THE AAO
JOURNAL
A Publication of the American Academy of Osteopathy
TRADITION SHAPES THE FUTURE • VOLUME 10 NUMBER 2 SUMMER 2000

Osteopathic Manipulative Treatment in prenatal care

see page 25

AAO's CME Calendar

2000

July
14-16
Alleviation of Common, Chronic Pain by Optimization of Posture
OSUCOM
Tulsa, OK
Hours: 20 Category 1A

August
17-20
OMT Update
Contemporary Hotel
Buena Vista, FL
Hours: 23 Category 1A

25-27
Visceral Manipulation/Abdominal/GI
Holiday Inn Airport
Indianapolis, IN
Hours: 24 Category 1A

September
13-15
Therapeutic Exercise with OMT
Holiday Inn Airport
Indianapolis, IN
Hours: 20 Category 1A

16-17
Advanced Percussion Vibrator
Holiday Inn Airport
Indianapolis, IN
Hours: 14 Category 1A

October
13-15
Stimulated Ligament Reconstruction/ Below the Diaphragm (Prolotherapy)
UNECOM in Biddeford, ME
Hours: 20 Category 1A

28
One-day "Hands-on" GI Workshop
Orange County Convention Center
Orlando, FL
Hours: 8 Category 1A

29-November 2
AOA/AAO Convention
Orange County Convention Center
Orlando, FL

December
1-3
Visceral Manipulation/Thorax/Dura
Holiday Inn Airport
Indianapolis, IN
Hours: 24 Category 1A

2001

(CME dates and sites tentative)

January 12-14
Introduction to OMT/Counterstrain
Reno, NV

January 31-February 1
Ligamentous Articular Strain
Indianapolis, IN

February 2-4
Bioelectric Fascial Activation and Release
Indianapolis, IN

March 19-21
Visceral Manipulation Workshop (Emotional/Trauma)
The Broadmoor
Colorado Springs, CO

March 22-25
AAO Convocation
The Broadmoor in Colorado Springs, CO

April 20-22
Diagnosis & Treatment of Low Back Pain
U.S. Wine Country

May 4-6
Prolotherapy/Above the Diaphragm
UNECOM
Biddeford, ME

May 18-20
New Advances in HVLA
Midwestern University/CCOM
Chicago, IL

May 19-20
Fulford Percussion Technique (Basic)
Midwestern University/CCOM
Chicago, IL

June 1-3
Introduction to OMT/Muscle Energy
Indianapolis, IN

July 6-8
Osteopathic Considerations in Systemic Dysfunction
UNTHSC at Fort Worth/TCOM
Fort Worth, TX

July 27-29
Alleviation of Common, Chronic Pain by Optimization of Normal Posture
Chicago Marriott Downtown
Chicago, IL

August 16-19
OMT Update at WDW®
Buena Vista, FL

August 24-26
Visceral Manipulation (Abdominal)
Indianapolis, IN

September 14-16
Introduction to HVLA Basic
Savannah, GA

The Still Technique: A Manipulative Method of Andrew Taylor Still, MD
Savannah, GA

October 5-7
Prolotherapy/Below the Diaphragm
UNECOM in Biddeford, ME

October 21-25
AOA/AAO Convention
San Diego, CA

November 30-December 2
Visceral Manipulation (Thorax/Dura)
Indianapolis, IN

For more information, contact:
American Academy of Osteopathy®
3500 DePauw Boulevard, Suite 1080
Indianapolis, IN 46268-1136
Phone: (317) 879-1881 or
Fax: (317)879-0563
E-mail: AAODLF@aol.com

American® Academy of Osteopathy
3500 DePauw Boulevard
Suite 1080
Indianapolis, IN 46268-1136
(317) 879-1881
FAX (317) 879-0563

The AAO Journal is the official quarterly publication of the American Academy of Osteopathy, 3500 DePauw Blvd., Suite 1080, Indianapolis, Indiana, 46268-1136. Phone: 317-879-1881; FAX: (317) 879-0563; e-mail AAOSJN@aol.com; AAO Website: http://www.aao.medguide.net

Third-class postage paid at Carmel, IN. Postmaster: Send address changes to American Academy of Osteopathy 3500 DePauw Blvd., Suite 1080, Indianapolis, IN., 46268-1136

THE AAO
JOURNAL
A Publication of the American Academy of Osteopathy
THE VOICE OF TRADITION

The mission of the American Academy of Osteopathy is to teach, advocate, advance, explore, and research the science and art of osteopathic medicine, emphasizing osteopathic principles, philosophy, palpatory diagnosis and osteopathic manipulative treatment in total health care.

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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.

Professional News of promotions, awards, appointments and other similar professional activities.

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 Anthony G. Chila, DO, FAAO, Editor-in-Chief, Ohio University, College of Osteopathic Medicine (OUCOM), Grosvenor Hall, Athens, OH 45701.

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 three 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.

Computer Disks
We encourage and welcome computer disks containing the material submitted in hard copy form. Though we prefer Macintosh 3-1/2" disks, MS-DOS formats using either 3-1/2" or 5-1/4" discs are equally acceptable.

Abstract
Provide a 150-word abstract that summarizes the main points of the paper and it's conclusions.

Illustrations
1. Be sure that illustrations submitted are clearly labeled.

2. Photos should be submitted as 5" x 7" glossy black and white prints with high contrast. On the back of each, clearly indicate the top of the photo. Use a photocopy to indicate the placement of arrows and other markers on the photos. If color is necessary, submit clearly labeled 35 mm slides with the tops marked on the frames. All illustrations will be returned to the authors of published manuscripts.

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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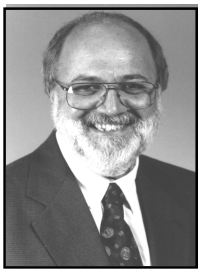
From the Editor

by Anthony G. Chila, DO, FAAO



Renewal

The period of time between spring and summer is a time of renewal. With the passing of winter, new growth begins. We all know and experience renewal during the Annual Convocation program of the American Academy of Osteopathy. The March 2000 meeting in Cleveland, Ohio was, interestingly, held at the Renaissance Hotel. I believe that served as a guide for us as we prepare to move into the first year of the new millennium. Executive Director Stephen J. Noone, CAE offers excellent insights about the recent program in his column. Fellowship status was conferred on Drs. David C. Eland, Daniel D. Janiak, R. Paul Lee, and Claudia L. McCarty. It was my privilege, indeed, to have served as sponsor for each of these osteopathic physicians. Shortly following the program, death claimed two beloved members: Bernard A. TePoorten, DO, FAAO (April 6) and Alan R. Becker, DO, FAAO (April 12). For many years, I enjoyed committee participation with Dr. TePoorten on the Mead-Johnson Fellowship Grants Program (now administered as the Bristol Myers-Squibb Program under the American Osteopathic Foundation). My personal friendship with Dr. Becker began in 1976, and I count it a singular honor to have served as President-Elect during his presidency, 1982-1983.

The purpose of Memorial Lectures is not only to honor those for whom the lectures are named, and the laureates, but to offer challenge of many levels to the various audiences. Dr. James S. Jealous' 1999 Thomas L. Northup Lecture, "Accepting the death of osteopathy: A new beginning", continues to bring comment. Following his column, a letter from Charles H. Cummings, DO, FAAFP is given for your consideration. This well-written communication addresses the vitality of osteopathy in the contemporary primary care practice of osteopathic medicine. The 1999 Scott Memorial Lecture, "From the Ground Up", was delivered by Eileen L. DiGiovanna, DO, FAAO. Dr. DiGiovanna eloquently addresses the building of a foundation for future osteopathic physicians via Andrew Taylor Still's analogy of the osteopath to a carpenter.

Although many veins of high grade ore have been found and worked, others just as valuable remain to be discovered.

Dr. Still regularly described his baby, osteopathy, as a Philosophy, a Science, and an Art. Student Doctor Adam Quinn (third year, DMU) offers a challenging view of the "Common Compensatory Pattern", as seen in Art and Osteopathy using an illustrative format. The format, however, is based on his holding an MFA degree in medical illustration and having worked as a medical photographer prior to entering DMU. This contribution can certainly be said to address the timelessness of osteopathy.

Prenatal care is addressed by Hollis H. King, DO, PhD, FAAO. Currently serving as Chairman of the AAO Publications Committee, Dr. King submitted for his FAAO Scientific Paper/Thesis, "Osteopathic Manipulative Treatment in Prenatal Care: Evidence supporting improved outcomes and health policy implications". This study assessed the potential of the application of OMT during pregnancy for the reduction of morbidity and expenditure of money in prenatal and postnatal care.

With this issue, a new column is introduced, "Dig On". Andrew Taylor Still viewed osteopathy as a philosophy, science and art whose potential was not fully realized. Carl P. McConnell acknowledged Dr. Still's prayer that each osteopath, individually, add his/her mite to the perfecting of some niche of the superstructure. C.V. Rowlingson described osteopathy as a therapeutic gold mine. Although many veins of high grade ore have been found and worked, others just as valuable remain to be discovered. William Garner Sutherland's approach to his own study was that of "digging on". The column will seek to do so.❐

Letter to the Editor

Dear Editor:

I felt compelled to write to Dr. Jealous's[1] letter on the death of osteopathy. I have studied with Dr. Jealous, and I have the highest regard for him, but as a board-certified family physician, my perspective is certainly different from a physician specializing in manual medicine. I know that osteopathic philosophy and manual diagnosis/technique influence my everyday practice of primary care medicine.

My first inclination was to argue that osteopathy is not dead. On further reflection, I realize that Dr. Jealous refers to osteopathy as a comprehensive system of medicine putting manual diagnosis and treatment first and trivializing all other aspects of medicine. That reference is [illegible] as osteopathy. My conclusion is that osteopathy as an isolated system of medicine is indeed dead, but the osteopathic philosophy and influence on modern-day medicine is very much alive.

Dr. Jealous may feel that we have abandoned our osteopathic roots, but osteopathic medicine is vibrant and adaptive, and has been transformed along with the needs of society. Manipulative treatment was the best treatment alternative at the turn of the Century, and out of this emerged the osteopathic philosophy (which was revolutionary enough at the time to result in an entirely new school of medicine.) However, even though amazing results can be achieved with manual medicine, society no longer expects nor will tolerate physicians to treat patients only with their hands and without the benefits of all the advances in medicine. We are doctors first, and as osteopathic physicians our first responsibility is not to [illegible] about the [illegible] the patient. Trained in the osteopathic philosophy, it is our responsibility to integrate the best combination of modern technology and manual methods within the framework of our osteopathic and general medical training.

