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Effecting Pituitary Secretion of Oxytocin during Labor

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Instructions to Authors

The American Academy of Osteopathy® (AAO) Journal is a peer-reviewed publication for disseminating information on the science and art of osteopathic manipulative medicine. It is directed toward osteopathic physicians, students, interns and residents, and particularly toward those physicians with a special interest in osteopathic manipulative treatment.

The AAO Journal welcomes contributions in the following categories:

Original Contributions
Clinical or applied research, or basic science research related to clinical practice.

Case Reports
Unusual clinical presentations, newly recognized situations or rarely reported features.

Clinical Practice
Articles about practical applications for general practitioners or specialists.

Special Communications
Items related to the art of practice, such as poems, essays and stories.

Letters to the Editor
Comments on articles published in *The AAO Journal* or new information on clinical topics. Letters must be signed by the author(s). No letters will be published anonymously, or under pseudonyms or pen names.

Book Reviews
Reviews of publications related to osteopathic manipulative medicine and to manipulative medicine in general.

Note
Contributions are accepted from members of the AOA, faculty members in osteopathic medical colleges, osteopathic residents and interns and students of osteopathic colleges. Contributions by others are accepted on an individual basis.

Submission
Submit all papers to Robert Clark, DO, Editor-in-Chief, 3243 Clayton Road, Concord, CA 94519. Email: editoraaoj@yahoo.com in word format.

Editorial Review
Papers submitted to *The AAO Journal* may be submitted for review by the Editorial Board. Notification of acceptance or rejection usually is given within three months after receipt of the paper; publication follows as soon as possible thereafter, depending upon the backlog of papers. Some papers may be rejected because of duplication of subject matter or the need to establish priorities on the use of limited space.

Requirements for manuscript submission:

Manuscript
1. Type all text, references and tabular material using upper and lower case, double-spaced with one-inch margins. Number all pages consecutively.

2. Submit original plus two copies. Retain one copy for your files.

3. Check that all references, tables and figures are cited in the text and in numerical order.

4. Include a cover letter that gives the author's full name and address, telephone number, institution from which work initiated and academic title or position.

5. Manuscripts must be published with the correct name(s) of the author(s). No manuscripts will be published anonymously, or under pseudonyms or pen names.

6. For human or animal experimental investigations, include proof that the project was approved by an appropriate institutional review board, or when no such board is in place, that the manner in which informed consent was obtained from human subjects.

7. Describe the basic study design; define all statistical methods used; list measurement instruments, methods, and tools used for independent and dependent variables.

8. In the "Materials and Methods" section, identify all interventions that are used which do not comply with approved or standard usage.

FLOPPY, CD-ROM or DVD
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Provide a 150-word abstract that summarizes the main points of the paper and its conclusions.

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3. Include a caption for each figure.

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References
1. References are required for all material derived from the work of others. Cite all references in numerical order in the text. If there are references used as general source material, but from which no specific information was taken, list them in alphabetical order following the numbered journals.

2. For journals, include the names of all authors, complete title of the article, name of the journal, volume number, date and inclusive page numbers. For books, include the name(s) of the editor(s), name and location of publisher and year of publication. Give page numbers for exact quotations.

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All accepted articles are subject to copy editing. Authors are responsible for all statements, including changes made by the manuscript editor. No material may be reprinted from *The AAO Journal* without the written permission of the editor and the author(s).

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THE AAO JOURNAL
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Tradition Shapes the Future • Volume 17 Number 2 September 2007

A Peer-Reviewed Journal

The Mission of the American Academy of Osteopathy® is to teach, advocate, and research the science, art and philosophy of osteopathic medicine, emphasizing the integration of osteopathic principles, practices and manipulative treatment in patient care.

In this Issue:

Contributors

Thomas M. Richards. The Establishment of a Neuro-musculoskeletal-OMM Service in a 700 Allopathic Physician Practice. This paper was submitted in partial fulfillment of the requirements for the Fellowship in the American Academy of Osteopathy which was conferred in 2007. The author reviews the multi-year process of gaining recognition of the value of osteopathic manipulative medicine in an allopathic environment. He gives valuable suggestions for others who face a similar task. **(p. 13)**

Jay B. Danto, Deborah Z. Danto and Antoinette T. Burns. Examining the Somatic Dysfunction: Lessons Learned in Practice. This paper compares several examination and treatment methods. An important lesson is dysfunctions can exist in multiple forms simultaneously. **(p. 19)**

Shannon N. McAfee and Anthony G. Chila. Occipital Compression And Its Potential Uses In Obstetrics. This paper was completed in fulfillment of requirements for the Norman J. Larson Clinical Research Program at Ohio University College of Osteopathic Medicine (OUCOM). Dr. McAfee proposed and wrote the paper during her year as a Predoctoral Fellow, OMM (OMS-V). Receipt of a DOM degree from OUCOM occurred in 2006. She is now in her 2nd Postgraduate Year, Obstetrics and Gynecology, at Grandview/Southview Hospital; Dayton, OH. Dr. Chila founded and directs this program. **(p. 27)**

Regular Features

DIG ON: Steve Paulus, Independence and Interdependence. In order to be a community, we need to cooperate with each other and other professionals. At the same time, we need to maintain our independence and with that our identity. Where do we fit and how do we keep the balance? **(p. 25)**

FROM THE ARCHIVES: A. T. Still advises on how to care for the obstetric patient osteopathically from this chapter in *Research and Practice.* **(p. 8)**

CME CREDIT: AAOJ offers CME credit to readers who complete the CME quiz in this issue. **(p. 24)**

BOOK REVIEW: *Osteopathic Medicine RECALL*, a question and answer format review book and study guide for students, is another in the RECALL series of review books from Lippincott, Williams and Wilkins. **(p. 30)**

ELSEWHERE IN PRINT: Medscape is an online source for news, opinions and CME. Most of its services are free and subscribers get weekly email with the latest medical news in a vast range of topics. Several samples of potential interest to *AAOJ* readers are presented. **(p. 31)**

2007 AAO Course Calendar

September 7-9
Beyond Facilitated Positional Release
LECOM/FL, Bradenton, FL
Stan Schiowitz, DO, FAAO, Program Chair
CME: 20 Category 1A (anticipated)

September 29
One-day course: *OMT without an OMT Table*
Ann L. Habenicht, DO, FAAO, Program Chair
San Diego Marriott, San Diego, CA
CME: 8 Category 1A (anticipated)

September 30 – October 4
AOA Convention: AAO program: Adjuncts to OMT in the Treatment of Chronic Pain
San Diego Convention Center, San Diego, CA
John E. Balmer, DO, Program Chair

October 19-21
Beyond Facilitated Positional Release
COMP/CA, Pomona, CA
Stan Schiowitz, DO, FAAO, Program Chair
CME: 20 Category 1A (anticipated)

November 1-3
Prolotherapy Weekend for ALL Levels and Experience
UNECOM, Biddeford, ME
Mark S. Cantieri, DO, FAAO, Program Chair
CME: 20 Category 1A (anticipated)

November 9-11
Beyond Facilitated Positional Release
DMUCOM/IA, Des Moines, IA
Stan Schiowitz, DO, FAAO, Program Chair
CME: 20 Category 1A (anticipated)

December 1-3
Osteopathic Approaches in Gastroenterology: The Hind Gut
Holiday Inn Golden Gate, San Francisco, CA
Kenneth Lossing, DO, Program Chair
CME: 24 Category 1A (anticipated)

View from the Pyramids

Robert C. Clark

A funny thing happened on my way to the convocation. As I stepped off of the elevator to register, an acquaintance greeted me, "Hi Bob, there is something you need to do!" A greeting like that quickly gets your attention. "You need to apply for the editorship of the *AAOJ*." I told my colleague that I had applied and instantly saw satisfaction in her face. That was just the first of several comments from friends and colleagues encouraging me to seek the editorship. I was both amazed and honored by their conviction that I was the right person to follow in the august footsteps of Raymond J. Hruby, DO, FAAO and Anthony G. Chila, DO, FAAO. The publications committee and the board of trustees confirmed my colleague's belief.

Upon formal notification of my appointment, I had several thoughts. The first was, "now what have I gotten myself into?" Fortunately, I have the great staff of the AAO to help me. The second was a quotation from the renowned investor, Warren Buffet, when he started his investing and management business using mostly other people's money, "now don't mess up".

The question is "where do we go from here?" The format of the *AAOJ* is solid, which means there will be few changes. In the publishing world it is often said that a publication is only as good as its editor. Others claim that a publication is only as good as its writers and contributors. I subscribe to the latter philosophy. As part of that philosophy, the editor's role includes working with the writers to enable them to achieve their best. Few things hurt a writer more than poor grammar, syntax and spelling. My mother taught English grammar, business English and journalism. She had me help her grade her high school students' papers when I was in middle school. That was an education unlike any other!

One important lesson is that all primary English speakers have two languages. The first is the spoken language. Conversation is alive and spontaneous. It allows many short cuts including grammatical and syntactic aberrations that are intolerable and even unpleasant in our second or written language. Written language has dialects based on formality but it rarely allows the laxity of rules that are invisible in our spoken language. Body language, tone, pace and inflection are the punctuation of spoken language. They are impossible to translate to the written language so we must use a different structure. For the person for whom English is a second language, writing in primary English can be very difficult. The primary English speaker reading translated English finds the article very difficult to read and understand. I ask writers who are not primary English speakers to please have their writing professionally translated.

James Cox, PhD taught the class in educational tests and measurements for my Masters Degree program. He was a master of writing test questions. He maintained the first reason for writing a test question on paper (or a word processor) was to have something that could be **edited**! The first draft is rarely the final version! The first draft that any author produces is the same thing: something to be edited from a rough first draft to a great article.

Over the past year, I have worked with several student authors helping them prepare their first articles for the publications committee of the Osteopathic Physicians and Surgeons of California. The last author was not a primary English speaker but worked diligently. Despite this difficulty, I only had to edit his article twice.

My own articles are no exception to the editorial process. The article that I did with Thomas M. McCombs, DO, presenting an OMT protocol for students in allopathic hospitals, went through six edits before we felt it good enough to submit to the *AAOJ*. As part of our process, we had one doctor and two non-doctors review and edit our article. Please be assured, not every article needs this much review.

My promise to all authors is to help them, as my friends, my colleagues, and my family with careful, thoughtful, but critical editing. I look forward to working with the AAO staff and the *AAOJ* editorial board. In time, I hope there will be a panel of reader reviewers who will help me put together readable and pertinent issues of the *AAOJ*. Several journals have reader reviewer panels whose purpose is to provide the perspective of the working practitioners on the articles for publication. I have done this for the *Journal of Musculoskeletal Medicine* for 20 years. The editorial rationale is to keep the editors in touch with the readers and their interests. If you are interested in being a reader reviewer, or if you have any other suggestions, please contact me at my e-mail address: editoraaoj@yahoo.com.

There are members whose knowledge of the profession's history and literature are superior to mine. It is logical that one or more of them could act as my guide for the "From the Archives" section of the *AAOJ*. Additionally, readers who have read a book or a new journal are invited to submit a review. Those who have read other journals and found an article of interest that may not be readily available to the rest of the membership are invited to submit brief summaries for the "elsewhere in print" section of the *AAOJ*. Such contributions will be greatly appreciated. Please use the e-mail address listed, so that you will receive rapid acknowledgement of your submission.

View from the pyramids is exciting. We live in interesting times. I leave you with a thought from a senior colleague. This distinguished gentleman commented that a major reason for his attending the convocation is to share his many years of accumulated experience and knowledge with younger doctors →

and students. He observed that with the increasing number of osteopathic colleges and the limited amount of time for the colleges to teach the skills of OSTEOPATHY, the philosophy and message of osteopathy are being diluted. The convocation is an event for many to see the profession as it once was, is still practiced by some and as it can be once again. I add that the convocation is a way of sharing that knowledge one on one or in small groups. The *AAOJ,* however, is a way to share that knowledge with the entire membership. I dedicate my efforts as the new AAOJ Editor to this vision. With your help, we will succeed. ❒

2008 AAO Course Calendar

January 18-20
OMT Management of Key Lesions
PCOM/GA, Suwanee, GA
Edward T. Stiles, DO, FAAO, Program Chair
CME: 20 Category 1A (anticipated)

March 26
Fluid Techniques for Interosseous and Embryological Articulations of the Thorac: Specific Evaluation and Treatment
Bruno Chikly, MD
InterContinental Hotel, Dallas, TX
CME: 4 Category 1A (anticipated)

March 26-30
AAO Convocation: Unlocking the Secrets of the Thoracic Cage
John G. Hohner, DO, FAAO, Program Chair
InterContinental Hotel, Dallas, TX
CME: 27+ Category 1A (anticipated)

March 30 - April 1
Osteopathic Approaches in Pulmonology: the Lungs and Airways
Kenneth J. Lossing, DO
InterContinental Hotel, Dallas, TX
CME: 20 Category 1A (anticipated)

May 16-18
The Twig Unbent: An Osteopathic Approach to Common Orthopedic Problems in Children
Jane E. Carreiro, DO, Program Chair
UNECOM, Biddeford, ME
CME: 20 Category 1A (anticipated)

July 11-13
Masters Course:
Comparing FPR, Counterstrain and Still Technique
Ann L. Habenicht, DO, FAAO and John G. Hohner, DO, FAAO, Co-Chairs
CCOM, Downers Grove, IL
CME: 24 Category 1A (anticipated)

October 25
Avoiding Disaster: Preparing for Flu Pandemic
Dennis J. Dowling, DO, FAAO, Program Chair
Las Vegas, NV
CME: 8 Category 1A (anticipated)

November 7-9
Masters Course: Muscle Energy with
Philip E. Greenman, DO, FAAO, Fred L. Mitchell, Jr., DO, and Edward G. Stiles, DO, FAAO
Stephanie Waecker, DO, Program Chair
AZCOM, Glendale, AZ
CME: 24 Category 1A (anticipated)

December 5-7
An Osteopathic Approach to Treat Cranial Nerve Dysfunction: ala Barral
Kenneth J. Lossing, DO, Program Chair
COMP, Pomona, CA
CME: 24 Category 1A (anticipated)

Dig On

Independence and Interdependence

Stephen F. Paulus

In unpublished notes written by A. T. Still in the early 20th century, he referred to the osteopathic profession as a "Brotherhood of Independent Thinkers". Osteopathy was founded by a radical individualist who was an explorer and philosopher. He did not invent osteopathy; he discovered eternal principles of nature. Most importantly, Dr. Still created a teachable system of health care by founding the first osteopathic school and setting up the structure for osteopathic professional organizations to come into being.

