had a history of numerous biking accidents with multiple broken bones and a plate in the left tibia.

The patient sent me a video of him riding a stationary training bike. I could see the rotation of his torso approximately 5 degrees to the right. He told me he could bring the training bicycle to my office, and I asked him to do so.

On each visit I corrected multiple fixations and subluxations of the spine. I also corrected a right internal frontal bone subluxation.

I had him ride the stationary bike which we set up in my reception area. By doing this I was able to find many dysfunctional muscles that were causing this unwanted rotation and weakness.

I corrected with proprioceptor therapy and strain/counter strain therapy the following muscles: right and left biceps, right and left quadriceps, right and left gastrocnemius, right and left tibialis anterior, right pectoralis major and pectoralis minor, the wrist extensors and flexors bilaterally.

The patient reported much improvement in his symptoms. He was sitting straight on his bike and most of the power in his legs had returned.

I had him fill out a diet log. Upon analysis he was drinking two bottles of Gatorade a day.
I muscle tested him while he had Gatorade in his mouth. He tested weak and upon palpation of his lower back there was considerable palpatory pain. That palpatory pain disappeared after removing the Gatorade from his mouth and rinsing. I instructed him to stop the Gatorade and switch to spring water, which he did.

The patient reported on the next visit that he couldn't believe how much better overall he felt. All symptoms disappeared and he had normal power in his legs. Interestingly he reported that his blood glucose levels had dropped considerably. He used a continuous glucose monitor. He had to reduce his daily dosage of insulin, a result he was very happy about.

Results
The patient's symptoms were completely alleviated after 11 visits over 9 weeks. He continues his intense bicycle riding symptom free.

Conclusion
This is a very interesting case that showed how strong structural corrections combined with dietary changes which produced a result far more than what the patient expected.

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The Yin and Yang of Treating COVID

By John Erdmann, D.C., LAc, Dibak, Dipl.O.M.

Abstract

Ever hear the saying “Giving pearls to Swines?” We were given the “pearls” of Applied Kinesiology in 1964 and often it feels like scratching the surface of what AK can do for the world. In this discussion we will review the basic applied kinesiology meridian therapy flow and how it’s uniquely situated to help conditions like COVID care and residuals.

Key Indexing Terms

Professional applied kinesiology, goodheart applied kinesiology, basic applied kinesiology, meridian therapy, traditional Chinese medicine, chiropractic,cranial sacral therapy, neurology, COVID care.

Discussion

In basic “Applied “Kinesiology” (AK), we have a designation known as “Professional Applied Kìnesiology” (PAK) or sometimes just Dr. Goodheart Applied Kinesiology. This important delineation points to the organization ICAK (international College of Applied Kinesiology) which maintains scientific and science based methods. In AK we learn to test specific isolated muscles and to find “weak“ or more aptly stated neurologically non-facilitated muscles (NF). We then try to find what fixes these muscles. The “game” is on. The AK doctor is trained to look for “the five factors” first and then to a myriad of other tools. The five factors include whole disciplines such as chiropractic and meridian therapy as in the Traditional Chinese Medicine (TCM), other factors such as CSF is viewed as a specialty of “Cranial Sacral Therapy, and not least of which we have what’s known as “Chapman’s and Bennet’s reflexes named after the two doctors who discovered them. This model or standard of treatment has always served AK doctors well. The biggest question is only a matter of where do you start and where do you finish. A common concern with residual complications from diseases like COVID. Many AK teachers have shared their flow charts and even spun off their own techniques with their specialized approaches. Most of which have their own merits, but can confuse the beginner or lay person on the outstanding and irrefutable, scientific benefits of basic AK.

So what happens when the five factors fail to offer lasting correction, or at least comes back after a “temperal tap?” We call this a 51% or 49% rule or tipping point in which something appears better, but is hiding more important components. I have left out the possibility of not being able to correct a muscle, because this is quite rare with the certified professional applied kinesiologist.