“My conclusion is that osteopathy as an isolated system of medicine is indeed dead, but the osteopathic philosophy and influence on modern day medicine is very much alive.”

In my own practice, I initially started out focusing on musculoskeletal manual medicine, but found that my patient population did not represent my community. I was seeing a preponderance of patients with fibromyalgia, chronic pain, or seeking alternative treatments. Although these patients need and deserve health-care treatment, this practice did not meet [illegible] goals as a [illegible] physician. [illegible] developed the primary care aspects of my practice. Currently, I have over [illegible] patients, [illegible] expect [illegible] see every patient who comes to me not because I am an osteopathic physician, but because I am the local primary care doctor. I use my hands to assist in diagnosis. In addition to using medication and all other resources available to me as a primary care physician, I provide manual treatment [illegible] to patients [illegible]. Unlike many [illegible] specializing in manual medicine, I accept all the insurances available in my community, which gives the patients [illegible] access to my treatment. Because my fees are [illegible] by the insurance companies, I must see about 30 patients a day, which also defines the types of treatment that I am able to provide.

Our profession is driven to be [illegible]. Even if we wanted to be “alternative practitioners” who just use manual medicine to treat all ailments, we would find that [illegible] with the practice of primary care medicine. In order to accept the insurances and allow access to the patients [illegible] the community, primary care physicians must see a high volume of patients. Certainly, manual medicine specialists who only accept cash and spend one hour with each patient have their places. I do not want to minimize the amazing results that an osteopathic physician, like Dr. Jealous, can achieve with his hands. However, I feel that type of practice does not allow the type of access that patients expect from their primary care physicians. The way that we practice osteopathic medicine is very different from that of A.T. Still. The difference is not only due to advances in technology but also molded by social forces such as insurance, the costs of medical technology, and [illegible] of [illegible]. This does not mean that the rest of us are less than [illegible]. In fact, I argue that it is the transformation of our profession has occurred along with changes in society as a whole, that has been [illegible] the survival of our profession.

Dr. Jealous teaches us to use our hands to examine The Health and augment the healing potential inherent in the patient. Does that mean that any treatment modality that does not include that approach is not osteopathic [illegible] Drs. Still and Sutherland and many

have used their hands in diagnosis and treatment exclusively, but they also had patients die of diabetes, CHF, hypertension, etc., who would have lived much longer with the medications available today. At the turn of the century, a physician's prescription was better if he could use manual medicine to the exclusion of toxic allopathic medicines, but that is no longer the case. In fact, pharmacologic therapy now enhances the [illegible] function, and the description of the practice of modern day medicine as "allopathic" is probably outdated.[2]

Dr. Jealous has fine-tuned his manual skills to a high degree. His concept and methods to manually evaluate the Health is so important to him that he focuses on that ev- [illegible] but to say, I do not feel fortunate [illegible] osteopathic physician. I [illegible] skills in manual medicine to [illegible] practice. In my way, I [illegible] whom to use OMT. Not all sick patients [illegible] and I do not necessarily want to do OMT on each patient every time. Some patients [illegible] argue that those patients should go to DOs, but I went to medical school with the intention of providing comprehensive primary care. I disagree. I am a physician for my community. My [illegible] tools, and scalpels and prescriptions, but so are my manual skills. What is important about osteopathic medicine when I [illegible] practice of medicine a higher level? I, as the physician, [illegible] everything that I, as the physician, [illegible] Jealous, Dr. [illegible] manual specialize in [illegible] professional in practice and [illegible]. (Can an non-osteopathic physician practice osteopathic medicine in the 21st century? Do you [illegible] first place)

Although hands-on treatment is one potential of the osteopathic profession, it is part of the comprehensive approach to managing the comprehensive healthcare needs of the patient perceiving the health, evaluating the primary respiratory mechanism, or manipulating areas of somatic dys-

function. Of course, the osteopathic physician should use those skills. It is not just the combination; it is arrogant for a physician to think that he can provide comprehensive care in the 21st Century without physical therapists (many of whom are working just as hard to master techniques) and chiropractors. But, remaining up-to-date in medical areas such as integration of manual evaluation and treatment in the hands of physicians is what does the osteopathic profession [illegible] for the patients in our communities, primary care physicians, and general internists, among other things, stay up-to-date on new medications and technologies, changes in immunization schedules, manage chronic diseases such as diabetes, risk factors, aggressively provide cancer screening, and teach prevention. In these care, primary care provides the true integration as not aspects of medical care to be added at the end of the patient encounter, and there are many times when I do not feel that OMT needs to be the focus. Rather, other osteopathic physicians over manual medicine. Likewise, physicians skilled in manual medicine but who are not up to the job of providing the best of these other aspects of medical care, should think of themselves as specialists and refrain from describing themselves as family practice physicians.

I am offended by the term "traditional osteopathy" and the implication that the brand of medical care that some of us practice is "not osteopathic enough." I see osteopathy firstly as a philosophy guiding modern medical practice. The role of the osteopathic physician is to remove barriers and promote the healing process in the patient. Osteopathic manual treatment is the ideal situation, but in the practical office or hospital setting, that is not always achieved. While it is unfortunate that many in [illegible] expect is that everyone be expert in non-manual [illegible] diagnosis and treatment to the full potential, it is counterproductive to potential inherent in the patient. Likewise, physicians who are [illegible] not in [illegible] will be defined by manual procedures, and the goal is not the technique but the physician's [illegible] wrong to be [illegible].

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Message from the President

by John M. Jones, III, DO

Presidential Address

American Academy of Osteopathy, Undergraduate Academy, affiliate members and guests, I would like to thank you for the honor of serving you this year as your president.

Last fall, a number of us heard a speech which said that osteopathy is dead. So I would like to ask you tonight, and I need to hear your answer loud and clear: *Is osteopathy dead?* (Audience responded with a loud "NO!")

Well then, are you ready to help me create a new osteopathic millennium? (Audience responded with a loud "Yes!")

Osteopathy is not dead. I am afraid the reports of its death have been greatly exaggerated. But it is out of control. Completely out of control. Because you cannot control a force of nature.

You have given me the opportunity of being your millennial president. Tonight, I would like to look at where we came from, what we have learned, where we are, and what it will take to create an osteopathic millennium by continuing the revolution A. T. Still started, the reformation of medicine.

First, let us look at the past.

Andrew Taylor Still said that God was the author of osteopathy, and that its age was the age of the universe. What did he mean? He called God *The Unknowable* and *The God of Nature*, frequently. He understood God best through the science of anatomy. He meant that we should use our minds to aid natural forces to assist patients to attain health. And, he definitely meant that we would do it by using manipulation to eliminate anatomical derangement in order to enhance the natural physiological processes of homeostasis in attaining health.

But, how many of us feel that he would not have used antibiotics to save his children who were dying of meningitis, if those medicines had been available? The reason Still left the traditions of the medical community of his day was because there was no medicine which was able to save them. Their deaths caused him to seek the development of a new system of healing. What Still called attention to in his new system, osteopathy, was the shift in consciousness from an illness model to a model of assisting host control to reattain and maintain health.

Aspects of both the illness model and the wellness model are true. Like the coexisting particle and wave natures of light, they are two different ways of looking at the facts. A host in good condition can resist illness, but not all illness from any cause. If anyone should doubt this, he or she could take sufficient strychnine to test it.

Still said that the underlying principles of osteopathy are the principles of truth (in one of his books, he said, "if it's not true, it's not osteopathy"). That means we must integrate all new truths which are discovered, and either fit them into the framework of the principles we know, or derive new principles.

Now, let us take a look at the present. What in the world is going on with osteopathy?

Worldwide, we are in a good state of health. The revolution continues; the evolution continues. Ideas, like viruses spreading a gene therapy go from individual to individual or group to group. There is much diversity among those who are using osteopathic principles; this is good because it leads to progress. There is some danger here, too, if people do not know *when* to refer for medical or surgical treatment when it is needed. That is if they are not going to provide that type of care themselves.

We know now that the etiology of all illness is not anatomical discord. There are genetic causes, such as in cystic fibrosis; organ failure causes, such as in insulin dependent diabetes; environmental causes, as in radiation poisoning; habit or life-style causes, such as in the relationship between smoking, cancer, and heart disease; psychological causes, such as stress and depression. However, we also know that anatomical derangement does cause physiologic stress, and that to deal with the anatomical discord is important regardless as to

whether it is the cause or an interactive part of the illness. The interaction of anatomy and physiology is extremely important.

In the past 126 years since Andrew Taylor Still "flung the banner of osteopathy to the breeze," there has been a lot of progress in medicine and surgery, but there have also been many contradictions and paradoxes. It is true that the medicines and surgical techniques which have been developed are much more efficacious than the toxins which were being used in his day. But in spite of this, in some ways our current state of the art reminds me of Leonard McCoy in the movie Star Trek IV when he called our era part of the dark ages.

Allopathic medicine has also made a lot of progress in the past 126 years. It is no longer allopathic medicine. It has become scientific medicine. One of Still's primary criticisms of the allopathic medicine of his time was that it was based on tradition and speculation without research. This has changed. Much of modern medicine, however, still lacks a unifying philosophy. And in spite of the progress, there is still much to criticize.

For example, publications have estimated that approximately 90,000 patients die annually from medical errors, making them a leading cause of death. This indicates we have a problem with the way we are doing things. Not just with the medicines, but with how we treat people. The recent death at the Penn State gene therapy program was caused when the patient and his family were not informed that half of the animal experiments had resulted in the death of the animals. Two popular medicines, Rezulin and Propulsid, were removed from the market this week while we have been here, because they have been linked to numerous patient deaths.

At the beginning of the osteopathic profession, all patients were treated with manipulation. In the table of contents for his autobiography, Still said that 75 percent of patients were helped, 50 percent cured. He also said in *Osteopathy, Research and Practice* that manipulation would only work if the body had enough recuperative power in it to overcome the illness it was suffering.

The osteopathic profession in the United States has learned a great deal in the past century about two things: how the power of new discoveries interacts with basic principles, and how demographics interact with the possession of an unlimited medical and surgical license. New information and possibilities can make good principles seem out of style, outmoded, to some students. An unlimited licensure attracts people who are not interested not in the power of those principles, but in the power of the unlimited license.