It has been said that bringing osteopaths together is like "herding cats". Our profession was founded by a self-reliant individual who was a free spirit. Dr. Still not only encouraged integrative and independent thinking, he demanded it. Functionally, osteopathy was established in the late 19th century as an alternative to allopathic medicine. Doctors of osteopathic medicine (DOs) were thought of as being eccentric and were forced to operate outside of mainstream medicine.[1] Because we were seen as outsiders and eccentrics we were attacked by our allopathic brethren for most of the 20th century.

It was the constant barrage of harassment from the allopathic profession that forced the independent minded DOs to band together for professional survival. We were linked primarily through survival mechanisms, not just by a common philosophy. As a profession, we created a separate medical school structure, a distinct post-graduate education system of internships and residencies, and an independent hospital network of osteopathic institutions. For decades, DOs were not allowed to practice in allopathic hospitals, join allopathic professional organizations, or participate in government-sponsored programs for physicians. We were discriminated against and segregated from the greater medical community in the United States.

Segregation and discrimination bound all DOs into a cohesive unit, even in the presence of personal or osteopathic professional disagreement. Philosophic differences between DOs became practically inconsequential when faced with the foreboding of attempted legal and financial destruction by the local and national allopathic organizations.

During the past 20 years, barriers between DOs and MDs have been functionally eliminated. DOs are fully integrated into the allopathic system. We are no longer segregated. We are rarely discriminated against, as long as we practice in alignment with allopathic principles. DOs and MDs are full partners in the health care industry in the United States.

Once DOs became integrated and were no longer under attack, it was not necessary to maintain systems of osteopathic professional cooperation. The diverse individuals within the osteopathic community became a professional centrifugal force-proceeding in a direction away from their source. Being under attack for nearly 100 years held the osteopathic profession together. Being integrated dissipated our cohesion.

If we were once bonded by survival mechanisms and a common philosophy, what happens when survival mechanisms are no longer needed? Once those DOs, who did not utilize the osteopathic principles and manipulation, saw themselves as equals to MDs, they also envisioned themselves as being separate from DOs who practiced osteopathy in alignment with Dr. Still. Most of our DO brothers and sisters have now allied themselves with allopathy and have quietly placed osteopathically-oriented DOs on the outside of the health care system in the United States.

Because the osteopathically-oriented DOs are small in number, they have no real political power within local and national allopathic or osteopathic societies. There is a new insidious style of discrimination that is directed at the osteopathically-oriented DOs and it is perpetuated by both MDs and the majority allopathically-oriented DOs. Because this new form of intolerance is insidious, there has not been a comprehensive professional outrage or sense of injustice that motivates cohesive political actions.

Are osteopathically-oriented DOs only linked by independent thinking and a common philosophy? Independent thinking, unfortunately and usually overrules our shared philosophy and the practice of osteopathic manipulation. Widespread independent thinking by itself can be divisive to professional organizations. Our national osteopathic medical societies contain a very small percentage of osteopathic physicians who regularly utilize osteopathic principles and manipulation. The independent minded DOs have failed to generate enough cohesiveness or power to have significant influence on national osteopathic policies. National osteopathic policies are, more often than not, aligned with allopathic medical values.

Dr. Still, however, referred to the osteopathic profession not just as a group of independent thinkers, but as a "brotherhood". Brotherhood is a feeling of fellowship and compassion for all people. It is an organization or a whole body of persons engaged in a common purpose or in a particular profession. A brotherhood is an organized system of interdependence.

Independent thinkers usually separate themselves and are generally not aligned with groups. Dr. Still, however, asked that we not only become independent thinkers but also brothers and sisters. We agree to be different and we grant permission for diversity. Osteopathically-oriented DOs are bound by a common purpose and potentially by our fellowship. Most of all, we agree upon the principles of osteopathy as discovered by Andrew Taylor Still.

The future of osteopathically-oriented DOs depends upon cooperation among diverse individuals. It depends upon independent thought and interdependent action. I believe that our future requires a model of cooperation based upon the celebration of inclusion, democracy, and member participation in organizations that promote osteopathic principles and the practice of manipulative medicine. The essential philosophy of osteopathy is based upon cooperation, which is holistic. Cooperation is also based upon solidarity and harmony. Our future requires that we engage in fellowship and cooperation as the binding elements in our osteopathic professional organizations. We do not need to artificially utilize survival mechanisms to bind us. In fact, to use survival mechanisms as a professional linkage device is dysfunctional and based upon a disease model.

True osteopathy is model based upon health not disease. It is based upon this teaching of Dr. Still: "To find health is the object of the doctor. Anyone can find disease."[2] DOs who practice osteopathic philosophy and manipulation every day with every patient have an alternative pathway to professional holism. We can foster societies of interdependence based upon sharing a common osteopathic philosophy and having a respect for diversity. We can base our fellowship upon health rather than the lesion of survival mechanisms. And, we can recognize the need for osteopathic independence and the creativity that arises from our distinctiveness. Finally, our success depends upon engaging our interdependence and admitting that what connects us is more important that what makes us unique.

References

1. Still National Osteopathic Museum, unpublished writings of A. T. Still, ATS. Box 2, Brotherhood of Independent Thinkers
2. Still, A. T. *Philosophy of Osteopathy.* 1899 (reprint, American Academy of Osteopathy, Colorado Springs, CO. 1977), p. 28

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From the Archives

Obstetrics

From: Osteopathy Research and Practice, Andrew Taylor Still, pages 309-322

(This chapter is not written as a treatise on obstetrics but for the benefit of the young obstetrician in emergency cases.)

Definition. The art of managing childbirth cases; that branch of surgery, which deals with the management of pregnancy and labor. DORLAND.

Obstetrics is a term used to designate the mechanical manipulation used by an obstetrician in delivering the uterus of the fetal contents when it has finished the work of constructing a human body known as a child.

In studying obstetrics the student should acquaint himself with the normal pelvis and a normal delivery, because more than 90 per cent of all cases are of that kind. Our works on obstetrics seem to lose sight of the normal and hold up the horrors of the abnormal before the young operator. I think it is a mistake to spend so much time in talking and lecturing upon and illustrating with cuts and pictures cases of delivery through a pelvis with the worst possible deformities. It is normal midwifery we want to know and be well skilled in. This you cannot know by a study of the abnormal only. You will likely never find two abnormal conditions presenting the same form of bone or pelvis. If you have a normal condition fixed in your mind, you will detect all variations from the normal and be prepared to govern yourself accordingly. If on examination you have an abnormally formed pelvis, you will have plenty of time to call counsel and can then be governed by the conclusion.

Development of the Fetus

Nature has placed all the functions of animal life under laws that are absolute and must be obeyed. Just as long as digestion and assimilation keep in harmony and the mother generates good blood in abundance, the child grows; and by nature, the womb is prepared to carry the work of building the body of the child onto completion.

Note the similarity of the stomach and womb. Both receive and pass nutriment to a body for assimilation and growth. When the stomach is overloaded, digestion and assimilation stop and sickness begins; then the decaying matter is taken up by the terminal nerves and conveyed to the solar plexus, and the nerves of ejection throw the dying matter out of the stomach. Apply this reasoning to the stomach below, which sickens and unloads its burden. Is this sickness natural and wisely caused? If this is not the philosophy of midwifery, what is?

As soon as a being takes possession of the womb, the commissary of supplies begins to furnish rations or blood for that being, which builds for itself a dwelling place. The house or child must be built strictly to the letter of the specifications. All the material to be used in the house must be exact in form and of given strength, sufficient to furnish the forces that may be necessary in the future to execute the hard and continued labor of mind and body. Much bone and flesh must be put into its body and some of all elements known to the chemists must be used and wisely blended to give strength.

The manufacturing chief, through the quartermaster, delivers a full supply of all kinds of material for the work. A question is asked: On what road does the quartermaster send the supplies? There is but one system over which the supplies are brought and that is the uterine system of arteries.

When the engine is complete the stay-chains should be cut and let it run out of the shop on an inclined plane. The machinist opens the door of this great manufacturing shop and the engine rolls out by the powers and methods prepared to deliver finished work. The door opens because the lock is taken off by a key that fits and opens it. Muscles that have for so long a time held the door shut stop their resistance, and other muscles by getting sick, convulse with sufficient force to easily push the new engine of life out into open space by natural methods. Be careful that the engine does not deface or tear the door as it comes out.

Morning-Sickness

When a woman disregards the laws of nature to such an extent as to over-load the stomach beyond its powers and limits, distending it so that it occupies so much space as to cripple the process of digestion and retain the food, decomposition will set up an irritation of the nerves of the mucous membrane to such an extent as to cause sickness and vomiting. When the nerves of absorption are furnished with material, which is not nutritive but destructive and detrimental, the effect of such substances is to cause an irritation of the nerves and they proceed to relieve the system by "unloading."

The stomach is a sac, and when filled to its greatest capacity, it irritates all the surrounding tissues and they in turn irritate the stomach. Naturally, it unloads to get relief. Another vessel similar in size and action is the womb or uterus. It receives nourishment for a being, which nourishment is contained in the blood, and is conveyed to it in the channels commonly known as uterine arteries. This nourishment is taken there to sustain animal life, and is appropriated to the development and growth of the human being.

The placenta in the womb is provided, with all the machinery necessary for the preparation of blood, to be used in the formation and development of the child. The stomach and the womb receive and distribute nourishment to sustain animal life. Both get sick; both vomit when irritated; they discharge their load by the natural law of "throw up" and "throw down." Note the similarity and the differ-

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ences and govern yourselves accordingly. The one is the upper stomach that takes coarser material, refines it and keeps the outer man in form and being. The other contains the inner man or child which, when it becomes an irritant, is thrown out by the nerves that govern the muscles of ejection.

At this time the arteries and nerves are active in the development of the fetus, and any disturbance of their normal work is a cause for this sickness. Osseous disturbances by interference with the blood and nerve supply are a very frequent cause of morning-sickness. Often the bowels are filled with dry fecal matter and press upon the uterus, rectum, bladder, blood and lymph vessels, and cause irritation of the nerves of the organs of the abdomen and stop healthy action of all the abdominal viscera. The weight of the womb, the large and small intestines, and the other organs of the abdomen pressing upon the nerves of the pelvis, are causes of morning sickness in pregnancy. When the normal flow of the fluids that enter into the formation of urine is confused, these retained fluids being poisonous affecting the solar plexus and causing sickness at the stomach. The vomiting is one way to get such poisons out of the system.

Previous to proceeding with operations to relieve the stomach of this irritable condition we should refresh our minds as to the nerve and blood supply of the uterus and other abdominal organs. One should know the nerve supply of the uterus and be familiar with the ovarian and hypogastric plexuses, also the sacral nerves. The blood supply of the uterus comes from the uterine and ovarian arteries, with which the student should be familiar. With the patient in the knee-chest position, give free passage of blood and other fluids in the abdomen and remove any impacted condition by placing the hands low down on the abdomen and gently drawing the contents of the pelvis forward toward the umbilicus and upward from the pelvis.

Preparation

A student of midwifery can only learn a few general principles before he gets into the field of experience. Actual contact with labor teaches him that much that he has read is of but little use to him at the bedside. What he needs to know is how to do the things he will have to do after he gets there. He should know the form and size of a woman's pelvis, and how large is the canal through which the child's head will soon come. A normal head cannot come through a pelvis that has been crushed in so much as to bring the pubes within 1 to 2 inches of the sacrum. More than 90 per cent of all cases, however, are of a very simple nature.

Obstetrician's First Duties

The mother is warned of the approach of her delivery by pains in the back and womb repeated at intervals of one-half hour or less, and a physician is called. The first duty of the obstetrician is to carefully examine the bones of the pelvis and spine of the mother, to ascertain if they are normal in shape and position.

First Examination. Make the examination with the index finger. If there is any doubt about the spine and pelvis being in good condition for the passage of the head, and you find the pelvic deformity enough to prohibit the passage of the head, notify the parties of the danger in the case at once. Warn them that there is danger of death to the child and to the mother, but less danger to the mother than to the child; and that as instruments may have to be used in this case, you do not want to take the responsibility alone, but wish the counsel of another experienced doctor. The importance of an early examination of the pelvic bones is to give time to be ready for an emergency.

With the index finger, examine the os uteri. If it is found to be opened to the size of a quarter or half dollar, labor has begun. If it is closed and there is only backache, have the patient turn on her right side and place the hand on the abdomen above the pelvis. Gently press or lift the belly up just enough to allow the blood to pass down and up the pelvis and limbs. At this time, relax all the nerves of the pelvis at the pubes.

Second Examination. Wait a few hours and examine the os again. If it is still closed and no periodical pains are present, you are safe to leave the case in the hands of the nurse, instructing her to send for you when pains return at regular intervals. On your return, explore the os again, and if it is found to open as large as a dime, you are notified that the uterus has begun its work of delivery. Do not place the patient flat on her back, because the combined weight of the child, uterus, placenta, and fluids lying on the nerves that control the uterus in delivery, disable them so they cannot perform their function properly. Place the patient on her back in a semi-erect position, which allows the womb to fall forward and takes pressure away from the nerves. A common chair inverted at the head of the bed so as to make an inclined plane on which the patient's body will rest in a semi-erect position, with a folded quilt and a pillow, provides for very much less uterine and abdominal weight. While in this position, the head of the child is easily forced into the pelvis and the perineum is brought back and out of the way of the coming head.