Further, in this discussion, we will dive into continuing our basic AK approach by being persistent and double checking even triple checking all of the possible scenarios using tools like temporal tap, pinch test, or sedation muscle testing to evaluate our effectiveness. Diving into the

little details of the 100 hour basic course, it is common for doctors to take 2-3 times to feel competent and years of practice to master. I have found that TCM as it's used in PAK, to be the game changer after all the usual suspects and good chiropractic care has been treated.

In the meridian theory system we can be sneaky in our choosing of points as we have so many choices. The basic course refers to 3 main possibilities concerning the pulse point method as taught in AK. The 3 most common sequences show up approximately 80/ 15/ 5 percent of the time. Too often, since these second two scenarios are infrequent (15/5%) the novice user forgets how to treat the 15 and 5 percent and easily grows frustrated when trying to apply the first possibility technique where it is not indicated. Let's review the basic flow of these three possibilities. The most common start is having the patient properly therapy localizing (TL) their own points along the wrist. A previously strong indicator muscle will weaken, 80% of the time, leading us to one elemental YIn/ Yang relationship pulse point to figure out. We diagnose which meridian pair by testing both muscles and having one muscle NF or weaken. That muscle 80% of the time will strengthen to its own alarm point. (FYI. Shortcuts can be taken in all of the above, and yet it may lead to a more frustrating complication that advanced knowledge can only fix) . Continuing the 80% story, you would adjust the vertebral level associated point, and stimulate either digitally,or with a laser, or acupuncture the tonification point associated with the muscle.

Example: doctor testing the rectus femoris strong in the clear, the patient TL's the pulse points on one wrist then the other wrist with only one side producing a weakness in the muscle. Carefully, controlling for one point at a time, only one point tests weak. Let's pretend it's the metal point. The doctor then tests both metal point muscles. Say the TFL for the large intestine and then the deltoid for the lung. If needed the other related muscles like serratus or hamstring etc. stop with the first muscle found. See if it strengthens to its alarm point. 80% of the time it does. Then fix as stated above. Ie. Deltoid strengthens to lung alarm point. Evaluate for 3rd thoracic adjustment. Laser lung 9 point. Retest, and muscle is strong. Temporal tap to test the muscle for enough treatment.

.15% of the time you find a pulse point, and you find a related NF (weak) muscle. Except, this time the weak related element muscle does not correctly strengthen to its alarm point. Now we travel to are 24 hour clock and start testing adjacent and across or keep sequentially moving over until we find an alarm point that will strengthen our muscle. In this case, you would treat the LUO point of the previous 24 hours clock, jump starting the excess energy from the alarm point you found to help flow back into the clock. For example, the weak muscle. Ie. Pretend gallbladder alarm strengthened the deltoid, then we would use the liver LUO point or LV 5. And evaluate the liver associated vertebrae T9 for adjustment. (Remember the rule: always treat the first deficient LUO meridian not the excess this also pertains to right and left same meridian related muscles).

Finally, in the 5% scenario, we find our pulse point. Let's keep it as the metal element. However, we check all the metal (lung and large intestine) muscles to no avail or weakness . So now we go to the 5 element or what's known as the sheng and ko cycle.

Test first looking for muscles associated on the sheng cycle then go back on the ko and so on. Do this until you find a weak muscle. This should verify by strengthening to the pulse point from the command point chart. For example: we have a metal positive pulse point and we find no metal

muscles to be affected. So we go to the sheng cycle and test bladder and kidney muscles. If we find one great if not, we go across on the ko cycle to the fire muscles, if not forward to earth muscles etc.

Let's pretend we found our metal pulse point and the psoas kidney muscle. We would look up kidney on the metal point which is Ki 7 (test for corrective TL) and then stimulate that point.
The meridian system and its proper evaluation and energy balancing, lays the ground work to a healthier and happier patient.

COVID doesn't change the meridians, rather makes it even more vital to be evaluated and corrected. Disease shows up first in the energy system long before it manifests into a physical concern.

Conclusion

Dr.Goodheart was a genius in his synthesis and integration of TCM meridian system and a practical muscle testing tool to apply the best treatment every time. Nothing, including COVID comes and goes without first showing up in our energy / meridians. We have a great tool to evaluate this, and help our bodies understand it's issues. When we become proficient and balancing energy, we will be equipped for all the new and emerging variants.

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