One of our problems in the United States in attracting us to people who believe in the osteopathic philosophy is that in the United States, there is very poor name recognition for the terms osteopathy or osteopathic medicine, or even DO.

In a British survey, however, there was excellent name recognition, and a high level of respect for osteopaths, who in Great Britain are not physicians but are nonetheless valued as health care practitioners.

A recent survey stated that only about 6 percent of DOs in the United States frequently use OMT with patients. And, while the majority (about 60 percent) of our graduates are training in allopathic postgraduate programs, only about 19 percent of them return to us as AOA members.

Danger comes to us from both stasis and change, particularly in this case demographic change, such as what has occurred in the balance of matriculating students. Who is coming into our schools in the United States?

Last year at KCOM, only 14 percent of the students said that becoming a DO was their top objective. The rest admitted that their primary objective before coming to our school had been to become an MD.

When you take into a profession people with no real commitment to its principles, you should not be surprised when they do not turn out to be committed. They may in the long run become loyal to their school without ever becoming loyal to the osteopathic profession or its principles.

Let us get interactive tonight. There has been a resolution introduced for the AOA House of Delegates which would eliminate the use of the word "osteopathy" and only allow the use of the term "osteopathic medicine" in all AOA materials. We investigated whether or not that would mean we would be asked to change the name of the American Academy of Osteopathy, and the legal opinion from the AOA lawyers was that this decision would only apply to materials printed by the AOA and would not affect our name.

But if we give up this name, we leave it open to others. To represent you at the AOA House of Delegates, I need to hear how you feel. The incoming president of the AOA is here tonight. Let him know how you feel. Do you want to give up the name "osteopathy?" (Audience responds with a loud, "NO!")

That is good. Because when you cut off a plant from its roots, it dies. And I would have had to resign if you did not want to keep our name. This interaction should have clarified that the American Academy of Osteopathy is not having an identity crisis. We know who we are and always have. The American Osteopathic Association has definitely been having an identity crisis, from almost the beginning. In the early years, this was because of conflict between those who wanted to integrate medical research, and those who preferred dogma. Recently, it has been because we are not attracting enough students

who are interested in osteopathic practice. Demographics of our matriculants insure that this will continue. Leaders within the AOA are taking steps to work on this. In spite of these steps, both economic and demographic forces opposing the osteopathic medical philosophy are very powerful.

It is always interesting to me when I run into people who say that MDs cannot get interested in and follow the osteopathic philosophy. I find this fascinating because Still himself was an MD who did exactly that. Yet, we have both international and even a few American DOs who feel that this is impossible. Interestingly, Still also included surgery, obstetrics and certainly medical diagnosis as part of osteopathy. Those who follow the model which developed from Littlejohn, which is to say most of those who call themselves osteopaths outside of the United States, do not include surgery, obstetrics, or medical diagnosis, because they do not have enough knowledge or experience to do a good differential diagnosis.

So we have an interesting situation as evolution continues: The majority of American DOs do not use manipulation very much, and none of the international diplomates practice surgery, obstetrics, or medical differential diagnosis unless they also hold an MD degree. So, in fact, virtually no one is practicing osteopathy the way Still envisioned it. In a way, this is probably good, as his vision was from a hundred years ago and based on the data that was available at that time. Facing the facts should help all of us to eliminate the self-righteousness of claiming "We are the only true osteopaths." Working toward developing the ideal is much more productive.

Historically, a profession which originates as a new system within the context of a traditional profession will tend to be reabsorbed, after it has contributed new ideas which alter the mainstream. We have not altered the mainstream enough yet to want to be reabsorbed.

Internationally, we find many schools in various countries producing diplomats of osteopathy at varying levels of expertise, most of which are working on upgrading their quality, but not necessarily with the intention of developing a profession of fully licensed physicians. Perhaps, they are desiring to master complete medical diagnosis, but limiting their intervention to manipulation, so as not to lose their identity and evolve to the point where their students no longer want to practice osteopathy, when the purely medical aspects have taken over. There are also schools for postgraduate osteopathic training of MDs. It is logical that many international diplomats of osteopathy will see what the American evolution has been, with many United States. DOs not using manipulation, and will not want a full license, so that their graduates will continue to use manipulation.

So what are we doing to combat the powerful forces of demographics and economics?

In the United States, osteopathic educators have developed many tools to promote osteopathic principles and practice. These include:

- a unified glossary of osteopathic terms, so that we all have a common language
- a core curriculum document to recommend how osteopathic principles should be integrated into the osteopathic medical education
- an omnibus textbook
- many additional textbooks
- materials for instruction in postgraduate education
- at a few schools, mandatory rotations in OMM

We have two greatest current needs: 1) to be sure we are matriculating students who are actually interested in learning and integrating osteopathic principles and treatment into the full scope of medical and surgical practice. 2) research to support why they should indeed be interested in doing so.

Now let us consider the future. Our goal is worldwide osteopathy in the new millennium. There is *one* human race which exists on this planet, and the human race needs improved health care. Not just Americans, and not just by an American system. The development of this model is taking place all around the planet, and each culture will continue to its progress.

The osteopathic model is a paradigm shift, a way of working with the patient using the principles of modifying body/mind/spirit components to achieve the balance we call physical health, as well as the ability to function mentally and emotionally.

Paradigm shifts are difficult for people to adopt. Let me give you an example. In a Harvard study of mental models, about 25 graduates were asked on graduation day why the Earth is colder in winter. The vast majority said it was because the Earth is farther away from the sun. These were highly intelligent Harvard graduates, one of whom said his major was physics, who had been taught in elementary, junior high, and high school that seasonal changes are due to the Earth's tilt on its axis. But, the mental model learned at two years of age that when they were approaching a light source, meant approaching heat, while retreating from it, meant cold, was more powerful than the scientific basis of seasonal change, taught much later.

The osteopathic reformation of health care is both revolution—a paradigm shift—and evolution, the experimentation and development of how to use that paradigm shift. What we seek is the total permeation of health care by osteopathic principles, to the level even of mother and child, for what mother does not render simple medical care to her child?

To make progress in the United States, we need to lay aside disagreements and work more closely with the

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family practice doctors in the AOA. We need to work with others around the world who share the osteopathic philosophy, recognizing that while we think the American model is ideal, many of them do not, for good reasons.

Now that our board certification is guaranteed, even with an inaccurate name change, the road to helping the AOA without feeling threatened by our parent organization is wide open.

First, we are not talking about helping them. It is not them and us. We are talking about helping ourselves. We, along with others, are them.

We can help in the following ways:

- Study, maintain, develop and refine and teach and practice osteopathic principles.
- Support our colleges and family practice programs in reestablishing osteopathic principles and practice as an integral part of their programs.
- Assist in research.
- Form alliances to work with others who use and believe in osteopathic principles.
- Integrate in our practices everything which is scientifically demonstrated.
- Teach and recruit our students by being preceptors.
- Lose the holier than thou attitude.
- Support the American Osteopathic Foundation, to provide money for scholarships, research, and the visiting clinician program.
- Support the AOA Unity Campaign (financially, not just in word).

We need to graft osteopathic genes into the students by requiring sufficient knowledge and experience in their training, and also into the rest of the MDs in our country and the world. For example, every osteopathic medical student should have a required rotation in osteopathic manipulative medicine.

To make progress in the world, the international DOs need to graft in the genes for medical differential diagnosis. That way, their practice of manipulation will be done in the context of safety for the patient: like all good health care workers, they should realize—as Still did—that nothing is a panacea, and refer patients to other experts when the condition needing treatment lies outside their expertise. In the context of full-time university-affiliated programs, they should continue to make progress in studying diagnosis and treatment to the point that all of the osteopathic practitioners are the equal of physicians in diagnosis and superior in treatment, knowing when to refer to others if the treatment required is beyond their scope of practice.

Still's warning to the profession was that the danger is from within.

Unless you preach it, teach it, and practice it, he said, it will die. Complacency will not create an osteopathic millennium. Cooperative rational action by those who share this philosophy is the only thing which can.

So we are left with this as individuals:

- Working on having good intentions
- Developing our personal integrity, meaning knowledge, skills and ethics
- Achieving excellence
- Having respect for others
- Trying to make the world a safe place for human beings, knowing that we cannot.
- Cooperating with each other to further the osteopathic ideal

We must also expand out thoughts on how to use the principles of osteopathy, the principles of natural balance, to deal with our environment. While the world's population doubles in the next 30-35 years, which will create unbelievable problems, we quibble over small points. It is a large stage, and most of us are looking at a small corner. But that's a thought for another occasion.

I cannot think of anyone I would rather work with on these goals than you. Thank you for giving me this opportunity.❐

Alleviation of Common, Chronic Pain by Optimization of Normal Posture

Friday – Sunday • July 14-16, 2000 • OSUCOM, Tulsa, OK

Course Co-Faculty and Co- Program Chairs: Robert Irvin, DO and Ross Pope, DO

CME Hours: 20 Category 1A

***Course Description*:**

This is the first course offered through the Academy that combines osteopathic manipulation with postural radiography, postural exercises, heel lifts, ischial lifts, foot orthotics, and oral orthotics to enable alleviation of the greater portion of chronic pain, chronic somatic dysfunction, and the reduction of spinal scoliosis.

This is also the first course jointly offered to physicians and podiatrists, who are routinely faced with the deranging effects of postural stress.

Precise reference materials are provided, as well as handouts for patients.

***Learning Objectives*:**

At the end of this session, participants can:

• Provide their community a new procedure with unmatched efficacy in treatment of common maladies and for a good value that patients are willing to pay out of pocket.

Hotels in the area:

Information about hotel accommodations will be sent to you with your registration confirmation. No room blocks have been secured at any one hotel, however the AAO has a list of hotel/motels in the area that are a reasonable distance from Oklahoma State University College of Osteopathic Medicine in Tulsa.