How to Prevent Laceration

Soon you will find in the mouth of the womb an egg-shaped pouch of water, which you must not rupture until very late in labor, for fear of stopping the expulsive pains. Remember that while the head is in the fluids of the amniotic sac it turns in the pelvis to suit the easiest passage between the bones.

Now it is your duty to prevent rupture of the perineum. To do this, the operator takes a position at the patient's right side, and with the patient in the position above described a slight amount of work with the fingers will prevent any laceration of the perineum. Place the fingers of the left hand firmly over the symphysis and push the soft parts down. With the thumb of the right hand against one of the tuberosities of the ischium and the fingers against the other tuberosity, support the perineum with the ulnar border of the hand, pressing the tissues strongly against the bones. This allows the stretching of the parts to take place at the sides of the vagina and prevents laceration. If you follow this law of nature, laceration may occur in one out of a thousand cases, and you will be to blame for that one.

Care of Child and Cord

Now you have conducted the head safely through the pelvis and vagina to the world. You will find the pains stop right short off for about a minute, and that is the time to learn whether the cord is wrapped around the child's neck. If it is found twisted around the neck one or

more times, you must slip a finger around the neck and loosen the cord, to let blood pass through the cord until the next pain comes, in order to ward off asphyxia of the child.

When the next pain comes place your hand under the back of the child's head and remove the remaining part of the child's body from the mother. Never draw the child too far from the placenta by force as you may tear the cord from the child and cause it to bleed to death. Turn the child on its side and remove from the mouth and face all the fluids which might strangle it. Blow a cold breath on its face and breast to stimulate the lungs to action. When pulsations cease in the cord and the cry of the child shows the lungs are in good action, tie the cord. Beginning at about three inches from the child's belly strip the cord between the thumb and finger toward the child's body in order to remove from it any bowels that may be in it. Tie the cord with a strong string in two places, one three and the other four inches from the child's body. Cut the cord between the two strings tied around it and exercise care to avoid injuring the other parts with the scissors.

To dress the cord, cut a hole the size of your thumb in a doubled piece of cloth five inches long by four wide; cut the hold two inches from one end, run the cord through the hole and fold the cloth over it. Keep the cloth in place by adjusting a bellyband over it.

The afterbirth has grown tight to the womb and for nine months has furnished all the blood to build and keep the child alive and growing in the womb. It has done all it can for the child and is now ready to be delivered from the womb. When the child is being expelled from the uterus we very often hear a "cluck" or sound made by the air filling the vacuum in the uterus. When this occurs, the air is sufficiently irritating to cause contraction of the uterus on the placenta. We have slow delivery of the placenta. Should the uterus contract enough to diminish the size of the os, we have retention of the placenta. Sometimes the uterus contracts over the entire placenta as a round ball; at other times it makes a powerful circular contraction around the center or middle of the placenta. In the first case, we have a tedious delivery of the placenta because of the general contraction of the whole uterus around it; in the other case, we have what is called an hourglass contraction in which the womb forms a circular band around the placenta.

Many methods have been used to break up the spas, modic action of the uterus and cause it to let go its grasp of the placenta, both in general contraction and in hour-glass contraction. I will give only my experience and the method that has been satisfactory to me. I always work with the view of preventing the closure of the os until the afterbirth is expelled. Nerve terminals, having much to do with the irritability of the uterus, are located in the clitoris, about the symphysis, and in the region of the neck of the bladder. As soon as the child is born and breathing easily, to prevent the os from being irritated by the chemical action of the air, I place my left hand flat on the symphysis with the heel of my hand above it and my fingers extending as far down as the urethra and inhibit those nerves of sensation. At the same time, I place two fingers of my right hand in the vagina and on the perineum close to the rectum and stretch the muscles downward, which produces a contraction of the longitudinal muscles of the uterus. I do this soon after the child is born and before any after-pains. In all my practice, I have had no trouble in delivering the placenta with this procedure.

Post-Partem Hemorrhage

After the child is delivered, hemorrhage may be produced by retention of the placenta in the womb after its separation, thus preventing the contraction of the uterus sufficiently to close the blood vessels; by retention of a part of the placenta; by inversion of the uterus.

To relieve the hemorrhage, I dip my right hand into the blood and insert it into the womb, and with the back of my fingers straighten out any folds or wrinkles that I find on the inside of the uterus, and remove any part of the placenta that has not been delivered. I retain my hand in the uterus for a few seconds or until I feel the uterus is contracting on it. To start up the contraction, I pull the hair or scratch the flesh in the region of the symphysis enough to make an irritation. After withdrawing my hand, I push the soft parts all back into the pelvis with my right hand, while with my left on the abdomen, I draw the uterus up so as to give free action to the nerve and blood supply to the uterus, and in the pelvis and in that vicinity.

For an abdominal binder I use the mother's shirt, if a good strong one, pulling it down to full length and pinning it on the inside of both thighs to hold it in place. Be careful not to bandage high enough to force the uterus down into the pelvis. To hold the uterus up, a folded towel or cotton pad is placed under the chemise and just above the symphysis, never extending more than two inches above, and secured by two safety pins. A folded towel or cotton pad is placed over the labia to take up the discharge.

Diet

If the patient's general health is fairly good, allow her to tell you what she wants to eat and give it to her. Let her diet be in line with her usual custom. You must remember that she has just left the condition of a full abdomen. Lace her up, fill her up, make her comfortable and leave her for six hours; then change her clothes and bedding. If you stop or interfere with digestion for some hours by giving teas, soups and shadows to eat, your patient will be so weakened that it would be dangerous to give her a hearty meal. For thirty years my practice has been crowned with good success. I have never lost a case in confinement. I have universally told the cook to give her plenty to eat. Do not bother the bowels for two or three days. If the water should fail to pass off even after inhibiting the pubic system of nerves, it may be necessary to use the catheter.

Treatment of the Breasts

Caked breasts after childbirth, shortage in the milk supply, sore nipples, or lasting tumors of the breast are seldom found where all ribs, vertebrae and the clavicles are in normal adjustment. When the breast becomes hard after childbirth, or when you find a tumor in either breast it is because the venous system has failed to return the blood supplied by the mammary and intercostal arteries. If the clavicle or upper ribs of the diseased side are producing obstructive pressure on the veins, they will not carry off the waste blood and keep the breast in normal condition. The clavicles and the ribs from the first to the eighth, are generally found to be partially dislocated on the sternum or the vertebrae.

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In all tumefactions of the breast I have found ribs down and under the transverse processes. When you are trying to reduce tumors of the breast remember there are azygos veins, also mammary veins draining the venous blood.

To relieve these conditions, I adjust the clavicles and ribs and set free the nerve and blood supply. I have given you several methods by which you can adjust the clavicles and ribs, but I will say that in these cases I usually raise the ribs and free the axillary system while my patient is lying on her back. Grasping the arm, I bring it outward and upward strongly until I get it as high or higher than the normal position of the shoulder, and at the same time, with my other hand against the muscles and ribs in the axillary region, I bring strong upward pressure toward the head. I complete the movement by bringing the arm to its normal position at the patient's side with firm upward pressure on it and on the ribs and muscles. For shortage of milk supply treat both sides in this manner. The mammary system will go to work and there will be an abundance of milk. ❒

Component Societies' CME Calendar and other Osteopathic Affiliated Organizations

September 24-28, 2007
Annual Convention Emergency and Trauma Radiology
Roca Raton, FL
American Osteopathic College of Radiology
Chicago, IL
Contact: AOCR
660/265-4011 or
800/258-AOCR

October 6-7, 2007
The Brentwood OMT Skills Series Muscle Energy Technique-Part III: Lumbar, Sacrum/Pelvis
Fred L. Mitchell, Jr., DO, FAAO
South Pointe Hospital
Warrensville Heights, OH
Contact: Jay Sandweiss, DO
734/995-1880

October 27-28, 2007
Osteopathic Techniques of A. T. Still and J. M. Littlejohn: Comparison and Contrast of Principles and Treatments
Richard L. Van Buskirk, DO, PhD, FAAO
Arizona Academy of Osteopathy
MWU/AZCOM Campus
Glendale, AZ
Contact: Laura Jones,
OMM Education Coor.
623/572-3351

November 10-11, 2007
The Brentwood OMT Skills Series Muscle Energy Technique-Part IV: Extremities
Fred L. Mitchell, Jr., DO, FAAO
South Pointe Hospital
Warrensville Heights, OH
Contact: Jay Sandweiss, DO
734/995-1880

December 7-9, 2007
26th Annual Winter Update
Indiana Osteopathic Association
Indianapolis, IN
Contact: IOA
317/926-3009 or
800/942-0501

January 25-27, 2008
Brain Parenchyma, Nuclei, and Fluid
Course Director: Bruno Chikly, MD, DO (Hon)
AZCOM
Glendale, AZ
CME: 24.5 Category 1A (anticipated)
Contact: The Cranial Academy
317/594-0411
www.cranialacademy.org

February 20-24, 2008
Midwinter Basic Course in Osteopathy in the Cranial Field
Course Director: Ralph W. Thieme, DO
Hotel Albuquerque
Albuquerque, NM
CME: 40 Category 1A (anticipated)

May 9-11, 2008
Crash Recovery, The Long Road Home. Treating Victims of Motor Vehicles Accidents and Brain Injury
Course Director: Maud H. Nerman, DO
Bay Club
Carte Madera, CA
CME: 17 Category 1A (anticipated)
Contact: The Cranial Academy
317/594-0411
www.cranialacademy.org

June 14-18, 2008
June Basic Course
The Cranial Academy
Course Director: Mark E. Rosen, DO
Hilton Hotel
Indianapolis, IN
CME: 40 Category 1A (anticipated)
Contact: The Cranial Academy
317/594-0411
www.cranialacademy.org

June 19-22, 2008
Annual Conference: Dynamic Concepts in Facial Development
The Cranial Academy
Course Directors: Eric J. Dolgin, DO, FCA and Tasha Turzo, DO
Contact: The Cranial Academy
317/594-0411
www.cranialacademy.org

The Establishment of a Neuromusculoskeletal-Osteopathic Manipulative Medicine Service in a 700 Allopathic Physician Practice

Thomas M. Richards

Introduction

The future of the osteopathic medical profession is in its students and young physicians. It is important for them to know where their profession has come from, where it is, and where it is going. I am presenting this paper from the perspective of one osteopathic physician, me, who has been in the profession for one-third of its existence. I will trace the humble beginnings of the profession through its initial conflicts and tribulations and through my education and mentorship culminating in the establishment of a neuromusculoskeletal-osteopathic manipulative medicine service in a 700-physician allopathic multi-specialty practice.

Andrew Taylor Still, MD was a medical reformer who attempted to present his concepts at Baker University in 1875. He intended to reform the medical community of the day to include his concepts later called osteopathy.[1,2] Osteopathy has since evolved to become osteopathic medicine. For over one hundred years animosity has existed between allopathic physicians and osteopathic physicians. Many osteopathic physicians practice in areas with a paucity of peers. In the world of HMOs and managed care, it is advantageous for osteopathic physicians to be recognized by allopathic physicians, not only for their unique skills, but also for what they can offer patients through the osteopathic concept. As osteopathic medicine evolves, it is gaining legitimacy in the eyes of allopathic medicine. I will briefly discuss the formation of the osteopathic concept and the progression to osteopathic medicine. I will show how one osteopathic student of the late 1960s and early 1970s, a period of great change in the osteopathic profession, maintained his osteopathic perspective in an allopathic world and created a neuromusculoskeletal medicine-osteopathic manipulative medicine service within a large allopathic institution.

Still was the son of an itinerate Methodist minister, doctor, farmer, and practical millwright.[3] He was an engineer of five years of schooling.[4] He became a physician through apprenticeship,[5] practiced farming,[6] taught school,[7] fought in the Civil War,[8] and for a short time served as a state legislator.[9] He became disillusioned with the conventional medicine of the day after losing three of his children to spinal meningitis in 1864[10] and later while caring for his brother who became addicted to morphine.[11] Over the next 10 years, he developed his osteopathic concept. Because of his religious background, Still felt that man was created perfectly. He studied anatomy by exhuming and examining cadavers from Indian burial grounds.[12] Because of his engineering background, he began to look at the human framework as a machine, to see if he could find any variation from the truly normal among its journals, belts, pulleys, and escape pipes.[13] He reasoned that if one knew what the perfect body looked like mechanically, one could find abnormalities and restore them to their physiologic state. He felt the creator had provided the body with everything that was needed to maintain health.[14]

In 1875, Dr. Still attempted to present his findings at Baker University, a school he had helped to establish.[15] He was rejected, moved from Kansas, and began practicing in Kirksville, MO. He established the American School of Osteopathy in Kirksville in 1892. The revised charter of 1894 states the goal was "to improve our present system of surgery, obstetrics, and treatment of diseases generally, and to place the same on a more rational and scientific basis, and to impart information to the medical profession…"[1] This statement tells me that he was a reformer, not a revolutionist. The early graduates of ASO began a proliferation of schools of osteopathy. One of these by John Martin Littlejohn, DO and his two brothers in 1900 was the American College of Osteopathic Medicine and Surgery. In 1918, it was named the Chicago College of Osteopathy.

Around the turn of the century, many states began regulating medical practice through boards of medical examiners. Illinois passed its medical practice act in 1899. The board was controlled by MDs who refused to license DOs. Dr. Littlejohn obtained an MD degree which gave him the credentials to establish the college in 1900. Early in the history of the profession, there developed a rift between factions. On the one side, there were the lesion osteopaths who shunned materia medica. On the other side were the broad osteopaths who chose to use all of the tools available, including the pharmaceuticals of the day. Many of the latter were MDs who obtained DO degrees, and many were DOs who later obtained MD degrees. There is a long history of legal battles for full practice rights in the various states. I will not delve into those battles here. The driving force for the inclusion of materia medica in the osteopathic curriculum was

state licensure for full medical practice. Illinois began granting full practice rights to osteopathic physicians, ordered by the Illinois Supreme Court in 1955 and the amended Medical Practice Act of 1959. The DOs holding licenses to practice osteopathy in Illinois were given four years to take a 248-hour refresher course and pass an examination for full licensure.[16] Throughout the history of the college, physicians with dual degrees participated to maintain the college and osteopathic hospital. During the 1960s, they were Robert Kistner, DO, K.R.M. Thompson, DO and W. Don Craske, DO.