Registration Form

Alleviation of Common, Chronic Pain by Normal Posture, July 14-16, 2000

Full Name _____

First Name for Badge _____

Street Address _____

_____

City _____ State _____ Zip _____

Office phone # _____ Fax #: _____

AOA # _____ College/Yr Graduated

_____

I require a vegetarian meal ❒

	Registration Rate Prior to 6/14/00	After 6/14/00
AAO Member	$1,000	$1,200
Intern/Resident	$750	$950
AAO Non-Member	$1,200	$1,400

AAO accepts Visa or Mastercard

Credit Card # _____

Cardholder's Name _____

Date of Expiration _____

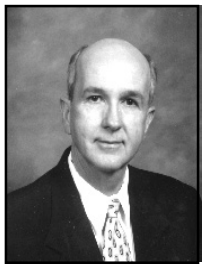
Signature _____

For information, please contact:
American Academy of Osteopathy by:

Phone: (317) 879-1881;
Fax: (317) 879-0563;
E-mail: AAODLF@aol.com; or
Web Page: www.academyofosteopathy.org

Message from the Executive Director

by Stephen J. Noone, CAE



How does one learn *Osteopathy?*

The 2000 Convocation of the American Academy of Osteopathy was a high-energy event — AGAIN! It is difficult for me as a layman to describe in words my observations of the passion for Osteopathy exuded by the 391 AAO members participating last March in Cleveland and the seemingly unquenchable thirst for knowledge and experience on the part of the 351 students who attended. I can tell you it is most gratifying to watch and a singular privilege to serve as the CEO for a staff that facilitates such interaction.

In December 1999, I attended a conference in Indianapolis sponsored by the American Society of Association Executives. After listening to keynote speaker, Laurence Pruzak, I purchased a copy of his book entitled *Working Knowledge: How organizations manage what they know*, published by Harvard Business School Press. While the lion share of his consultant work over the years has been with Fortune 500 companies like IBM, Coca-Cola, and Time-Life, I was struck by the direct applicability of his insights to the "knowledge transfer" of Osteopathy. I ask you to bear with me while I relay several of them here.

Culture trumps technology. The world of medicine in the 21st century will likely see the growing impact of technology on the delivery of health care to the American public. However, technology does not, by itself, change behavior. There are over 3,200 Undergraduate American Academy of Osteopathy (UAAO) members in the 19 chapters around the country. The vast majority have unlimited access to advanced technology and science in their respective colleges of osteopathic medicine. *Access does not equal value, it only equals access*. UAAO members are looking for mentors who will serve as the "keys" to open the door of Osteopathy. How do the basic osteopathic principles apply in the real world of medicine today? In my opinion, the Academy's continuing medical education programs over the years have developed a "culture" which fosters learning of Osteopathy by those who have a true desire to acquire it.

Human beings learn through stories, learn through each other. We are "hard-wired" to learn in that way. Modern medicine seems to be driven by the double-blind research studies which demonstrate statistically that drug "X" or procedure "Y" effectively treats disease "N" with the least amount of side affects. In contrast, the osteopathic literature over the years is replete with "anecdotal" reports and case studies of DOs "finding health" not just curing disease. At AAO CME programs, at any time of the day or night, you will find seasoned veterans sharing stories with younger physicians and students. One of the most popular and well-attended programs is the informal "Evening with the Stars," where a volunteer AAO member gathers students and young physicians around a treatment table to share stories and demonstrate techniques.

Go for connection, not for capture. Give people time and space to encourage knowledge acquisition. Occasionally, I speak with a physician interested in learning Osteopathy who believes that he/she should only have to attend an AAO weekend course, e.g. on counterstrain, to become accomplished. Others may just want to read a book,, or perhaps watch a video tape or CD-ROM. The reality is that no one can "capture" Osteopathy. My observations are that even the AAO legends never cease learning nuances of this unique profession by virtue of their personal interaction with colleagues. The Academy's educational programs enable physician registrants to increase their "connectivity" to some aspect of the profession and then apply it in their own distinctive practice upon their return home. The hands-on nature of AAO programs is priceless. True learning of Osteopathy occurs only over time, perhaps a lifetime.

While the Academy cannot, and in fact does not, claim to be the only source of learning of Osteopathy within the profession, the AAO has created a culture and designed educational opportunities which respond to the demand for such knowledge. I am confident that AAO members will continue to share their stories, both with colleagues and with younger physicians and students. The AAO staff looks forward to assisting in the preservation of this culture throughout the 21st century, by facilitating the "knowledge transfer" of Osteopathy from one member to another.❐

Affiliated organization's CME calendar...

June 15-18
101st Annual Convention & Scientific Seminar
Texas Osteopathic Medical Assn
Corpus Christi, TX
Contact: Mary Waggoner, TOMA
(800) 444-8662

June 17-21
Basic Course
The Cranial Academy
PCOM
Philadelphia, PA
Hours: 40 Category 1A
Contact: The Cranial Academy
(317) 594-0411

June 22-25
Annual Conference
The Cranial Academy
Philadelphia, PA
Contact: The Cranial Academy
(317) 594-0411

August 4-6
Visceral Biodynamics
Kenneth Lossing, DO
San Francisco, CA
Hours: 24 Category 1A
Contact: Kenneth Lossing, DO
(707) 766-8902

August 7-11
The Expanding Osteopathic Concept
Basic Cranial Course
Viola Fryman, DO, FAAO
San Diego, CA
Hours: 40 Category 1A
Contact: OCC
(619) 583-7611

September 20-23
Fourth Annual
Family Medicine Board Review
UMDNJSOM, Dept of FM
Mt. Laurel, NJ
Hours: 31 Category 1A
Contact: UMDNJSOM
(856) 566-6330

TENTH ANNUAL OMT UPDATE

(INTERMEDIATE COURSE)

"APPLICATION OF OSTEOPATHIC CONCEPTS IN CLINICAL MEDICINE

PLUS PREPARATION FOR CERTIFYING BOARDS

IN THE MIDDLE OF THE MAGIC AT

CME HOURS: 4 days; 22 hours; AOA Category 1-A

AUGUST 17-20, 2000

DISNEY'S CONTEMPORARY RESORT

LAKE BUENA VISTA, FL

- **OMT Review - "hands-on experience and troubleshooting"**
- **Integration of OMT in treatment of various cases**
- **Preparation for OMM practical portions of certifying boards**
- **Preparation for AOBNM (American Osteopathic Board Neuromusculoskeletal Medicine) and other certifying boards**
- **Information on CODING for manipulative procedures**
- **Good review with relaxation and family time**

Prior to July 18, 2000		**After July 18, 2000**	
AAO Members DO/MD	$575	AAO Members DO/MD	$675
AAO Non-Members	$675	AAO Non-Members	$775
Residents/Interns	$275	Residents/Interns	$375

* * * * * AAO Accepts MasterCard and VISA * * * * *

PLEASE NOTE: $100.00 will hold your space in this meeting. Full payment is due by July 18, 2000. If you register after July 18, 2000, full payment is to accompany registration form

Register by phone or Mail:

Using your MasterCard or Visa, call Lavoria at the American Academy of Osteopathy Phone: 317/879-1881 OR if you would prefer ask her to mail you an OMT Update flyer giving you complete details about this course as well as hotel information and deadlines.

Dig On!

In early 1994, the faculty of the Section of Osteopathic Manipulative Medicine, OUCOM, communicated with Drs. Paul E. Kimberly and Anne L. Wales regarding the origin and use of the term "cranial rhythmic impulse". In letters which I have on file, Dr. Kimberly indicated that Dr. Sutherland did not use the term in the 1940s, but spent much time on the phenomenon which became so labeled. He further mentioned Dr. Sutherland's emphasis on fluctuation of CSF being representative of the metabolic influence created by a sponge-like effect of being compressed, then allowed to refill (lymph function of other body parts). Dr. Sutherland also implied that the inflow of fluid from the vascular system was made possible by the outflow of CSF on peripheral nerves. The technique for "flushing the system" by springing the occipital plate and holding it for a response was originally called "bulb compression", later "compression of the 4th ventricle". Opening of a joint with one hand and "directing the CSF" via the other hand, across the midline, was referred to as directing the potency of the CSF and the resulting impulse was the result of CSF fluctuation. Over time, the palpatory perception of fluid motion within the skull as well as motion of the skull itself was accompanied by perception of apparently simultaneous rhythmic impulse in other parts of the body, resulting from inherent rhythm of the cranial mechanism, giving rise to the term, "cranial rhythmic impulse". Dr. Wales indicated that she never heard Dr. Sutherland use the term, "cranial rhythmic impulse". She associated the origin of the term with a study done at the Still-Hildreth Sanatarium in Macon, MO. Drs. John and Rachel Woods reported counting the perception of fluctuant waves across the vault for data regarding patient subjects enrolled in the study, and comparing the findings with a control group of students at Kirksville. Dr. Wales also indicated that Dr. Sutherland used observation of the regularity, amplitude, and general behavior of the fluctuation of the CSF in its natural cavity in clinical situations. These attributes were reflected in his presentations of his Cranial Concept in the Science of Osteopathy.

James M. Norton, PhD has urged the "design, conduct, and peer-reviewed publication of clinical studies demonstrating the existence of the Primary Respiratory Mechanism and the efficacy of Osteopathy in the Cranial Field." Dr. Norton, a member of the *AAOJ* Editorial Board, has previously addressed this issue as a challenge to the profession (*The AAO Journal* 1996; 6:15-21). Kenneth E. Nelson, DO, FAAO replies to Dr. Norton's concerns. Perhaps other clinicians and basic scientists may wish to contribute to this discussion.

Anthony G. Chila, DO, FAAO
AAOJ Editor-in-Chief❒

Dear Dr. Chila,

Not long ago, while browsing electronically for new and interesting research papers, I entered the term "craniosacral" in the search engine for Current Contents® (all editions). This relatively simple act turned up three articles[1-3] that should demand the attention of all of those within the Osteopathic profession practicing Osteopathy in the Cranial Field (OCF). These are rigorously designed and analyzed studies, generated by three independent groups and published in peer-reviewed journals of good standing, that call into question the ability to palpate the primary respiratory mechanism (PRM) in a reliable fashion. More importantly, statements appear in the abstracts of these articles (the part most likely to be read by the casual browser) that question the very *existence* of the PRM itself. Examples are:" The results did not support the theories that underlie craniosacral therapy..."[1]; "Further studies are needed to verify whether craniosacral motion exists[2]; and "It is possible that the perception of CSR [craniosacral rhythm] is illusory"[3], Incidently, the conclusions of all three of these studies closely resemble those in a summary of my own research previously published in this journal[4], a "challenge" to which I have received essentially no response from the osteopathic community.

I encourage all of those who utilize this form of manipulative therapy

frequently or exclusively in their practices to design, conduct, and publish in peer-reviewed journals clinical studies demonstrating the existence of the PRM and the efficacy of OCF. These studies must be done with the same experimental rigor demonstrated in the studies cited here, because the burden of proof of clinical efficacy lies squarely with those making the claims, in this case, the practitioners of OCF. In addition, published evidence supporting the existence of the PRM and the efficacy of OCF must be logically consistent, scientifically reasonable, evaluated objectively and rigorously, and able to be replicated by other researchers before it will be acceptable to the general biomedical community. These three recent studies represent, in my opinion, a challenge to which the osteopathic profession must respond and respond soon, before the persistence of scientifically unsubstantiated claims regarding OCF threatens future acceptance of this therapeutic modality and weakens the public image and scientific credibility of the osteopathic profession.

Sincerely,

James M. Norton, PhD
Professor and Chairperson
UNECOM, Biddeford, ME

References

1. Rogers J, Witt P, Gross M, Hacke J, Genova P. Simultaneous palpation of the craniosacral rate at the head and feet: intrarater and interrater reliability and rate comparisons. *Physical Therapy* 1998;78: 1175-1185.
2. Wirth-Patullo V, Hayes K. Interrater reliability of craniosacral rate measurements and their relationships with subjects' and examiners' heart and respiratory rate measurements. *Physical Therapy* 1994;74: 917-920.
3. Hanten W, Dawson D, Iwata M, Seiden M, Whitten F, Zink T. Craniosacral rhythm: reliability and relationships with cardiac and respiratory rates. *Journal of Sports and Orthopedic Physical Therapy* 1998; 27:213-218.
4. Norton J. A challenge to the concept of craniosacral interaction. *The AAO Journal* 1996;6:15-21.❐

A Wake up Call for Osteopathic Physicians.

by Kenneth E. Nelson DO, FAAO

Dr. Norton, rightfully, challenges osteopathic physicians to substantiate, scientifically, positions based, to a great extent, upon clinical empiricism. He points out that recently published articles strongly question the validity of the perception of the cranial rhythmic impulse (CRI), the palpable manifestation of the primary respiratory mechanism (PRM). Further that, because these findings have been published in peer reviewed journals of good standing, they are now part of the body of documented scientific knowledge.

We are in a truly difficult position. The addition of these findings to the body of scientific knowledge lends weight to the position that Osteopathy in the Cranial Field (OCF) is folly. The first (impulsive) response is to find fault in the studies. But, to do so without corroborative data is utter foolishness. To be disproved is one thing, to be perceived as a fool is far worse.

Good science offers proof, not disproof. In their attempts to demonstrate the "craniosacral rhythm," the studies Dr. Norton refers to have proven their null hypotheses. They have proven (if they are not flawed and the researchers possessed adequate skill levels, two questions that the peer review process must be assumed to have addressed) that the methods they employed cannot be relied upon to measure the CRI and that the perception of the CRI differs among examiners. The latter conclusion is particularly troubling for OCF if the CRI is an observable physical finding, like pulse or respiratory rate.

The findings of these studies do not, in themselves, disprove OCF, but they are now part of the body of scientific knowledge. As the body of scientific knowledge about the CRI grows, and if the preponderance of evidence indicates it is invalid, then OCF and its practice, is placed in serious doubt.

The question of the validity of OCF is not new. The willingness of the scientific community to study it and, consequently, the increased publication of unfavorable data is. Scientific conclusions are drawn based upon the preponderance of data. Therefore Dr. Norton admonishes us "…to design, conduct and publish in peer reviewed journals clinical studies demonstrating the existence of the PRM and the efficacy of OCF."

For the osteopathic profession, however, this is easier said than done. For quality research to occur we need skilled investigators, research infrastructure, time commitment, and funding.

Skilled investigators do not just happen. Research is a complex skill, requiring in depth understanding of, and rigorous adherence to, method. Although clinicians possess the knowledge and the skills to perform the subject to be researched, they all too often do not understand how to design and execute a feasible protocol.

Research necessitates the rigid adherence to an agreed upon and rigorous protocol. Clinical medicine, on the contrary, necessitates that the practitioner often modify the intervention to optimize the therapeutic effect upon the individual patient. This valuable clinical skill can be contradictory to the execution of a rigid protocol.

Research takes time. The demands of contemporary clinical practice have many clinicians working ten to twelve hours a day (or more). Even

continued on page 38

Prenatal Care

by O.P. Grow, DO

[**Editor's Note:** Osteopathic Obstetrics *was written by O.P. Grow, DO (American School of Osteopathy, 1915). This monograph appeared in 1933 (The Journal Printing Company, Kirksville, Missouri), following the author's 17 years of obstetrical experience in country practice. It is noted in my reference copy that Dr. Grow delivered 1205 babies without losing a mother. A Foreword by George M. Laughlin, DO, acknowledges this successful record. Chapter II, Prenatal Care, provides an overview of Dr. Grow's philosophy and practice.*]

Foreword

There are two methods of teaching; one is upon the theoretical basis and the other upon the practical. Both methods are necessary, but for the general practitioner, the practical method which shows him how to do things is by far the more useful.

The best training one can receive is in doing over and over again the work which must be done. Carlisle says, "The way to learn to build a stone wall is to build a stone wall," so the way to learn to practice obstetrics is to practice obstetrics. Naturally one must have, before attempting this work, a considerable amount of preliminary training such as is supplied by reading the standard textbooks on obstetrics and by observing deliveries and taking part in the work; but to learn how to do a thing well one must have practice.

In Dr. Grow's monograph upon "Osteopathic Obstetrics" he has given the results of his seventeen years experience in conducting a country practice. His successful record is the best evidence that he knows what he is talking about. His experience includes over seven hundred deliveries under all kinds of unfavorable conditions. He has had the unusual experience not to have lost a mother and the infant mortality has been extremely low. Certainly, this is a record of which one might be proud.

As Dr. Grow has practised near Kirksville and has been a frequent visitor and patron of our hospitals here, we know personally of his work. I think his success has been due largely to the fact that he has used common sense and has not resorted to what I term meddlesome interference. His knowledge of the possible complications of delivery has enabled him to avoid them to a very great degree, and to handle them properly when they do develop.

I believe this volume upon Obstetrics will be of great value to the student and young general practitioner and I endorse it most sincerely. I think every young practitioner, particularly if he locates in a country community, should engage in an obstetrical practice. It is a field for useful service. It makes one, among other things, the family doctor, which, I think after all, is the best field for an osteopathic physician.

George M. Laughlin, DO

Chapter II

Prenatal care, under the supervision of the osteopathic obstetrician, gives the mother an assurance against perils of pregnancy that cannot be given by an exponent of any other system of practice. Patients should be educated to consult the doctor as soon as they suspect pregnancy.

A complete history is taken, including previous pregnancies, abortions, and stillbirths. If the woman is a multipara, questions are asked concerning any marked symptoms that occurred in previous deliveries: time and duration of labor, and difficulty of the labor with or without the use of forceps. If the expectant mother is a primipara, obtain her maternal history.

The physical examination should include a careful examination of heart, lungs, kidneys, and pelvic mensuration. Only three measurements are taken with the patient in the dorsal recumbent position. The parts are washed with sterile liquid soap and water and are sponged with a 1:1500 bichloride solution. With a sterile gloved hand, insert the index and second finger into the vagina. With the tip of the second finger try to touch the promontory of the sacrum; using the index finger of the other hand, make a point on the index finger of the vaginal hand at the inferior margin of the pubes. This diameter is the conjugata diagonals and should measure normally twelve and one-half centimeters. Measure the distance from the tip of the second finger to

the point on the index finger. Deduct one and one-half to two centimeters and the result is the length of the conjugata vera, which is the dimension of the pelvic inlet. One may use a pelvimeter to measure the distance between the spines of the ischii and the distance between the tuberosities of the ischii. If the distance (11 cm.) between the tuberosities admits the closed fist of the examiner, one may rest assured that the outlet is of sufficient size. The pubic arch may be narrow in construction and offer resistance as the head passes over the perineum. If, on palpating the arch, it will comfortably admit three fingers, the chances are that there will be no resistance offered to the oncoming head. If the physician desires more extensive measurements, he can find them in detail in any standard obstetrical text.

Prenatal Advice

Pregnancy and labor should be normal processes in healthy women, but due to the present mode of living, disease processes may arise insidiously, and if these conditions are not properly cared for, they will lead to distressing complications.

Advice should be given as to exercise, diet, bowels, sleep, clothing, baths, care of nipples and breasts, vaginal discharges, and osteopathic treatment.

Exercise: The patient continues her normal activities, avoiding only the extremely strenuous tasks and avoiding the point of fatigue. Walking in the fresh air and sunlight is beneficial and should be encouraged.

Diet: If the proper diet is prescribed, the possibility of dental pathology will be greatly diminished. However, should a gingivitis develop, an antiseptic may be employed. Any necessary dental work may be taken care of without fear of complications. The diet should consist largely of vegetables, fruits, and milk. Only moderate amounts of meat, carbohydrates, tea and coffee should be allowed. Fried foods, highly seasoned foods, rich foods, and pastries should be avoided. The diet should be simple and meals eaten at regular times, especially emphasizing the fact that the patient should not eat for two individuals.

Bowels: Digestive disturbances are common in pregnancy and frequently lead to constipation. Therefore, at least one good bowel movement is essential each day. Enemas are greatly preferable to cathartics.

Sleep: Eight to nine hours of undisturbed sleep are necessary. An afternoon repose for an hour or more is very beneficial. The patient should sleep in a well-ventilated room.

Clothing: Tight clothing should be avoided and the patient's attire should hang from the shoulders. If support is needed for the abdomen, the physician should be consulted as to the type. This is very often needed in the later months.

Baths: Tepid sponge baths may be taken freely. Avoid either hot or cold tub baths, or swimming, for there is danger of exciting uterine contractions. Infections may enter through the vagina, and, since ordinary bath water is not free from bacteria, tub baths should be avoided, especially during the last trimester. Baths aid the kidneys in excretion and eliminate body odors; hence sponge baths must be used freely. Douches unless in diseased conditions, are never used.

Care of nipples and breasts: The nipples should be examined on the first visit. Should they be congenitally inverted, the practice of manipulation and drawing out should be used daily by the patient to overcome this deformity. During the later weeks of pregnancy, the breasts may become swollen and painful. As application of a solution (saturated boric acid water, witch hazel, and alcohol [70 percent], one-third of each) is very beneficial. The doctor, should raise the ribs, free the clavicle, and correct the upper dorsals and associated ribs by osteopathic treatment.