Dr. Kistner, dean of CCO in the 1960s, began a policy of sending residents to allopathic hospitals for subspecialty training, to then return to CCO and establish subspecialty services. They included Lawrence Haspel, DO in cardiology; Don Hollingsworth, DO in nephrology; and Tom Allen, DO in pulmonology. In his 1968 acceptance address of the Mabel Campbell Professor of OPP, Norman J. Larson, DO, FAAO, stated, "We will seek to maintain a well-balanced approach to therapy, integrating all the knowledge and techniques now known to the healing arts."[17] The name of the Chicago College of Osteopathy was changed to the Chicago College of Osteopathic Medicine in 1970. The profession came full circle from the vision of A.T. Still; the vision of a reformed system of medical care that avoided the not helpful, and frequently harmful, therapeutics of his day, and even the avoidance of all biologicals and pharmaceuticals, even those more helpful than harmful. Osteopathic medicine has progressed to the integration of all the knowledge and techniques now known to the healing arts.

The osteopathic climate in Chicago from the mid-1960s to the mid-1970s ranged from "be better than the allopaths" to "osteopathic paranoia". California had all but eliminated the profession from that state from 1961 to 1974. Illinois osteopaths had recently been granted full practice rights. The methods employed by the American Medical Association (AMA) in California were not working in the rest of the country, yet the goal of the AMA was to eliminate the entire osteopathic profession. During my formative years, the AMA considered referral to, or even professional contact with, osteopathic physicians to be unprofessional conduct. The animosity began in 1875 with Dr. Still's attempt to share his views at Baker University. The animosity increased over the century but is largely resolved today. "The very great prejudice existing among many physicians of the medical schools against the osteopaths, and of the osteopaths against those of the medical schools, is well known."[18]

"Clearly, public policy should not be decided in accord with what is good for osteopaths or what is good for MDs. Public policy should be decided by what is good for the public…"

Russell B. Roth, MD, in a 1969 address to the House of Delegates of the AMA, stated:

"Clearly, public policy should not be decided in accord with what is good for osteopaths or what is good for MDs. Public policy should be decided by what is good for the public. It is incidental that the public itself is generally a very incompetent witness on this score, and it remains for objective, dispassionate analysts of the healthcare problem to decide first on the ultimate objective, and next on how to achieve it.

The objective, bluntly, is to relegate the osteopathy of Andrew T. Still to a niche in history alongside the homeopathy of Hahnemann, and to complete the emancipation of his disciples as they have turned from cultism to scientific medicine."[19]

The era of the 1970s and 1980s, with the proliferation of osteopathic colleges and with the advent of Michigan State University College of Osteopathic Medicine (Fred L. Mitchell, DO, FAAO and Robert C. Ward, DO, FAAO), led to a great expansion in efficiently taught osteopathic technique. I think the proliferation is in part responsible for the marked increase in student interest and demand for more exposure to osteopathic manipulative treatment (OMT). In 1969, there were 56 students in the UAAO. In 2003, there were 4,326. This figure compares to 1997 students in five osteopathic colleges in 1969[20] and 11,432 students in 19 osteopathic colleges, six of which were state funded, in 2003. Four hundred and two students attended the AAO convocation in 2003.[21,22]

I feel compelled to provide a considerable amount of background information to illustrate the difficulties of maintaining an osteopathic perspective in an allopathic world.

In approximately 1964, I decided that I wanted to be a physician. Two weeks after our marriage, my wife developed abdominal pain on a Friday evening. Having moved from Milwaukee to Chicago two weeks earlier and knowing no one in Chicago, we returned to Milwaukee to seek medical care. We went directly to the office of the physician who had done our premarital exams. He was in the office, but unable to see her. We then contacted my sister-in-law's physician who prescribed an antibiotic over the phone for a possible urinary tract infection and told us to call him if she seemed to be getting worse. I called him at 2:00 AM; he came out to the house, admitted her to the hospital, and removed her appendix. I learned that he was an "osteopath". I had no idea what an osteopath was, so I contacted the American Osteopathic Association. I reviewed the information they sent to me and decided that this was the kind of physician I wanted to be. At that point, I did not know that manipulative treatment existed.

I applied to the Chicago College of Osteopathy in 1966 and matriculated in 1967. I became interested in manipulative medicine through Mark Walton, DO (son of William J. Walton, DO, FAAO), who was the fellow in osteopathic principles and practice during my freshman year. I contacted him because I had developed flank pain and was sure that with a family history of kidney stones, I had a stone. Mark examined me and put his knee in my back; there was a "pop" and my "kidney stone" was gone. I was impressed. He began to teach me about "osteopathic lesions"* and how to manipulate them. This →

**Outdated term for somatic dysfunction believe that one can learn the nuances of HVLA from a book and initially be able to safely treat patients.*

insight gave me a jump on the rest of my class, and I began treating my classmates. My ultimate goal was to take an ob-gyn residency. I felt that manipulative medicine could play a large role in the care of the obstetrical patient. By the end of the second year, I felt there was so much more to learn about osteopathic manipulative medicine (OMM) that I applied for and was granted a three-year undergraduate fellowship in osteopathic principles and practice, from 1969-1972, under the mentorship of Dr. Larson and Robert E. Kappler, DO, FAAO. The OMM fellowship program was the first in the country, and I was the second fellow. During the summer of 1970, I served a three-month preceptorship under the tutelage of David A. Patriquin, DO, FAAO, at the Zeller Osteopathic Center in Montreal, Quebec, Canada.

During my era in Chicago, students were taught soft tissue technique and high velocity low amplitude (HVLA). I do not believe that manipulation must be taught one on one. The one-on-one method is very inefficient and it takes years to truly become proficient. Myofascial release, muscle energy technique, and cranial osteopathy were not taught in Chicago until the mid-1980s.

There was a copy of Harold I. Magoun, DO's *"Osteopathy in the Cranial Field"* in the library of CCOM in 1969. As a fellow in the OMM department, I was allowed to sit in the library and read it. I was not allowed to remove the book from the library because the cranial concept was so controversial at that time that the powers that be at the college did not want the book open to the public. I asked Wm. Fraser Strachan, DO to teach me cranial. He refused and said he did not have the time to do it right. I respect him for that decision. He did, however, show me some simple techniques, such as temporal rocking and sinus drainage techniques.

In Chicago, at that time, there were two types of osteopathic physicians: the "wizards" and the "out-medic-the-medics". The wizards did not usually share the specifics of their genius of how to diagnose and treat. I was having difficulty mobilizing an upper thoracic dysfunction of a patient in the clinic and asked Dr. Larson to help me. The patient was sitting on the table facing the door. As Dr. Larson preceded me through the door, he turned to me and said, "Why, she has a calcium problem." Work-up revealed hyperparathyroidism. I asked him several times over the next three years what he saw that alerted him to her parathyroid problem. He never answered me. Dr. Strachan was a master of indirect technique (possibly from the influence of Sutherland), but rarely shared the "how to do it" with students. Indirect technique was not taught or widely used in Chicago. I jammed my wrist during my freshman year and asked Dr. Strachan to look at it. He took my wrist in his hands and very gently moved it through a small range of motion which took 5-10 seconds. He then offered, "Let me know if it gives you any more trouble." I thought I had just received a placebo manipulation. The wrist has not bothered me since.

Another of the wizards was Martin C. Beilke, DO. Whenever I saw him, he was carrying a leather x-ray carrying case which contained postural x-rays of patients. He and Jack Grant, DO, radiologist, did much of the pioneering work on radiological evaluation of leg length discrepancy and postural balance and imbalance. He also carried x-rays of a well-known star of the Broadway stage and silver screen. He constantly talked about mystifying things, like circulatory alveolar lag, visceroptosis, coloptosis, nephroptosis, and the importance of the psoas shelf.

S. Edward Stanley, DO was a general practitioner and dermatologist on staff at Chicago Osteopathic Hospital in 1970. I was an extern at Chicago Osteopathic Hospital and admitted a patient of his to the surgical service with a diagnosis of colon cancer. The patient's chief complaint was back pain, and he denied any bowel problems. I called Dr. Stanley for more information and to ask what he wanted done with the patient. He told me that the patient needed a colon resection, surgical consultation, and a colon x-ray. Since the patient had not had an x-ray, I asked Dr. Stanley how he diagnosed the colon cancer. Dr. Stanley said rather indignantly, "Well, did you examine his back?" The patient had a stage III, mid-transverse colon cancer.

I can remember, even back then, Dr. Kappler saying, "The sacrum's in trouble; but the problem is, what ya gonna do about it"?

There were five colleges of osteopathic medicine. Each had its own wizards such as Angus G. Cathie, DO and Nicholas S. Nicholas, DO at PCO, Bernard A. Tepoorten, DO and J. Gordon Zink, DO at Des Moines, and Paul E. Kimberly, DO and Edna M. Lay, DO, FAAO at Kirksville. There was also Viola M. Frymann, DO, FAAO in California of the former Los Angles Osteopathic College.

The "wizards" had a level of palpatory tissue sense that most of us will never achieve. Palpation can only be taught through repeated one–on–one demonstration reinforced by years of palpatory experience. Fortunately, we have a new generation of "wizards" such as Melicien A. Tettambel, DO, FAAO, Ann L. Habenicht, DO, FAAO, Judith A. O'Connell, DO, FAAO, Kenneth J. Lossing, DO, Douglas E. Vick, Edward G. Stiles, DO, FAAO, Kenneth E. Nelson, DO, FAAO Hugh M. Ettlinger, DO, FAAO and the like.

We also had the "medics" in Chicago. The one that I remember the most is George Caleel, DO who taught internal medicine. He was a stalwart of the osteopathic profession in Illinois as well as a brilliant internist. One day in 1984, I was reading a paper associating H. pylori with peptic ulcer disease. I was suddenly taken back to medicine 403B in 1969 at CCOM where Dr. Caleel, while lecturing to the junior students, said, "Someday, someone will be smart enough to figure out that ulcers are an infectious disease."

In 1972, I began a one-year rotating internship at Mount Clemens General Hospital. The background and skills that I had developed through the fellowship gave me the opportunity to manipulate patients, staff and physicians during that year, gaining much experience.

Following internship, I started in a general practice in Milwaukee, Wisconsin with the physicians who removed my wife's appendix. This practice was heavy in ob-gyn delivering approximately 300 babies per year. Practice for the first ten years was in an osteopathic environment. The hospital funded and sponsored the academy counterstrain tutorial, in 1981, presented by Harold Schwartz, DO, FAAO. I became active in medical staff affairs and progressed to the role of Chief

of Staff of Northwest General Hospital.

In 1979, I entered into a contract with the board of directors of the hospital to establish a consulting service in osteopathic manipulative medicine as well as a hospital department of OMM. My duties were to chair the department and perform inpatient and outpatient consultations, on a referral basis, for members of the medical staff. During this period, I was also a trainer for the externship and internship programs. The establishment of the department was easily accomplished because the department had just been mandated by the AOA to maintain accreditation. Because I did office general practice, the consulting service was established in the hospital, at the request of the general practice department, to prevent their patients from coming to my office.

I left the Milwaukee practice in 1984 for a wilderness practice in a small town in northern Wisconsin with a population of 735. There was an 18-bed hospital, a 24-hour emergency room, and two physicians. This situation made for 100-plus hour work weeks and a much different skill set than I needed in Milwaukee. The other physician was an MD general surgeon who taught me much about wilderness and emergency medicine. The practice schedule allowed little time for vacations or CME. The surgeon soon became aware of my osteopathic skills and began referring to me patients with back problems and headaches as well as difficult diagnostic problems. During this period, I allowed my AAO membership to lapse because of time and financial issues which left me in an osteopathic vacuum.

I now practice in a large clinic in northern Wisconsin. This clinic is a billion dollar a year not-for-profit corporation which is owned and operated by over seven hundred physicians practicing as a multispecialty group at forty-two locations throughout central and northern Wisconsin. The clinic is the sole owner of a health insurance company offering many different products, some of which are managed care. The clinic also is the sole owner of a medical research foundation which currently has over one hundred active medical research projects. The mission of the clinic is to "serve patients through accessible, high-quality health care, research, and education." The culture is basically ultraconservative allopathic physicians. We have developed in-house "Practice Guidelines" and are proponents of evidence-based practice. The center where I am located has 70 plus physicians and a pain management department with 13 members. The intake physicians for the pain clinic are two osteopathic physicians certified by AOBNMM-OMM, Kathleen J. Meyer, DO and me.

I was recruited to my current practice as a family practitioner. I recall that during my interview with the medical director at the main campus, he stated: "We don't encourage manipulative medicine here. You don't do any of that stuff, do you?" I replied, "I don't try to cure appendicitis with manipulation." Nothing more was said on the subject. I was well received by the family practitioners who had recruited me to the center. Very quickly the results I was getting with patients with headaches and back problems were recognized by my medical assistant and the appointment coordinators. They started sending me patients and I quickly became very busy. Suddenly, I was manipulating many of the employees and some of the physician staff. One of the obstetricians asked me if I could do anything for dyspareunia. I went to his exam room with him to look at his patient who had been unable to have intercourse since the birth of her three year old. She had a rather severe sacral torsion which I treated on the gyne table. A reevaluation at seven days revealed she was pain free. That case began an onslaught of obstetrical patients.

I had a patient with a one-centimeter mass in the left lobe of the thyroid. I sent her to a surgeon for evaluation. My phone rang, and when I answered, the voice on the other end said, "What do you have for fingers?" Somewhat surprised I queried, "What do you mean?" The surgeon replied, "Well, you sent this lady over with a thyroid mass. I couldn't feel anything, so I had one of the other surgeons examine her; he couldn't feel anything either. We got an ultrasound, and she has a one-centimeter mass in the left lobe." I responded, "I know, it's under the sternomastoid."