Vaginal discharge: Any abnormal discharges should be reported at once to the physician and should be dealt with according to the etiology.

Osteopathic treatment: The treatment is of a relaxing type; however, an attempt must be made to correct all lesions using only very moderate force in the leverages. The use of stool technic is preferable. Particular attention is devoted to any pelvic abnormality whether bony, ligamentous, or soft tissue. The physician should not hesitate to correct these pelvic lesions. If proper technic is used, there need be no fear of causing an abortion. The pelvic work is more efficiently accomplished with the patient on the table in the dorsal position. While the patient is on the table, have her turn on her side and proceed with the pelvic normalizer treatment.

Treatment should be given at least once a week. If any distressing symptoms occur, the patient is instructed to report more frequently.

The blood pressure and urine should be checked at regular intervals.

Further instructions are also given to the patient regarding the preparation of vaginal pads; 15 or 20 of these pads should be prepared and placed in a cloth sack which should be tied, and baked an hour each day for three consecutive days at bread baking temperature. These pads should be 18 to 20 inches long, 3 to 4 inches wide, and of various thicknesses. Old white cloths of any type are desirable; old shirts, sheets, underclothing, etc. The pads should be rolled separately, similar to a roll of cotton, with the loose ends remaining unfastened, since fastening would render them inconvenient for ready use.

If the above instructions have been carried out faithfully, little remains to be accomplished before the doctor is called. And the question is frequently asked, "When shall the doctor be called?" The answer is simple, "When the pains occur at regular intervals, timed by the clock, it is time to call the doctor."❐

Visceral Biodynamics

August 4-6, 2000
San Francisco, CA

Program Chairman: Kenneth Lossing, DO

Christina Williame, DO and George Finet, DO, of Belgium, have been doing research on the movements of the abdominal viscera with respiration, for 15 years. The hollow organs were studied with barium and fluoroscopy; the solid organs were studied with echo. Non symptomatic and symptomatic patients were compared to find if there was a reproducible normal axis of movement, it's amplitude, and how dysfunction affected it. These studies are the basis for their unique palpatory diagnosis and manipulative treatments.

I attended the first course they ever taught in English, last spring in Norway. I was so impressed with the amount I was able to learn, and apply in my practice, that I have invited them to come to San Francisco in August to teach their course for the first time in the USA. This is a "hands on" practical course, suitable as a first visceral course, or an advanced course.

Please come and join us.

Location:

Warick Regis Hotel, San Francisco (415) 928-7900.
$145/night, (Lossing group). 8:30 -5 each day, lunch not included.

Fee:

Practicing physicians $595, students, interns, and residents $495. Full payment required for registration. Course limit of 30 participants

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Kenneth Lossing, DO
1625 Spring Hill Road
Petaluma, CA 94952
(707) 766-8902 fax (707) 762-5982

Student's Corner

The compensatory pattern, as seen in art and osteopathy

by Adam Quinn, OMS-III, MFA,*
Des Moines University – Osteopathic Medical Center, Des Moines IA

The osteopathic concept of the common compensatory pattern (CCP) originated during the 1970s with J. Gordon Zink, DO and Bernard A. TePoorten, DO, professors of osteopathic manipulative medicine at what is now Des Moines University (DMU). Drs. Zink and TePoorten collaborated on the diagnostic findings of many of their patients, allowing them to observe a common pattern. Results from these studies culminated in a theory that would later become a unifying concept in OMM labs and lectures at DMU. While their theory is unique in its relevance to osteopathy, one of the first recorded observations of a compensatory postural pattern can be seen in Greek sculpture as early as 480 BC. This would later be described by the Italian word, contrapposto, meaning counterpoise, or as one art historian describes it, a "balanced non-symmetry of the relaxed natural stance."[1]

The term, *contrapposto*, refers to the natural pose of a figure where "the parts of the body are placed asymmetrically in opposition to each other around a central axis."[2] The statue, *Cidian Aphrodite*, from 340-330 B.C. exemplifies the use of contrapposto in Greek sculpture (figure 1). Note the similarity in her pose to that of the common osteopathic hip-drop test (figure 3). Of this Greek discovery, one author writes, "contrapposto brings about all kinds of subtle curvatures: the bending of the free knee results in a slight swiveling of the pelvis, a compensating curvature of the spine, and an adjusting tilt of the shoulders."[3] This description should sound familiar to the student of osteopathy who is taught to study the natural curvature of the axial skeleton as it relates to diagnosis and treatment of somatic dysfunction.

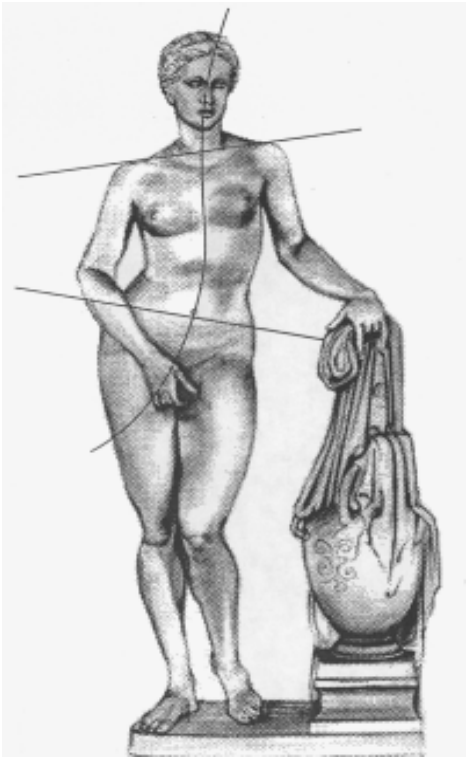

Figure 1: *In this rendering of the statue, Cidian Aphrodite, from 340-330 B.C., contrapposto is demonstrated by the S curve of the axial skeleton in relation to the tilt of the hips and shoulders in opposite directions.*

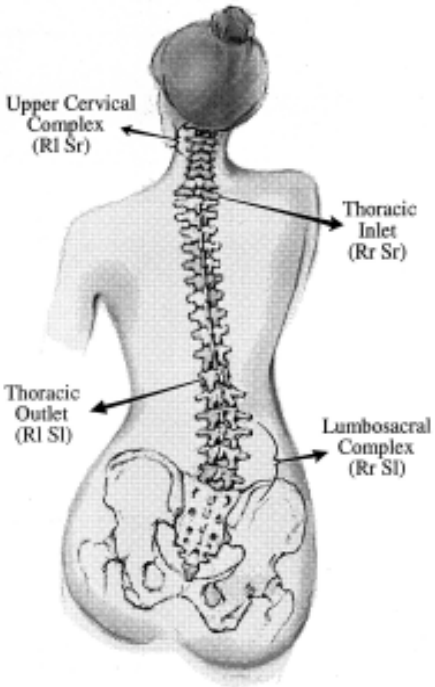

Figure 3: *This illustration of the osteopathic hip-drop test demonstrates the curves of the common compensatory pattern with its four major junctional areas.*

Grecian ideals influenced what was to become the next major period of advancement in the study of human form and function, the Italian Renaissance. Early work from this period is best represented by the Italian master, Leonardo Da Vinci (1452-1519), who is known for, among other things, structurally accurate studies of human anatomy. "Although Leonardo may not have been the first

*Medical Illustrations by Adam Quinn, OMS-III, MFA

scientist of the modern world, he certainly originated the method of scientific illustration."[4] He set the stage for anatomists such as Andreas Vesalius (1514-1564), "a Flemish physician and professor of anatomy of Padua, where in 1543 he produced his *De humani corporis fabrica libri septem* (Seven Books on the Structure of the Human Body) and founded the modern science of anatomy."[5] The relevance of anatomic investigation to the philosophical ideology of the Italian Renaissance is explained nicely by one historian who writes:

"With proportion, (human anatomy) lay at the root of Renaissance aesthetics, for if man was the measure of all things, physically perfect man was surely the measure of all beauty, and his proportions must in some way be reducible to mathematical terms and correspond with those abstract perfections, the square, the circle, and the golden section."[6]

Western medicine grew out of this philosophy and the anatomical sciences provided the foundation for its growth. Through this brief historical perspective, we can see how early anatomical investigation influenced A. T. Still to form his theories on osteopathy. Just as early Western investigators sought to define principles of human biomechanics through careful measurement of human proportion. Still emphasized the importance of the "hands on" assessment of structural constitution as his means for diagnosing and treating medical conditions. His osteopathic principles pay special attention to evaluating musculoskeletal anatomy when assessing a patient's health status.

Following in Still's footsteps, Zink and TePoorten continued to expand on the deeply rooted Western concept of "form follows function". By drawing again on the comparison to Grecian contrapposto, the compensatory pattern can be described as a

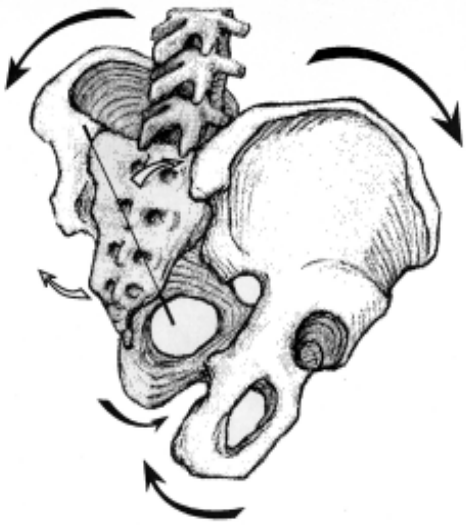

Figure 2: *The pelvic girdle is shown here with opposing rotational forces in the innominates that set up the uneven base upon which the lumbar spine responds to in its compensatory fashion.*

form of "balanced non-symmetry" where components of the axial skeleton are said to rotate and sidebend in directions opposite of one another around a central axis. This can be illustrated by rotational movement found within the pelvic girdle (figure 2). As the right innominate rotates to the anterior, inferior position, pulling the right sacral sulcus with it, the left innominate rotates to the posterior, superior position. This twisting in opposite directions creates the uneven base upon which the lumbar spine responds to in its compensatory manor, setting up a pattern of balance and counterbalance that extends all the way up the spine.

The common compensatory pattern is defined by ten diagnostic findings between the pubic symphysis and the upper cervical complex on palpatory examination (table 1). More importantly, there are four junctional areas that have the greatest liability for injury; the upper cervical complex, thoracic inlet, thoracic outlet, and lumbosacral complex (figure 3).[7] Dr. Zink "found that 80 percent of 'well people' had a particular compensatory pattern which showed fascial preference to rotate to the left at the occipitoatlantal area, to the right at the cervicothoracic area, to the left at the thoracolumbar area and to the right at the lumbosacral area (i.e. L,R,L,R)."[8] Just as the majority of "well" people exhibit the common compensatory pattern, the remaining group of "well" people are thought to have an alternating pattern in the opposite direction, referred to as the uncommon compensatory pattern. Individuals not fitting into either group are said to have uncompensated patterns due to trauma, making them slower to recover from illness and more conducive to congestion.[9]

The significance of these four junctional areas is associated with their attached diaphragms: tentorium cerebelli, Sibson's Fascia, thoracolumbar diaphragm and pelvic diaphragm, from cranial to caudal. These fascial planes serve as junctions between the cranium, thorax, and pelvis respectively. Opposing rotational forces at each junctional area are thought to create tension in the attached diaphragm, thereby increasing

Table 1. *Ten Principles of the Common Compensatory Pattern*

1.	Innominates	Anterior, Inferior Right (AIR)
2.	Sacrum	Left on Left Sacral Torsion
3.	Lumbosacral Complex	Rr Sl
4.	Thoracolumbar Junction	Rl Sl
5.	Tenth Rib	Posterior on the Left
6.	Fifth Rib	Locked up on the Left
7.	Third Thoracic Vertebrae	Rr Sr
8.	First Rib	Sr
9.	First Thoracic Vertebrae	Rr Sr
10.	Upper Cervical Complex	Rl Sr

resistance to the circulatory flow that traverses it. "Low pressure fluids (venous and lymphatic) are returned to the heart to complete the cycle of circulation mainly by pressure differential of the diaphragms."[10] Dr. TePoorten claimed that, "the worst enemy of physiologic function is the torsioning of fascial planes. The common compensatory pattern is a series of myofascial torsions that are compatible with physiologic function until the prime organ system, the musculoskeletal system, is stressed."[11]

Dr. David R. Boesler, current chairman of OMM at Des Moines University maintains that "by treating these 4 transitional areas, 80-90 percent of patients will show improvement in their condition," underscoring the relevance of this concept to the use of OMT in a fast-paced medical practice. He states that treating the compensatory pattern will 1) relieve myofascial torsions, 2) affect the autonomic nervous system, 3) improve diaphragmatic function, and 4) improve venous and lymphatic flow. Finally, one of the most important aspects of CCP is that it provides a blueprint to follow when treating the axial skeleton. This really makes it a useful tool for learning OMT and a valuable concept for every student of osteopathy.

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Some wills won't. For example, if your state requires the signatures of two disinterested witnesses and a beneficiary of your will signs as a witness, your will may not work.

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Osteopathic manipulative treatment in prenatal care:

Evidence supporting improved outcomes and health policy implications

by Hollis H. King, DO, PhD, FAAO, College of Osteopathic Medicine
of the Pacific Western University of Health Sciences, Pomona, CA
(Submitted in partial fulfillment of requirements for fellowship in the AAO, which was conferred in 1999.)

Abstract

Since the inception of the osteopathic profession, osteopathic manipulative treatment (OMT) has been applied during pregnancy. The subjective observation by a number of osteopathic physicians has been that women treated with OMT during pregnancy reported a low rate of complications of labor and delivery. The reviewed literature revealed only a few objective or subjective reports on the possible relationship between OMT during pregnancy and pregnancy outcomes.

In the current comparative study, the medical records of 155 women who received OMT during pregnancy were reviewed. The records were examined for the occurrence of meconium-stained amniotic fluid (MSAF), pre-term delivery (PTD), umbilical cord prolapse (UCP), use of forceps, and cesarean section delivery.

Literature review and meta-analysis derived rates of occurrence for the outcomes under consideration. The results for MSAF were a population rate of 14.6% and an OMT rate of 7.1%. For PTD, population rate of 10.0% and an OMT rate of 3.2%. For UCP the population rate was 1.5% and the OMT rate 0%. For forceps, the population rate was 19.5% and the OMT rate 6.4%. C-section population rate was 21.6% and the OMT rate 16. 1%.

Findings suggest OMT reduced the complications of labor and delivery considered in this study. Health policy implications are discussed and a prospective study is proposed.

Introduction

The purpose of the present study is to assess the potential of the application of osteopathic manipulative treatment (OMT) during pregnancy for the reduction of morbidity and expenditure of money in prenatal and postnatal care.

The basis for the present study is the fact that since the inception of the osteopathic profession, OMT has been used during pregnancy. Among the early osteopathic practitioners, OMT was found to shorten labor,[1] reduce maternal death and stillbirth,[2,3] improve post partum recovery,[4] reduce the need for forceps,[5] and reduce nausea and vomiting of pregnancy.[6] More recent writers on OMT during pregnancy discuss the benefits for reducing toxemia,[7] the induction of uterine contractions,[8] and reduction of lumbar myalgia during labor.[9]

Reports of the author's mentors, Marion Coy, DO (past AOA President), John Harakal, DO, FAAO (former Chair of Department of Osteopathic Manipulative Medicine at the Texas College of Osteopathic Medicine), and Viola M. Frymann, DO, FAAO (former Chair of Department of Osteopathic Manipulative Medicine at the College of Osteopathic Medicine of the Pacific, and Founder of the Osteopathic Center for Children in San Diego, CA), suggested that the complications of labor and delivery appeared to be reduced in women who receive OMT during pregnancy. In fact, Richard Eby, DO reported a dearth of complicated labor and deliveries while he served as Chief of Obstetrics at Los Angeles County Hospital-Unit 2 (a large osteopathic hospital which is now the L.A. County USC, Medical Center since 1963). Dr. Eby said he had to send the residents training on his service to the Medical College Hospital to see cases exhibiting complications of labor and delivery, even though his service did over 3000 deliveries a year. Dr. Eby attributed the very high rate of uncomplicated deliveries to the routine OMT the pregnant women received, even if it was only mild soft tissue administered during an examination. The author's own anecdotal observation was that the women referred for OMT during pregnancy reported very few complications during labor and delivery.

The limited reports in the literature and anecdotal observations of a few osteopathic physicians showed the need for fuller experimental consideration of the possible benefits of OMT during pregnancy. Modern allopathic literature is sparse on the issue of prenatal structural treatment or consideration of the musculoskeletal system as a factor labor and delivery outcomes and the mother's experience during pregnancy. The studies that do exist focus on low-back pain during pregnancy with discussions on etiology,[10] and recommended exercises to reduce the low-back pain.[11,12]

Occurrence of the outcomes of labor and delivery considered in the present study

Based on structure-function relationships which offer an explanation of why some labor and delivery outcomes may be affected by OMT, the following were selected for consideration: 1. Meconium-stained amniotic fluid (MSAF), 2. Pre-term delivery (PTD, 3. Umbilical cord prolapse (UCP), 4. Use of forceps, 5. Cesarean Section Delivery (C-Sect).

A review of the available literature on the occurrence rates of these outcomes was made and a procedure to establish a consensus occurrence rate using a meta-analysis fixed effects average, after the manner of Dickersin and Berlin[13] and Haskelkorn, et al[14] was carried out. The use of a fixed effects model assumes a known population (in this case pregnant women) of studies in which each study possibly has a different mean and the focus is on a function of those means (usually their average). Determination of a mean percentage rate allowed a comparison of the means for the occurrence of the outcome data in the present study to be made with data published in the literature database.

Meconium-stained amniotic fluid

Dysart et al[15] found an occurrence rate of 24.0% for MSAF in 39-40 week gestations. Houlihan and Knuppel[16] found an occurrence average of 14.5%. Wiswell et al[17] with an N = 176,000 found a rate of 12.15%. Steer et al[18] reported a rate of 15.3%. In gestations of 39-41 weeks Usher et al[19] found an occurrence rate of 15.3%. Zlatnick[20] reported a national rate of 15.0%. Ostrea and Naqui's[21] data showed a rate of 7.0%. Utilizing the fixed-effects meta-analysis averaging for these studies the average was 14.6%, with a range of 7.0% to 24.0%.

Pre-term Delivery

According to the National Center for Health Statistics,[22] United States data indicate that 10.6% of all pregnancies end prior to term (less than 37 weeks gestation). Parsons and Spellacy[23] reported pre-term delivery to occur 10.0% of the time. Zhang and Savitz[24] reported pre-term delivery occurred 8.0% and 16.7% for whites and blacks, respectively Adams, et al[25] reported 10.5% and 13.5% for whites and blacks in the US Army. Collins et al[26] found rates of 7.0% and 14.0% for whites and blacks, respectively. Utilizing all available data the best estimate (assuming whites were 85% and blacks 15% of the population) for a national average was 10.0%, and a range of 7.0% to 16.7%.

Umbilical Cord Prolapse

Critchlow et al[27] found umbilical cord prolapse rate ranges from 1.7% for breech delivery to 11.7% in a second born twin, with rates in between for premature infants 2.9%, and 4.8% for low birth weight infants. Phelan[28] found a rate of 0.5% for vertex deliveries, twins 2.0%, breech 4.0%, and transverse lie 10.0%. Garite and Spellacy[29] reported an overall rate of 1.5% for umbilical cord prolapse. Cruikshan[30] reported a rate of 0.6%. There was not sufficient data to calculate a fixed-effects average because of lack of statistics on the occurrence of the various conditions related to cord prolapse such as lie, presentation, and multiple birth. For data comparison, given the available statistics, a consensus average of 1.5% was determined with a range of 0.5% to 11.7%.

Use of Forceps

Bofil et al[31] reported a 15.0% for use of forceps in circumstances of mid-pelvic arrest and a 26.0% in deep transverse arrest. Beischer et al[32] found an overall use of forceps rate of 23.1%. In the cases reviewed by Sokol et al[33] there was a 14.0% use of forceps. Turcot et al[34] found the rate for use of forceps to be 21.0%. The fixed-effects meta-analysis average for these rates is 19.5% with a range of 14.0% to 26.0%.

Cesarean Section Delivery

Sokol et al[33] and Turcot et al[34] also found the cesarean section delivery rate to be 25.0% and 21.0, respectively. Moore[35] reported a cesarean section delivery rate of 24.0%.