I had another experience with the same surgeon. Shortly after I started with the clinic, my medical assistant asked me to get rid of her headache. I treated her and her headache resolved during the treatment. This headache recurred again about a month later. The third time she asked me why she was getting the headaches. I told her it was because she had a bad gallbladder. With that remark she spun around on the table and said, "No, I don't." I asked how she could be so sure, and she informed me that she had been worked-up three times. Since she had $T_{7\text{-}8}$ viscero-somatic reflexes, I said, "It's your gallbladder." Sometime later she was admitted to the hospital with biliary colic. Again workup was negative. I discussed with her and this surgeon that my fingers told me it was her gallbladder. The surgeon said he would take out her gallbladder with the understanding she might be no different after the surgery, as he could not demonstrate that she had gallbladder disease. The pathologist reported gallstones. Her headaches have not returned.

I was approached by the orthopediaests to establish a consulting service for patients with back pain. They were not interested in managing those patients. I started getting referrals from them as well as many of the primary care physicians. Very shortly, I became booked out several months, not acceptable for an acute care practice, and I stopped taking the referrals.

That situation created a turning point for me. Because of the long wait times for appointments, the practice was self-selecting for chronic maintenance patients, which was not the type of practice that I wanted. At about that time, I attended the Founders Day program in Kirksville to hear Dr. Kappler's presentation on the accomplishments of Dr. Larson. While I was there, I met and had discussions with William A. Kuchera, DO, FAAO who encouraged me to become certified in OMM. Dr. Kuchera's practice was limited at that time, to manipulative medicine. After thinking about it, I felt that that was the type of practice I wanted to develop. I was getting the recognition of my colleagues at the center and had pretty much shed my osteopathic paranoia. One of the requirements of the clinic is that a physician be certified in the specialty that he practices. I, therefore, pursued and attained certification by American Osteopathic Board of Special Proficiency in Osteopathic Manipulative Medicine →

(AOBSPOMM). The certification requirements got me re-involved with the academy and OMM CME. I also pursued cranial osteopathy with Dr. Frymann and with the SCTF. These endeavors gave me the tools to make the change within the clinic structure.

I approached the clinic administration for help in making my practice more efficient by shortening the long waiting times for appointments. After review, their recommendation was to recruit another OMM specialist. This was problematic in that the clinic did not have an OMM service; I was still considered a family practitioner in the family practice department. The process for establishing a new service in the clinic was complex and required several steps. Fortunately, I was treating patients of many of the key players in the process and had their wholehearted support. The family practice department recommended establishment of the OMM service, as a subsidiary of family practice, to the regional operating committee, which recommended to the system operations group, which recommended to the executive committee. The new service recommendation passed all the way through and I was then authorized to recruit a partner, with one stipulation, by the systems operations group. The recruit had to also be certified in a primary care specialty. The SOG was still unsure of manipulative medicine and did not want someone "manipulating TB of the spine." I was extremely fortunate to recruit Dr. Meyer.*

Good things frequently happen serendipitously. It took more than a year for the above process to move from inception to fruition. The center recruited a pain management interventional anesthesiologist, Thomas Simpson, MD. As program chairman, I had him present his slide show, "Interventional Pain Management" at the Wisconsin annual scientific seminar. Because we both stayed at the hotel, it gave me the opportunity to explain the osteopathic concept, manipulative medicine, and the cranial concept to him. In the words of Dr. Larson: "If you want to explain osteopathy to someone, just treat um."[23] I gave him a treatment. The anesthesiologist sat up on the table and said, "You must share this." He then began referring patients from pain management to the OMM service. He sent me an unfortunate gentleman who suffered from chest wall pain and had been unable to work for seven months. He had already undergone an extensive work-up and several injection procedures. The patient had thoracic and rib somatic dysfunction which responded to one manipulative treatment. He returned to work five days after I treated him. After observing this result, the anesthesiologist changed his protocol. Patients that were now referred to pain management are first evaluated by me or Dr. Meyer and treated with OMT, where appropriate. The non-responders are then referred to anesthesia pain management for localization of the pain generator or to surgery for consultation. That relationship gave us the basis to become a free-standing service. The executive committee approved the change, and the clinic now has a neuromusculoskeletal medicine/osteopathic manipulative medicine service. The time commitment to do this practice has forced me to give up family practice.

"We carry a flag of progress, and should honor it with greater results by better applications of the principles of osteopathy. We must avoid the dust of habit. We must so adjust our telescopes that we may set our compass to run to stars of greater magnitude, that shine from the breast of the exacting Infinity."

– A. T. Still, MD, DO

Early in my practice at the large clinic, I did not specifically develop an OMT consulting practice. Many of the patients in my small town practice followed me to my new practice at the large clinic. I would not uncommonly see my partners' patients in cross coverage, and they would also see mine. This situation exposed my partners to the successes of OMT in the patient population that we had, and this led to referrals within the family practice department. After I gave a talk to the support staff on "What is osteopathic medicine," I began seeing many of the attendees with headaches or back pain as patients. As the word spread, I also began seeing physicians and their families as patients.

Information was communicated formally in the medical record. The clinic has one electronic medical record which is used throughout the entire clinic system. If I treated a patient of another physician, I sent the physician a copy of my note via e-mail. The copy of the note was sent by the transcriptionist. More information was communicated informally in the hallways. Physicians and staff would stop me and ask if I could do anything with this or that problem. My usual answer was, "Possibly, I'll be more than happy to evaluate the patient and see."

Initially, referrals were setup by appointing patients in my schedule as new patient consultations. That process was a mistake. The patients were often not seen for six to eight weeks after the consultation was requested. That delay was unacceptable to both the patient and the referring physician. Consultations need to be seen within a reasonable time frame. Urgent patients can now be seen the same day or within one or two days. Two mornings in my schedule are currently available for new consults only. Established patients are given access for revisits on those mornings, only if slots remain available the day before.

If one is attempting to set up a consulting practice, I think it is best to first encourage referral of young adults with muscle tension headache or acute musculoskeletal pain, as these patients usually respond quite dramatically to OMT. As the practice evolves, one can add the patients with chronic diseases such as COPD, GERD, diabetes, chronic musculoskeletal problems, and the like. Also, if you are so inclined, talk to the pediatricians. My first pediatric referral was a child with acute torticollis who responded to one treatment. The pediatrician then asked me if I could do anything with children with "funny looking heads." I just smiled and said, "Send them over." After I treated

* Dr. Meyer has moved to Appleton, WI.

a few, the pediatrician noticed dramatic improvement in their speech delay, which prompted discussion. I think that if I had approached the pediatrician with the suggestion that I could help the speech delay with cranial manipulation, she would not have believed me.

My partner and I became the primary screeners for the pain team quite serendipitously. The invasive anestheologist was the intake physician for the pain team, which was poor use of his time and talents. In the economics of group practice, he needs to spend his time doing procedures. After the local group and the executive committee of the clinic saw our comprehensive consultations and recommendations for the patients we referred to the anestheologist, they decided my partner and I should be the primary screeners for the pain team.

I made a big mistake, initially, trying to set up a consulting practice. That mistake was my lack of availability as discussed previously. That mistake probably added five years to the final outcome.

Many changes have taken place. The service has done consultations for physicians in all of the departments at the center and all of the divisions of the clinic. Dr. Meyer and I have been invited to participate in revising the clinic's "low back pain" practice guideline. The department is being studied by the fiscal services arm of administration because it has been noticed that our center's "profit" is approximately four fold higher for the care of patients with back pain than the other centers. The clinic has affiliations with two allopathic medical colleges: The University of Wisconsin College of Medicine and The Medical College of Wisconsin in Milwaukee. The clinic has also established affiliations with Colleges of Osteopathic Medicine in Chicago, Des Moines, Kirksville, and Kansas City. We have precepted students from the above six institutions and received evaluations from the students among the highest of the clinic. We have come a long way from "You do not do any of that stuff, do you?"

As Dr. Still said in his autobiography: "We carry a flag of progress, and should honor it with greater results by better applications of the principles of osteopathy. We must avoid the dust of habit. We must so adjust our telescopes that we may set our compass to run to stars of greater magnitude, that shine from the breast of the exacting Infinity."[24]

Animosity is finally largely gone. Programs of osteopathic medicine are established in traditionally allopathic institutions, such as Dr. Ettlinger's Service at St. Barnabus Hospital in New York and Drs. Campbell and DeMarco's Teaching Service in Massachusetts .[25]

My roadmap for establishing an OMT consulting service in a large MD institution is:

1. The easiest, but most time consuming way is to start with the institution in a primary care department and let the players see your results with OMT, then invite referrals. Finally, pursue establishing an OMT service or department. Learn who the key players are, who make the decisions, and show them by example what you can do.

2. At this time, large institutions are looking for OMT specialists. There are OMT specialists at the Mayo Clinic (Jeff Brault, DO); the Cleveland Clinic (William Welches, PhD, DO and Michael Rowane, DO, MS, FAAFP, FAAO); the Lehey Clinic, (David Driscoll, DO) and possibly others. The doors have been opened.

3. Approach the "powers that be" directly and tell them what you can do for them and for their patients. Be honest and humble. Do not make promises that you can not keep or are beyond their level of acceptance, as in my example with the pediatrician.

4. If you are currently practicing in a large group, encourage referrals, but first make sure that you have ample room in your schedule to accommodate the possible opening of the flood gates.

5. Pursue establishing an OMT service or department after you have the support of your colleagues.

Three principals to establishing an osteopathic manipulative medicine service in an allopathic institution are as follows:

1. Have confidence in what you do.

2. Go gently. In the words of the Apostle Peter*:* "Always be prepared to give an answer to everyone who asks you to give the reason for the hope that you have. But do this with gentleness and respect, keeping a clear conscience…"[26]

3. "If you want to explain osteopathy to someone, just treat um."[23]

Don't hide your light under a bushel. *Practice osteopathically* and it will be recognized.

Conclusion

The osteopathic profession has come of age. In order to maintain our identity and retain recognition as practitioners of legitimate medicine, we must remain true to the osteopathic concept (Beilke and Strachan) in the context of contemporary medical practice (Caleel). I believe that is the way Dr. Larson practiced.[27] With the recognition by allopathic physicians of the value of the palpatory skills of osteopathic physicians in the diagnosis and treatment of human maladies, it may just be that the views of Russell B. Roth, MD, the self-proclaimed "objective, dispassionate analyst of the healthcare problem"[19] were simply wrong. It is entirely possible that the osteopathy of Dr. Still, his concepts and teachings, as they are more widely recognized, will become the mainstream of medicine. As of July, 2007, I have been instructed to recruit another certified osteopathic physician for the NMM-OMM service.

Acknowledgements

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References

1. Still AT. *Autobiography of A.T. Still;* revised edition, 1908. 97.
2. *Ibid.*, 201.
3. *Ibid.*, 28.
4. Still AT. *Osteopathy Research & Practice*. Seattle, Wa: Eastland Press; 1992: preface/xxii.
5. Still AT. *Autobiography of A.T. Still;* revised edition, 1908. 56.
6. *Ibid.,* 55.
7. *Ibid.*, 56.
8. *Ibid.*, 73-76.

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9. *Ibid.*, 65.
10. *Ibid.,* 87-88.
11. *Ibid.*, 98.
12. *Ibid.,* 84.
13. Still AT. *Osteopathy Research & Practice*. Seattle, WA. Eastland Press 1992: preface/xxii.
14. *Ibid.*, 88.
15. Walter GW. *The First School of Osteopathic Medicine; A Chronicle, 1892. 1992.* Kirksville, MO. Thomas Jefferson University Press, Northeast Missouri State University. 1992.
16. Berchtold TA. *To Teach, To Heal, To Serve!* 1975, 202-204.
17. *Ibid.*, 156.
18. The People *vs.* Schaeffer, Illinois Supreme Court, 1924.
19. Roth RB. Osteopathy and Medicine. *JAMA.* July 7, 1969, vol 209, No 1, 95.
20. American Association of Osteopathic Colleges database.
21. Sweet, S. Medical Education. *JAOA.* November 2003, vol 103, No 11, 511.
22. AAO archives, per Phyllis McNamara.
23. Personal communication, Norman Larson, DO, FAAO, 1969.
24. Still AT. *The Autobiography of Andrew T. Still,* Kirksville, Mo: published by the author; 1897, 244 (2nd edition, 1908, 202).
25. Przekop et al. *JAOA. Nov*ember 2003, vol 103, No 11, 543-549.
26. *Holy Bible, New International Version,* 1 Peter 3:15, 16.
27. Personal communication, Ken Nelson, DO, FAAO, 2004.

The following case represents patients whose osteopathic care led to the acceptance of osteopathic medicine by this institution:

Case Study

A 15-1/2-year-old Caucasian male presented with low back pain of five months duration. The pain was along the left iliac crest, radiating down the lateral aspect of the left leg to above the knee. The pain began in the low back after football season; he played wide receiver. He went to a chiropractor who told him that he had a twist in his pelvis and manipulated him without relief. At the time of my first visit, he was playing basketball, and the pain had become progressively worse. He stated the pain was worse during and after playing basketball. The pain was improved by ibuprofen or acetaminophen. He stated that he frequently got a popping sensation in the area of the pain, but he was not sure if it was coming from the low back or from the hip. He recalled no specific trauma, although he had been active in sports all of his life. He had had no electric shock type pain and noticed no weakness. The pain was significant enough that he had considered stopping basketball. He had no previous illnesses and no previous surgeries.

Physical examination showed nothing remarkable except for structural changes. Gait was normal, heel and toe walking were normal. Sacral base appeared to be level with equal leg length. He had a positive standing flexion test on the left. There was no hamstring tightness. The lumbar spine was straight. There was no winging of the scapula and no muscular weakness. Gross spinal motions were normal. The neurologic evaluation was without focal abnormalities. In the supine position, the left anterior superior iliac spine was cephalad compared to the right. In the prone position, the left posterior superior iliac spine was cephalad compared to the right. There was no motion at the left sacroiliac joint. The right sacroiliac motion was normal. There was point tenderness at the ilial insertion of the iliolumbar ligament on the left. L5 was extended, rotated left sidebent left.

X-rays, reportedly standing, from the chiropractor's office revealed leg length to be equal and no bony abnormalities were seen. What was seen of the hip on one view was normal. Standing x-rays were obtained by me of the thoracic and 1umbar spine with a plumb line and revealed leg length to be equal and pelvic base level. X-ray of the left hip was normal.

Diagnoses at the time were left superior innominate shear, lumbar strain, and lumbar, sacral, and pelvic somatic dysfunction (739.3, 739.4, and 739.5).

He was treated with OMT, high velocity technique, to the innominate shear by the two-man technique as described by Kuchera and Kuchera.28 The L5 lumbar dysfunction was treated with high velocity side lumbar technique as described by Bill Walton.29 Re-examination revealed normal motion at L5, the iliolumbar ligament was nontender, and there were no abnormal tissue texture changes. The standing flexion test was normal. The sacroiliac motion was normal. The PSIS and ASIS were symmetrical right to left. He was placed on a lumbar extension exercise program in the form of dry land swimming; he could take ibuprofen 400 mg three times daily with meals, as needed for pain control. He could use ice or heat to the area, but no more than 20 minutes out of the hour. He was reevaluated on the eighth day and stated he had no further pain. He had been doing the exercises and playing basketball without difficulty. Examination at that time revealed the pelvic base to be level, the standing flexion test was negative, and the PSIS and ASIS were symmetrical right to left. Gross and segmental motion was normal, and there was no tenderness or tissue texture change. He was instructed to continue the exercise program and recheck as needed. He has not been seen since.

Discussion

This was a case of a young, healthy, active, athletic male with mechanical low back pain. I felt that the x-ray of the hip was necessary because I could not adequately visualize the capital femoral epiphysis of the left hip on the x-rays that the patient brought with him. With the popping sensation in this area, which might have been coming from the hip, I felt that the possibility of slipped capital femoral epiphysis was real, even though he had no limp. Negative physical examination of the hip does not rule out slipped capital femoral epiphysis or Legg-Calve-Perthes disease. It could be a disaster to miss these diagnoses in a 15 year old. Also, I was planning on treating the innominate shear with a leg pull technique, and I felt that would be contraindicated with a slipped capital femoral epiphysis.

This case resulted in the referral of a number of athletes from his school by the basketball coach.

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Examining the Somatic Dysfunction: Lessons Learned in Practice

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Abstract

This was a prospective study conducted on 15 patients who were randomly chosen from the practice population of a neuromusculoskeletal medicine and osteopathic manipulative medicine/family practice private office. Ninety-one somatic dysfunctions were examined in this study, using three different osteopathic diagnostic techniques, including: Fryette's physiologic motion diagnosis, Johnston's functional method – segmental definition diagnosis and segmental myofascial diagnosis (previously defined by the primary investigator). Each patient was also examined for Zink's fascial diagnostic patterns. The three different OMT techniques that were used in treatment included: Johnston's functional methods, muscle energy technique and a integrated neuromusculoskeletal release using segmental anterior/posterior approach (previously described by the primary investigator). The results indicate that a somatic dysfunction is made up of a constellation of findings representing aberrant function in multiple aspects of the Neuromusculoskeletal system whose treatment is as complex as the problem/s it represents.

Key words: somatic dysfunction, osteopathic manipulative treatment, Zink's fascial diagnostic patterns, Johnston's functional methods, integrated neuromusculoskeletal release, muscle energy technique, myofascial release, manual therapy, osteopathy.

Introduction

One of the primary investigators (JD) mentors, William Johnston, DO, FAAO, once identified an enigma in osteopathic medicine in response to a question posed during a 20-hour course in Functional Methods that the PI was assisting him by table training. This enigma became the central focus of this exploration into the concept of "somatic dysfunction". The question can be broken down into two parts. Part one had to do with diagnosis: "Will the functional findings match the structural findings?" Dr. Johnston informed us that although there would be structural findings at the same level they would not exactly match the functional findings. Part two had to do with treatment: "Will a Functional treatment resolve the structural findings associated with the somatic dysfunction"? Dr. Johnston informed us that the structural findings would improve with functional treatment, but not necessarily be gone. These answers puzzled us then and after years of practice the PI conducted this study to look beyond them. After all, the establishment of the specialty of osteopathic neuromusculoskeletal medicine mandates that we dig deeper into the concepts and traditions that make our profession distinct and nothing is more central to the profession than the concept of 'somatic dysfunction'.

Somatic dysfunction has undergone many modifications as our profession has developed. As the profession has aged and developed, so has its understanding of this very critical concept continued to evolve. The constellation of findings that it has described has had many names. It has been referred to as a "lesion", as the 'Still lesion' and as the 'osteopathic lesion'…until it has finally been given the more politically correct name of the 'somatic dysfunction'. See table 1 for the definition.[1]

Although Andrew Taylor Still, MD, DO never believed in teaching treatment techniques, many techniques have developed. Interestingly, it appears as though many of these different techniques approach the same problem from completely different perspectives. A literature search of the past 10 years of osteopathic literature does not uncover any comparative analysis of how different treatment techniques compare or how they may be synergistic. However, there have been studies examining different diagnostic approaches by different physicians.[2,3] These studies found low agreement of findings in Neuromusculoskeletal examinations by osteopathic physicians using their own diagnostic approaches. Yet, when osteopathic physicians agree on the examining technique to be employed it has been demonstrated to have highly reliable and repeatable findings.[3,4]

In the second edition of the *Foundation's for Osteopathic Medicine* an entire chapter was devoted to the concept of the somatic dysfunction. In reference to the different osteopathic manipulative treatment techniques that are available it states:

"A compelling rationale can be mounted that the many myriad forms of manipulative expression practiced by a

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Definition: Somatic Dysfunction

Impaired or altered function of related components of the somatic (body framework) system: arthrodial, and myofascial structures, and their related vascular, lymphatic, and neural elements.

- Somatic dysfunction is treatable using osteopathic manipulative treatment.
- The positional and motion aspects of somatic dysfunction are best described using at least one of three parameters:
  a. The position of the body part as determined by palpation and referenced to its adjacent defined structure.
  b. The directions in which motion is freer.
  c. The directions in which motion is restricted.

Table 1

variety of practitioners simply represent different points on a treatment armamentarium spectrum and that the putative connective tissue, vascular, biomechanical, and neurophysiologic effects are mediated through final common pathways. Thus, practitioners of the manipulative arts tend to describe the various approaches as separate and discrete techniques, possibly because that permits an easier understanding of the complex relationships governing this body of technique. It is probably more likely that techniques employ multiple interlinking mechanisms, often deployed simultaneously."[5]

In our current study we decided to examine from a more scientific approach the assumption made above. Towards that end, we have conducted the current study breaking down the examination and treatment of the somatic dysfunction from an arthrodial, myofascial and functional approach. Our research questions are threefold:

1. *Does the method we use to define a somatic dysfunction truly define it?* To do this, we examine somatic dysfunctions using several different diagnostic techniques.
2. *Does the treatment of a somatic dysfunction truly treat it?* This is a corollary of the first question and delves into the dangerous quest of trying to examine what 'it' is that we are actually treating with OMT.
3. *Why is it so difficult to perform studies on specific disease states using osteopathic manipulative medicine protocols?* The assumption has been made that *the use of specific protocols is not OMT.*[6] *OMT implies a more holistic approach to the person and respects that each individual brings with them a plethora of problems and combinations of problems.*

Methods

This was a prospective study of 15 patients, which were randomly chosen in a neuromusculoskeletal medicine and osteopathic manipulative medicine/family practice private office. Written informed consent was obtained and witnessed for each patient. The average patient age was 41 years young. Patients were examined for somatic dysfunction in the thoracic and lumbar areas, as well as for Zink's Compensatory pattern. The breakdown of each group, by sex, was one male and four females, for a total of three gentlemen and 12 ladies. See table 2.

Group assignment was based upon the order in which treatment was performed. In Group A, integrated neuromusculoskeletal release using a segmental anterior/posterior approach (INR-SAP) was performed first, followed by muscle energy technique, and then functional technique was performed. In Group B, the order was reversed and in Group C, muscle energy technique was performed first, followed by INR-SAP and then functional.

Group Stratification

Study Demographics			
Group	**Male**	**Female**	**Total**
A	1	4	5
B	1	4	5
C	1	4	5
Total	3	12	15

Table 2

Methods: Group Assignment Based on Treatment Order

Group A	Group B	Group C
• INR-SAP	• Functional	• MET
• MET	• MET	• INR-SAP
• Functional	• INR-SAP	• Functional

Abbreviations

• INR-SAP = Integrated Neuromusculoskeletal Release Segmental Anterior/Posterior

• MET = Muscle Energy Technique

Table 3

There were four diagnostic methods used in this study: Fryette's physiologic motion diagnosis; Johnston's functional method – segmental definition diagnosis; segmental myofascial diagnosis and Zink's fascial diagnosis. The first three diagnostic methods are used for more of a segmental definition than Zink's fascial diagnosis, which is more of a regional assessment. The first three diagnostic techniques are geared for leading the osteopathic physician towards employing a specific approach to treatment…direct or indirect…functionally based, vertebral mechanically-based or myofascially-based.

Muscle Energy Technique

The use of muscle energy technique (MET) is a commonly accepted form of OMT used to treat findings in the thoracic and lumbar areas commonly described using Fryette's principles of physiologic motion. The relevant terminology used to describe these principles in treatment with MET are listed under the subdefinitions of somatic dysfunction in the *Glossary of Osteopathic Terminology*: namely the definition of Type 1 and Type 2 somatic dysfunctions[1]. "A 'Type 1 Somatic dysfunction' is defined as a group curve of thoracic and/or lumbar vertebrae in which the freedom of motion are in neutral with side-bending and rotation in opposite directions. A 'Type 2 somatic dysfunction' is defined as a Thoracic or lumbar somatic dysfunction of a single vertebral unit in which the vertebra is significantly flexed or extended with sidebending and rotation in the same direction."

Functional Methods

In his introduction to his chapter on functional technique in the *Foundations for Osteopathic Medicine* textbook[7], Dr. Johnston asserted from a historical perspective that, due to growing recognition, "motor function was characterized by a broader conceptual framework than just bony relationships." He quoted Charles H. Bowles, DO, who wrote about functional diagnosis and treatment: "This was not the birth of a new entity in osteopathy, but simply a new type of measuring stick for evaluating the Still lesion as a process of aberrated function… Thus the significant functional information about vertebral motion or restriction is not so much that there is motion or restriction, but

rather how these motions and restrictions change, and under what circumstances, and in response to what demands."

To delineate a functional approach further, Dr. Johnston broke motion down into six elementary directions that corresponded to a triaxial system. These were three rotary and three straight-line translatory elementary motion functions. He also included the functional response to the respiratory demands of inhalation and exhalation as a seventh function.

Completing the concept of functional method, Dr. Johnston delineated that the fundamental unit of segmental somatic dysfunction consisted of a three-segment complex with the central segment as the primary defect and the ones above and below as adaptive, secondary responses, which correlated to a somatosomatic reflex. Furthermore, according to Dr. Johnston, when the vertebra and rib are linked in similar patterns, visceral afferents are very likely contributing to the somatic dysfunction through a viscerosomatic reflex.

Integrated Neuromusculoskeletal Release

The principal investigator, inspired by the work of Robert C. Ward, DO, FAAO, wrote previously on the application of a segmental anterior/posterior approach to integrated neuromusculoskeletal release to define somatic dysfunction from a myofascial perspective. Key to this approach is that the somatic dysfunction is defined by an area of increased tissue texture abnormality on the patient's back. The tissue texture abnormality is further defined through an anterior hand contact that reciprocates with the posterior hand at the same level. The fascia is tested for flexion and extension, rotation, sidebending and torsion.[8]

Zink's Fascial Patterning Diagnosis

On a more global scale, J. Gordon Zink, DO described three types of fascial patterning at the junctional regions of the patient.[9] The junctional regions being the craniocervical junction, the cervicothoracic junction, the thoracolumbar junction and the lumbosacral junction. The three patterns were:

1. **Ideal**, in which the fascia was freely mobile in all directions, but this has been rarely found
2. **Compensated**, in which there is a counterbalanced and alternating rotational pattern at the junctional regions
3. **Uncompensated**, in which the rotational pattern at the junctional regions did not alternate

Results

It was found that in the 15 patients in the study, there were a total of 91 somatic dysfunctions examined, which means that on average each patient had six somatic dysfunctions in their thoracic and lumbar areas. In tabulating the fascial patterning of Zink, it was found that no patient had the ideal fascial pattern. Four patients had compensated patterns and 11 patients had uncompensated patterns. Of note, is that the patients in group C, all had uncompensated patterns. Graphically and statistically, 60% of the patients had uncompensated patterns and the other 40% had compensated patterns. See table 4.

In assessing the percent of positive correlation between the structural and functional diagnostic techniques in assessing somatic dysfunction, it was found that in respect to flexion and extension, there was a 40% correlation, which is actually a slightly negative correlation. With respect to sidebending, 57% of the time they correlated. With respect to rotation, there was a 63% correlation, which was the strongest correlation found between variables in the study. See table 5.

Table 4

Results of Treatment Order: Effects on Somatic Dysfunction Findings

Group A	Group B	Group C
• Structural (n=26)	• Structural (n=27)	• INR-SAP (n=30)
– Partly Improved: 19%	– Partly Improved: 22%	– Partly Improved: 3%
– Completely Improved: 46%	– Completely – Improved: 7%	– Completely – Improved: 0%
• Functional (n=13)	• INR-SAP (n=25)	• Functional (n=14)
– Partly Improved: 31%	– Partly – Improved: 32%	– Partly – Improved: 0%
– Completely Improved: 8%	– Completely Improved: 0%	– Completely Improved: 14%

Table 5

In assessing the percent of positive correlation between the functional and myofascial diagnostic techniques in assessing somatic dysfunction, it was found that in respect to flexion and extension, there was a 50% correlation, which is actually a slightly negative correlation. With respect to sidebending, 48% of the time they correlated. And, with respect to rotation, there was a 50% correlation.

In assessing the percent of positive correlation between the myofascial and structural diagnostic techniques in assessing somatic dysfunction, it was found that in respect to flexion and extension, there was a 40% correlation, which was a slightly negative correlation. With respect to sidebending, 43% of the time they correlated, which was again a negative correlation. With respect to rotation, there was a 59% correlation.

With respect to the changes in Zink's fascial patterning after treatment, at the thoracolumbar junction 77% of the time there

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was a change in the pattern and at the lumbosacral junction there was a 38% change in the pattern. Since all three types of treatment were performed in the three groups the Zink fascial patterning could be assessed uniformly before and after all treatments were done.

In group A, after the patient was treated with INR-SAP and re-examined for somatic dysfunction from a structural perspective, the patient's somatic dysfunctions were partly improved 19% of the time and completely improved 46% of the time. See table 5. The key functional somatic dysfunctions were re-examined after treatment with both INR-SAP and MET and it was found that they were partly improved 31% of the time and completely improved 8% of the time. Of note, is that the "n" in table 5 refers to the number of somatic dysfunctions examined and treated as opposed to the number of patients. In the functional groups, there is going to be less somatic dysfunctions identified, because in accordance with the approach that Dr. Johnston used, we identified and treated the most significant somatic dysfunctions.

In group B, after the patient was treated with Functional technique and re-examined for somatic dysfunction from a structural perspective, the patient's somatic dysfunctions were partly improved 22% of the time and completely improved 7% of the time. See table 5. The myofascial component to the somatic dysfunctions were re-examined after treatment with both Functional and MET and it was found that they were partly improved 32% of the time and completely improve in zero patients.

In group C, after the patients were treated with muscle energy technique and re-examined for somatic dysfunction from a myofascial perspective, the patient's somatic dysfunctions were partly improved 3% of the time and completely improved in zero patients. See table 5. After treatment with both MET and INR-SAP, the key functional somatic dysfunctions were re-examined and it was found that they were partly improved in no patients and completely improved 14% of the somatic dysfunctions.

Discussion

With respect to the findings regarding the fascial patterning of Zink, the change being greater at the thoracolumbar junction versus the lumbosacral junction, is consistent with the fact that we treated on both sides of the thoracolumbar junction and only on the lumbar side of the lumbosacral junction. In the end, no patient was dismissed from the office without a full treatment, which included treatment designed to create the ideal Zink fascial pattern at all the junctional areas.

Interestingly, it was found that when patients were examined on a segmental basis for the myofascial patterns, 100% of the patients had an alternating pattern. This is consistent with neurological, reciprocating relationships identified by Vladmir Janda, MD[10], Robert Ward, DO[11] and others[7-9,12]. This leads the authors to the conclusion that, at least in the non-acute patient, there is no such thing as an uncompensated myofascial pattern. The balance at the junctional areas, however, as asserted by Dr. Zink, is of clinical relevance and no conclusions can be drawn from this study beyond the understanding that the body will eventually compensate and these compensations will occur in the spaces between the junctional areas. Not all of those compensations will be favorable.

In trying to answer our first study question, whether the method we use to define a somatic dysfunction truly defines it, we found that by using three different approaches to diagnosis that, despite the use of similar terminology, there appears to be a weak correlation between these examining techniques at best. The correlations are not significant enough to predict optimal treatment position using a technique that the diagnostic technique was not designed to treat. This seems to imply that these different methods examine completely different aspects of the somatic dysfunction. This is an important concept and the authors believe that it gives us insight into why Dr. Still did not like to teach technique: *How can you teach a technique when the problem truly changes depending on which diagnostic lens is applied to examine it?* From this perspective, the somatic dysfunction appears to be an easily studied, practical example of the Heisenberg Uncertainty Principle.

In addressing our second question of whether the treatment of a somatic dysfunction truly treats it, we find that the type of diagnostic method we perform guides us in what type of OMT that we utilize. The results indicate that if we use any of the types of OMT performed in this study, there usually remains some aspect of abnormal function at the site of the somatic dysfunction, at least in the short term. This observation is qualified, because according to the historical use of OMT, we are often just nudging the patient in the direction of health, which unleashes a cascade of physiological responses that result in a healthier state. To paraphrase Dr. Still, *once relieved of an impediment to health the patients inherent drive towards health takes over*. Although these findings are compelling and demonstrate an incomplete short-term response to OMT (in the sense that there are aspects of the somatic dysfunction that remain depending on the method treated and the method examining it), they in no way negate over a century of success in treating patients using OMT, in its various forms and distillations.

The final study question analyzed is *why it is so difficult to perform studies on specific disease states using OMM protocols.* A protocol does not take into account the subtle cues that cause the osteopathic physician to be drawn down the road to diagnosis or treatment with one or many different techniques. In practice, the PI finds he uses anywhere from 1-5 different techniques on each somatic dysfunction to resolve the various indicators of somatic dysfunction at any given level. Often in a study, there is just not the flexibility to match the treatment of the somatic dysfunction with the clinical findings. This may result in mis-treatment of critical aspects of the somatic dysfunction and calls into serious question the validity of studies using OMT protocol treatments. This does not mean that the profession should not pursue protocol studies or not perform certain protocols that have been found successful, because the use of any OMT is certainly better than its neglect. As a result of the current study, we do have a better understanding in appreciating studies that use protocols or address an issue with the use of only one OMT technique.

In conclusion, this study re-examines a concept that we commonly accept in the osteopathic profession. In practice, the PI has found that since these various different aspects of somatic dysfunction exist and are not necessarily completely removed through the application of any one OMT technique, then extra time is required to address them from a variety of

approaches. Furthermore, the authors know of no formal study that has been done to address the long-term effects of different OMT techniques and their long-term impact on the structural, functional and myofascial aspects of somatic dysfunction. This needs to be explored. Lastly, this study does not examine every OMT technique or examination method, but it adds weight to the definition of the "somatic dysfunction" as a constellation of findings indicating aberrant function in multiple aspects of the Neuromusculoskeletal system.

References

1. Ward RC, Glover JC, chairman and the Educational Council on Osteopathic Principles of the American Osteopathic Association. "Glossary of Osteopathic Terminology". *Foundation for Osteopathic Medicine* – 2nd Ed. Lippincott Williams & Wilkins. Philadelphia, PA 2003. 1249
2. McConnell DG, Beal MC, Uri Dinnar, Goodridge JP, Johnston WL, Karni Z, Upledger JE, and Blum, G. "Low Agreement of findings in Neuromusculoskeletal examinations by a group of osteopathic physicians using their own procedures". *JAOA* 1980, 79:7:441-447.
3. Degenhardt BF, Snider KT, Snider EJ, and Johnson JC. "Inter-observer Reliability of Osteopathic Palpatory Diagnostic Tests of the Lumbar Spine: Improvements From Consensus Training". *JAOA*. 2005. 105:10:465-473.
4. Beal MC, Goodridge JP, Johnston WL, and McConnell, DG. "Interexaminer agreement on patient improvement after negotiated selection of tests". *JAOA.* 1980. 79:7:45-53.
5. Jones HJ and Ward RC. "Somatic Dysfunction". *Foundation for Osteopathic Medicine*, 2nd Ed. Lippincott, Williams & Wilkins. Philadelphia, PA. 2003. 1157.
6. Jones JM, Kappler RE, and Ward RC. "Osteopathic Consideration in Palpatory Diagnosis and Manipulative Treatment - Introduction". *Foundation for Osteopathic Medicine,* 2nd Ed. Lippincott, Williams & Wilkins. Philadelphia, PA, 2003. 552-555.
7. Johnston WL and Ward RC. "Functional Technique: An Indirect Method". *Foundation for Osteopathic Medicine*, 2nd Ed. Lippincott, Williams & Wilkins. Philadelphia, PA. 2003. 969-984.
8. Danto JB. A Review of the Principles and Concepts of Integrated Neuromusculoskeletal Release and the Novel Application of a Segmental Anterior/Posterior Approach in the Thoracic, Lumbar and Sacral Regions. *JAOA.* 2003. 103:12:583-596.
9. Pope RE. The Common Compensatory Pattern: Its Origin & Relationship to the Postural Model. *The AAO Journal*. Winter 2003. 19-40.
10. Greenman PE. "Exercise Principles and Prescription". *Principles of Manual Medicine,* 2nd Ed. Williams & Wilkins. Baltimore, MD. 1996. 452-456.
11. Ward RC. "Integrated Neuromusculoskeletal and Myofascial Release". *Foundation for Osteopathic Medicine*, 2nd Ed. Lippincott, Williams & Wilkins. Philadelphia, PA. 2003. 931-968.
12. Guyton AC and Hall, JE. "Motor Functions of the Spinal Cord; The Cord Reflexes". *Textbook of Medical Physiology*, 9th Ed. W.B. Saunders Company. Philadelphia, PA. 1996. 685-696.

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The purpose of the quiz found on the next page is to provide a convenient means of self-assessment for your reading of the scientific content in the *"Examining the Somatic Dysfunction: Lessons Learned in Practice"* by Jay B. Danto, DO, Deborah Z. Danto, Pharm D. and Antoinette T. Burns, OMS-III. Answer each of the questions listed. The correct answers will be published in the December 2007 issue of the *AAOJ*.

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June 2007 AAOJ CME quiz answers:
1. D
2. C
3. B
4. B
5. C
6. D

CME QUIZ

1. Which of the following were acceptable synonyms for "somatic dysfunction" in the past?
   ___ a. The "lesion"
   ___ b. The "Still lesion"
   ___ c. The "Osteopathic lesion"
   ___ d. All of the above
   ___ e. None of the above

2. There have been numerous studies that have identified correlations between the myriad of forms of OMT techniques.

   True or False (circle one)

3. "A group curve of thoracic and/or lumbar vertebrae in which freedom of motion are in neutral with side-bending and rotation in opposite directions." Refers to:
   ___ a. Fryette's Type 1 somatic dysfunction
   ___ b. Fryette's Type 2 somatic dysfunction
   ___ c. Johnston's Type 1 somatic dysfunction
   ___ d. Johnston's Type 2 somatic dysfunction
   ___ e. None of the above

4. Dr. Still delineated the concept of Functional diagnosis as early as 1822.

   True or False (circle one)

5. With regards to Zink's fascial patterning, it has been found in this study that the ideal pattern is extremely common with a prevalence of close to 98% of the studies participants.

   True or False (circle one)

6. This study found that the constellation of structural, myofascial and functional findings that are common components of somatic dysfunction are easily treated with muscle energy technique alone and that osteopathic physicians can be confident in applying only one OMT technique with any somatic dysfunction.

   True or False (circle one)

Occipital Compression and its Potential Uses in Obstetrics

Shannon N. McAfee and Anthony G. Chila

The practice described as *Incitant Cerebrospinal Fluid Technic* was introduced in the osteopathic profession by William Garner Sutherland, DO (1873-1954) in 1939. It appears that his original intention in developing this method and its variations was to demonstrate widespread application in many aspects of medicine[1]. For the purpose of this paper, we will explore this potential in the field of obstetrics. The characteristics of Sutherland's *Primary Respiratory Mechanism (PRM)* in relation to the female anatomy changes during labor allow for the incorporation of cranial technique to augment the birthing process. This is made evident through the amalgamation of cranial bone motion, cerebrospinal fluid production and fluctuation, and its influence on the pituitary and sacrum. Specifically, occipital compression ("compression of the fourth ventricle", "compression of the bulb ") will be discussed regarding its potential uses during and following labor.

Sutherland's concept is seen to involve the entire body as a *unit of physiological function under the name of the Primary Respiratory Mechanism.* The phenomena classically associated with this description include:

The inherent motility of the brain and spinal cord. Magoun states that "every organ in the body exhibits the phenomenon of pulsation or rhythmic action and the brain is no exception[2]." Moskalenko et al. concluded from spectral components that intracranial fluctuations of 5-15 cycles per minute are initiated inside the cranium[3]. Frymann described the cranial rhythmic impulse (CRI) as a palpable sensation which has been observed and recorded as an "expansile-contractile motion that occurs synchronously with heartbeat and respiration and also with a rhythmic periodicity similar to but slower than respiration[4]." Nelson et al. described the similarity of this CRI to the Traube-Hering-Mayer (THM) oscillation which measures the fluctuation in pulse pressure with the frequency of respiration even with arrest of respiration. Both the CRI and the THM oscillations are whole-body phenomenon, in that their effect can be palpated or measured anywhere in the body. It was determined that the CRI and the THM oscillation occur simultaneously[5]. Whether these are unique phenomenon or different measures of the same entity have yet to be determined. Importantly, these studies support the inherent motility of the brain.

The fluctuation of cerebrospinal fluid (CSF). CSF is produced by the choroid plexuses and is contained within the ventricular system and subarachnoid space surrounding the brain and spinal cord. The flow of CSF follows a prescribed course, traveling from the lateral ventricles to the third then the fourth ventricles, where it then enters the subarachnoid space via multiple apertures toward the apex of the brain. A portion of the CSF descends down into the spinal canal. The CSF is then reabsorbed into the venous system via arachnoid villi[6]. Moskalenko et al. describe slow periodic fluctuations in cerebrovascular blood volume and CSF pressure as being responsible for brain tissue and skull bone motion[7]. Magoun states that CSF pulsation seems likely to be one factor in the CRI phenomenon[2]. This constant flow of CSF, as well as the inherent motility of the CNS, acts together in serving as a "cranial pump[8]."

The mobility of the intracranial and intraspinal membranes. The dura mater is of primary importance in that the outer layer forms the periosteal lining on both the inner and outer surfaces of the cranial bones with extensions through the sutures. The inner layer envelops the brain and spinal cord with reduplications, which are the falx cerebri and the tentorium cerebelli[1]. The dura also attaches to the foramen magnum, C2, C3, as well as the lower lumbar segments and the second segment of the sacrum[6]. This continuity of intracranial and intraspinal membranes responds to the cranial pump, thus affecting the motion of the cranial bones and sacrum. Sutherland described these membranes as functioning to cause articular motion, as well as regulating or limiting the normal range of articular mobility. He named this membranous and articular system the Reciprocal Tension Membrane (RTM)[1]. The RTM therefore transmits forces between the cranium and sacrum, which begins to paint the picture on how cranial treatments can be useful in obstetrics.

The articular mobility of the cranial bones. This idea stands as the foundation of Sutherland's work, in that he originally observed a disarticulated skull and thought "the articular surfaces of these bones seemed…to indicate that they were designed for articular mobility." Sutherland further stated that the bony articulations are "not a rigid mechanism," and illustrated that motion is one of many aspects of life[1]. This has been the most debated topic regarding Sutherland's theories; however, there has been excellent research to date that has demonstrated the subtle movement of the cranial bones. Zanakis demonstrated repetitive human parietal bone motion with a frequency ranging from 7 to 12 cycles per minute[9]. Retzlaff et al. performed histological studies of cranial sutures in cadavers and found that "the structure of the cranial suture is such that movement of the cranial bones is possible at all ages as the result of normal physiological processes such as respiration, cardiac activity and alterations in cerebrospinal fluid pressure.[10]" Most recently, Oleski utilized pre- and post-treatment radiographs taken of 12 adult patients with the head in a fixed positioning device. They measured the degree of change in angle between specified cranial landmarks on x-ray prior to and following cranial manipulation. The results confirmed that cranial bone mobility can be documented and measured on radiographs with 91.6% of patients exhibiting dif-

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ferences in measurements at 3 or more sites[11]. The research efforts of these individuals lend support to Sutherland's contention for motion between cranial bones.

The involuntary mobility of the sacrum between the ilia. The sacrum has been observed to have voluntary postural movement, as well as involuntary rocking motion, which is consistent with the involuntary motion of the occiput[8]. The intracranial and intraspinal connections between these two bones allow for them to respond to both the inherent motion of the brain as well as the fluctuation of CSF. Sutherland compared the sacrum to the sphenoid in that both are suspended between two bones, having anterior and posterior rotation, as well as side-bending movement, with both functioning involuntarily as a unit during respiratory periods[1]. Zanakis et al. measured the CRI with simultaneous palpation of the sacrum and found the accuracy in palpating the CRI from the sacrum was greater than 92% compared to kinematic findings[9]. This involuntary motion of the sacrum can be influenced through cranial manipulation, just as manipulation of the sacrum can impact the cranium through the membranous connections of the dura.

Respiration appears to have a strong influence on motion potential between cranial bones. During inhalation, there is flexion at the sphenoid, the spinal cord is drawn upwards, and the sacral base and occiput move posteriorly[1]. This motion of the sacrum is termed counter-nutation[12]. Sutherland's description is that the "extra strong dural membrane surrounds the lower portion of the infundibulum and firmly anchors the pituitary body to the sella turcica.[1]" Therefore it can be understood that during inhalation, when the third ventricle dilates, it lifts the pituitary body within the sella turcica of the sphenoid, thus " elevating the saddle". The reverse is true during exhalation, in that the sphenoid moves into extension, the spinal cord descends, and the sacral base and occiput move anteriorly[1]. This sacral motion is termed nutation[12]. Also during exhalation, the third ventricle contracts, thus allowing the pituitary body to drop within the sella turcica[1]. These descriptions establish the relationship that respiration, appropriate rhythmic cranial motion, and fluctuation of CSF can have on proper functioning of the pituitary.

These movements of the sacrum, as well as motion of the pelvic bones, become important during labor to accommodate the descent of the head into the birth canal. The movement of counter-nutation occurs when the sacrum rotates about an axis determined by the axial ligament such that the sacral base moves superiorly and posteriorly while the apex of the sacrum and tip of the coccyx move anteriorly. This motion allows for increase in the antero-posterior diameter of the pelvic brim with a corresponding decrease in the antero-posterior diameter of the pelvic outlet. Thus, counter-nutation is important for the descent of the fetal head into the bony pelvis during labor. The opposite movements occur during nutation allowing for a decrease in the antero-posterior diameter of the pelvic brim with a corresponding increase in the antero-posterior diameter of the pelvic outlet. Therefore, nutation is important for the delivery of the fetal head[12].

During normal labor, the posterior pituitary is stimulated by the hypothalamus to secrete oxytocin, which is the hormone that initiates uterine contractions[13]. Previously, it was discussed how cranial bone motion and CSF fluctuation can influence the proper functioning of the pituitary. It can then be theorized that any cranial dysfunction or diminished CSF fluctuation may impede the labor process. Therefore, it is easier to understand the potential usefulness of application of occipital compression prior to and during labor to ensure proper pituitary secretion of oxytocin. There has been a preliminary study of 8 primagravidas who were full-term and had yet to experience any uterine contractions. Two of the eight women were eliminated due to testing disruption, while the remaining six received a single occipital compression treatment while being monitored externally by a tokodynamometer for contractions. Each of the six women experienced uterine contractions within a mean of 17.5 minutes (range 1.5-34 minutes)[14]. One of these women began the labor process following the single treatment and delivered within 24 hours. This study demonstrates how occipital compression treatment for full-term pregnant women may be a non-invasive way to induce the labor process.

The goals of cranial treatment include normalization of nerve function and enhancement of proper CSF fluctuation, as well as normalization of function of the cerebrum, thalamus, hypothalamus, and pituitary body. Other goals seek to achieve release of membranous tension and correction of cranial articular strains that may be present[8]. Regarding the occipital compression technique, Sutherland noted that "were one able to get within the cranium and compress the fourth ventricle…it would send the cerebro-spinal fluid fluctuating up into the ventricles, down into the spinal canal, and out into the subarachnoid spaces surrounding the brain and spinal cord." He even states that, "were one able to do this he would have all the systemic ailments of the body under immediate control.[1]"

The response to occipital compression is achieved by inducing extension of the PRM, which facilitates self-healing and stimulates CSF flow. The physician places one palm in the other such that the thenar eminences are parallel to each other. The thenar eminences are then positioned under the head just medial to the occipitomastoid sutures, with the lateral angles of the occiput gently being compressed. Once the cyclic motion of the occiput is recognized, the physician follows the occiput toward extension, thereby discouraging occipital flexion. The motion will begin to decrease in intensity until a still point is achieved, at which point a softening or warmth of the occiput occurs. The cranial motion will begin gently rocking into the flexion and extension phases, and the hands should be removed once it is clear that cranial activity is normalizing[8].

The potential usefulness of occipital compression to induce labor in pregnant females has been discussed. Another consideration is the augmentation of labor once it has begun. Still another application of this treatment relates to potential influence on the pituitary gland. In this instance, the induction or augmentation of uterine contractions following labor may help return the uterus to the pelvic region. In fact, this treatment may be especially beneficial to enhance the actions of contractile drugs in patients whom experience atony of the uterus following labor.

Interest in *Osteopathy in the Cranial Field (OCF)* has grown significantly since its inception by Dr. Sutherland and his teacher, Andrew Taylor Still, MD. However, the advancements that have been made are still based upon Sutherland's foundation of the five components of the Primary Respiratory Mechanism. Each

of the five has been validated through basic science research, but cranial manipulation itself remains an art rather than a scientific commodity. Pertaining to cranial techniques, occipital compression promotes self-regulation and healing regardless of the dysfunction present. Further research needs to be performed to determine the exact usefulness of this treatment in the field of obstetrics, however, I feel that occipital compression can help to augment current medical treatments, and perhaps offer an additional non-invasive means to induce labor. In following the words of Sutherland, "If you do not know what else to do, compress the bulb.[1]"

References

1. Sutherland WG. *The Cranial Bowl*. 1st ed. Mankato, Minn: Free Press Company. 1934. Reprint 1994.
2. Magoun HI. *Osteopathy in the Cranial Field*, 2nd ed. Kirksville, MO. The Journal Printing Company. 1966.
3. Moskalenko, et al. Slow rhythmic oscillations within the human cranium: Phenomenology, origin, and informational significance. Human Physiology. 2001. V27. No.2. pp 171-178.
4. Frymann V. A study of the rhythmic motions of the living cranium. *JAOA*. 1971. vol. 70. pp 928-945.
5. Nelson, et al. Cranial rhythmic impulse related to the Traube-Hering-Mayer oscillation: comparing laser-Doppler flowmetry and palpation. *JAOA*. 2001. Vol. 10:1:163-173.
6. Moore. *Clinically Oriented Anatomy*. 5th ed. Toronto. Lippincott, Williams and Wilkins. 2005.
7. Moskalenko, et al. Physiological Background of the Cranial Rhythmic Impulse and the Primary Respiratory Mechanism. JAOA. 2003. 13:2:21-33.
8. Ward R. *Foundations of Osteopathic Medicine*. 2nd ed. Philadelphia, PA. Williams & Wilkins. 2003. pp 985-1000.
9. Zanakis M. et al. Objective Measurement of the CRI with Manipulation and Palpation of the Sacrum. *JAOA*. 1996. 96:9:551.
10. Retzlaff E, et al. Aging of Cranial Sutures in Humans. Anatomic Record. 1979. vol 193. pp 663.
11. Oleski SL, et al. Radiographic evidence of cranial bone mobility. *Cranio J. Craniomandibular Practice*. 2002. 20:1:34-38.
12. Kapandji IA. *The Physiology of the Joints*. 2nd ed. London. Churchill Livingstone. 1974. pp 64-67.
13. Cunningham G, et al. *Williams Obstetrics*. 22nd ed. New York, NY. McGraw-Hill. 2005.
14. Gitlin RS and Wolf DL. Uterine contractions following osteopathic cranial manipulation – a pilot study. J. American Osteopathic Association. 1992. vol 92. pp. 1183.

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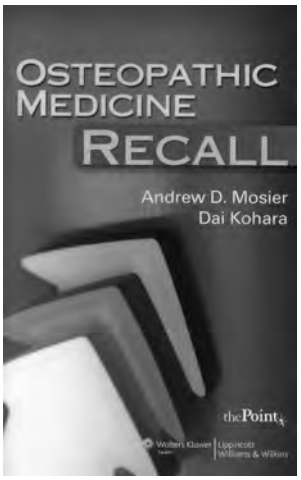
Book Review

Robert C. Clark, Reviewer



Osteopathic Medicine Recall. **Editors Andrew D. Mosier and Dai Kohara**
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This compact 5"x8" book published by Lipincott Williams and Wilkins is part of the Recall series of review and study guides. It is formatted in a question and answer style with fourteen chapters. The authors are graduates of OUCOM but the credits given in the book are a bit vague: "University College of Osteopathic Medicine (OUCOM)".

For a student who desires an easy review or study format, this could be a very useful tool. A lot of material is covered. The book appears broad in scope and topic. The coverage includes principles, techniques and applications. A full spectrum of Osteopathic Manipulative Techniques is included. The authors provide a list of references for further study. The 14th chapter reviews the Travell trigger points. Although not *osteopathic* by origin, it is an appropriate topic to include.

One portion of the technique review chapters was new to this reviewer. Classifying manipulative techniques as direct acting and indirect acting is very familiar but classifying those techniques as "active or passive" was new. The use of the terms active and passive in describing techniques was consistent with the use of those terms in describing motion or movement.

There are few inaccuracies that might slip by some but are still wrong. It starts with the very first question: "What are Andrew Taylor Still, MD's four principles of osteopathy?" The answer lists the four principles that were created in 1953 at the Kirksville College of Osteopathy and Surgery. Obviously this statement of principles occurred well after Dr. Still's death. Later the authors review the *Laws of Fryette*. While it may be a pedantic point, Fryette in his writings specifically described his observations as theorems and refuted calling them laws. This reviewer asks when and who elevated them from theorems to laws!

Despite some shortcomings, the book is a concise and comprehensive study guide that would be useful in test preparation.

Readers are invited to submitted reviews of books that they have found interesting. Send your book reviews to the submission address listed in the masthead of this journal. The editor invites electronic submission in Word® format via e-mail, floppy disc or CD-ROM.

Elsewhere in Print

Philosophy, Science, Art

In this issue, we look at www.Medscape.com which is emailed free of charge to subscribers each week. This electronic magazine has a mix of editorial opinion, medical news and CME for practitioners. It often cites other journals as sources of its news items. Three examples are presented for your consideration.

From the May 14, 2007 posting is an article by Paul Goodley, MD titled "Examining for Pains in the Neck". Dr. Goodley consulted for the Veterans Administration in Orthopaedic Medicine and worked with a number of the physical therapists working in the Veterans Administration's hospitals and clinics. He has also worked with a number of osteopathic physicians including this reviewer in the Los Angeles area.

In this article, he discusses the art of palpation and the challenges of teaching palpation. From the perspective of one who has taught OMM and palpation, his observations are accurate. His admonitions are precise. This is a good article for all students of osteopathy, both experienced and beginning. Clinicians will find his discussion fair, complete and interesting. At the end of the article, he reminds us that the problem in not always where the patient complains of pain!

The second article is by Ali Yaksi, MD, et al. It was posted June 29, 2007 and is cited as originating in SPINE. "The Efficiency of Gabapentin Therapy in Patients with Lumbar Spinal Stenosis," compared standard treatment for patients with neurologic intermittent claudication of spinal Stenosis with standard treatment plus Gabapentin. The Gabapentin group had greater walking distance before symptoms and faster recovery. Because the study was limited to 55 patients, the authors recommend larger scale studies to verify their conclusions.

From *SPINE* and posted on Medscape, July 3, 2007, is "A Comparison of Two Short Education Programs for Improving Back Pain-Related Disability in the Elderly: A Cluster Randomized Controlled Trial." Eight researchers did the study for the Spanish Back Pain Research Network. Nursing home residents with back pain received a twenty-minute talk and the Back Book (active management group) or were given The Back Guide (postural hygiene group) or a pamphlet on cardiovascular health (control group). Using the criteria described in the study, the active management group showed the greatest reduction in disability and pain.

This article, however, is disappointing in that it totally ignores all physical means of addressing back pain and related disability.

Readers are invited to submit their citations of interesting articles and journals for future issues. Submit them to the editor at the address or email listed in the instructions for submissions.

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