Albers et al[36] in their study found an overall rate of 18.6%, with a range of 11.6% to 28.3% depending on the age of the mother. Frigoletto et al[37] reported the rate to be 19.5%. Based on these data the fixed effects average was 21.6% with a range of 11.6% to 28.3% for the overall cesarean section rate.

Osteopathic manipulative treatment and musculoskeletal considerations in gestation, labor and delivery

Besides the clinical experience and anecdotal reports of osteopathic physicians who utilized OMT during pregnancy, anatomic and physiologic mechanisms suggest a structure-function relationship which may give deeper understanding of the possible

efficacy of OMT with the pregnant patient.

W. Kuchera[38] delineated the distinctive osteopathic approach as applied to the care of the pregnant patient. "1. There are mechanical, physiological, and biological stresses inherent even in the patient who is destined to have a normal pregnancy. 2. The body has self-regulatory mechanisms which will provide optimal compensation for the stresses of pregnancy if they are free to work efficiently. 3. Distinctive osteopathic care is based upon the belief and clinical observations that structure and function are reciprocally interrelated." Dr. Kuchera[38] further states, "Manipulative treatment normalizes the somatic dysfunctions which produce mechanical stresses. It also improves the efficiency of the mechanical and physiological components of the patient's compensatory and homeostatic processes. The energy that is subsequently saved through the patient's improved body efficiency and removal of somatic dysfunctions will be available for the growth of her fetus and to improve her physical and mental life."

W. Kuchera[38] described the gravitational forces upon the body as gestation progresses and the effects upon the musculoskeletal system. Increased lumbar lordosis, results in stress upon the lumbosacral junction, the sacral iliac joints and the thoracolumbar junction. Vascular and nerve impingement and obstruction are the result, bringing about pain and impaired physiologic function in these areas. This disruption of nervous system and vascular flow, as well as the impact on the more subtle effects of lymphatic flow impairment, increases the tendency for congestion during the latter phases of pregnancy. A most serious consequence of the congestion Kuchera[38] described is that the disrupted lymphatic and vascular flow may affect the amount and timing of the normal circulation of various hormones essential to a normal pregnancy such as estrogen, progesterone, and relaxin.

Besides the possible uncoordinated hormonal flow, the alteration of the normal space relationships in the gravid uterus by inordinately mal-aligned lumbar, sacral, and innominate structures certainly put deformational forces on the fetus through the wall of the uterus. Such forces may have deleterious effects on the growth of fetal structures. It is possible to see that the uterus and fetus which do not fit well in the pelvis as a factor leading to pre-term birth and meconium-stained amniotic fluid. Such pelvic space deviations from nature's apparently intended normal relationships may also cause position distortions such as breech and transverse lie which are leading causes of cesarean section deliveries and the use of forceps.

Phelan[28] pointed out another structure-function relationship offering an explanation of why OMT may be of benefit. The incomplete filling of the maternal pelvis with the fetal head at the time of rupture of the membranes is the common denominator for cases of umbilical cord prolapse. In like manner, a non-engaged fetal head with incomplete filling of the maternal pelvis also may contribute to the need for the use of forceps.

In the orthopedic and family practice literature some of these same concerns have been addressed. Hainlinet[10] and Diakow et al[39] discuss low-back pain in pregnancy as a very common and disruptive occurrence having deleterious effects upon the mother's health. Daly et al[40] recognized the benefit of treatment directed to the low-back pain in pregnant women including manual means to affect the musculoskeletal system.

Thus, there appears to be a basis for the mechanisms of gestation, labor, and delivery being significantly affected by anatomic, structural factors which, in turn, are demonstrably impacted by OMT.

Methods

The present study utilized the examination of medical records of women who had been treated with OMT during pregnancy. The medical record review tabulated any incidence of: 1. Meconium-stained amniotic fluid; 2. Pre-term delivery (less than 37 weeks gestation); 3. Umbilical cord prolapse; 4. Use of forceps; and 5. Cesarean section delivery.

The study design compared the five specified outcomes of labor and delivery in women treated osteopathically during pregnancy with national data, described above, for these outcomes. An attempt was made to obtain retrospective data from women who had not received OMT during pregnancy. Only one of the centers providing data had a sample of subjects not receiving OMT sufficient for statistical analysis. This data is presented and allowed a case control study design and statistical analysis with X^2.

The charts reviewed in this study came from four different centers in the USA.

Eastern Maine Medical Center, Bangor, Maine: The medical records of 21 women who received OMT during pregnancy were reviewed. These women were part of a study on low-back pain during pregnancy conducted by Kenneth Johnson, DO. The author reviewed these medical records after the appropriate permissions were obtained. **Northeast Regional Medical Center, Kirksville, Missouri:** Through the assistance of Michael Lockwood, DO, the medical records of 44 women who received OMT during pregnancy were reviewed. These women were patients of the doctors on the staff of the Department of Osteopathic Manipulative Medicine (OMM) at the Kirksville College of Osteopathic Medicine and had given permission for their records to be used for research purposes. The reviews were

carried out by undergraduate fellows in the OMM Department. **Ravenswood Hospital, Chicago, Illinois:** Melicien A. Tettambel, DO, FAAO reviewed the medical records of 50 women from her practice who received OMT during pregnancy. Dr. Tettambel did all of the OMT and delivered all of the babies. Dr. Tettambel also picked at random 50 deliveries she did on women who received no OMT. These women were comparable to the group receiving OMT because they were from the same obstetrical and hospital practice and were attended by colleagues who did not do OMT. They, too, were delivered by Dr. Tettambel while she was covering for the attending physician. Permission for use of medical record data for research purposes is routine in Dr. Tettambel's practice. **San Diego, California:** The medical records of 40 patients treated with OMT during pregnancy by Hollis King, DO were reviewed. These women were delivered in various hospitals in the San Diego area. Permissions were obtained from the women and the records reviewed by Dr. King or health care professional in the obstetrician's office.

Total number of records reviewed for women receiving prenatal OMT was 155.

Results

Table 1 presents the results of the medical records reviewed for each center.

Figure 1 shows the percentage of meconium-stained amniotic fluid in the present study compared with population data.

Figure 3 shows the percentage of umbilical cord prolapse in the present study compared with population data.

Figure 4 shows the percentage of use of forceps in the present study compared with population data.

Figure 5 shows the percentage of cesarean section deliveries in the present study compared with popu-

		MSAF	PTD	UCP	FORCEPS	C-SECT
Bangor	N=21	3 (14.3)	0	0	2 (9.5)	3 (14.3)
Chicago	N=50	2 (4.0)	1 (2.0)	0	0	8 (16.0)
Kirksville	N=44	4 (9.1)	3 (6.8)	0	5 (11.4)	5 (11.4)
San Diego	N=40	2 (5.0)	1 (2.5)	0	3 (7.5)	9 (22.5)
Total	N=155	11 (7.1)	5 (3.2)	0	10 (6.4)	25 (16.1)

Table 1: Number of occurrences and percentages by center and total for meconium-stained amniotic fluid (MSAF), pre-term delivery (PTD), umbilical cord prolapse (UCP), use of forceps, and cesarean section delivery for women receiving prenatal OMT.

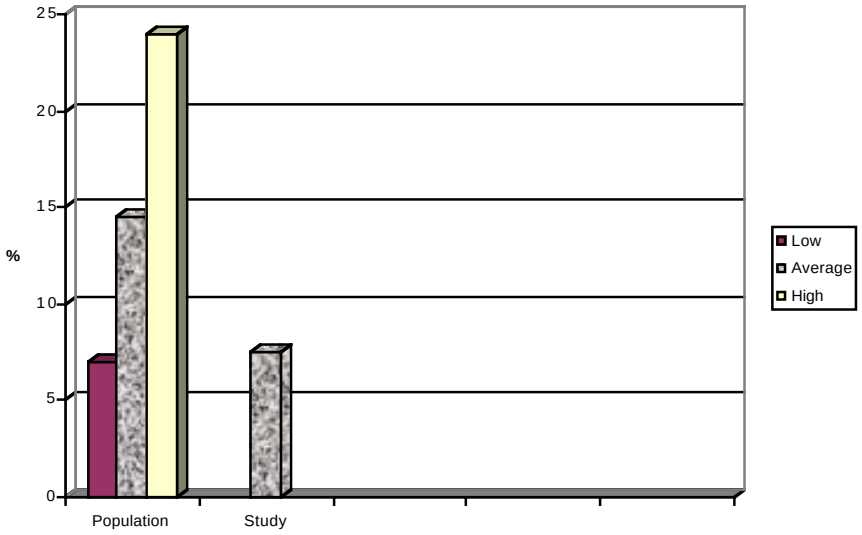

Figure 1. Meconium-stained amniotic fluid: Population occurrence average and range compared with occurrence rate in the present study.

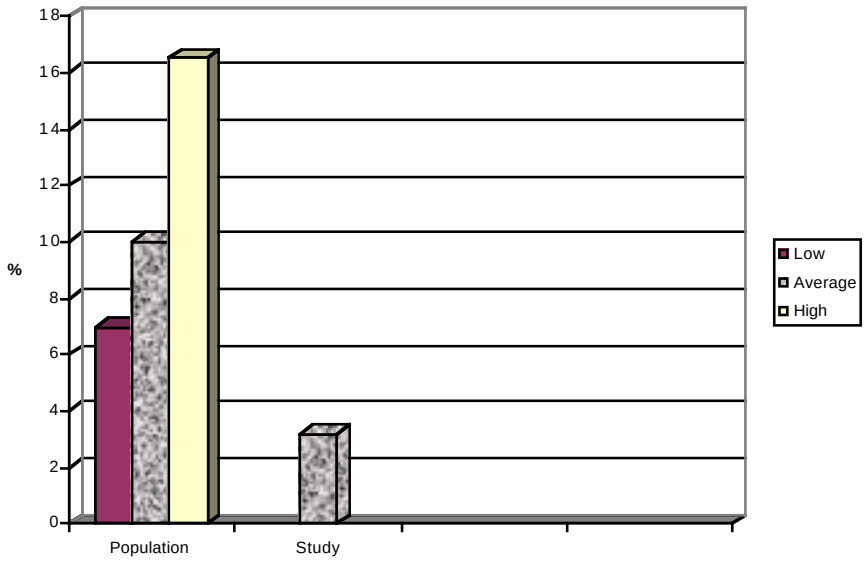

Figure 2. Pre-term delivery: Population occurrence average and range compared with occurrence rate in the present study.

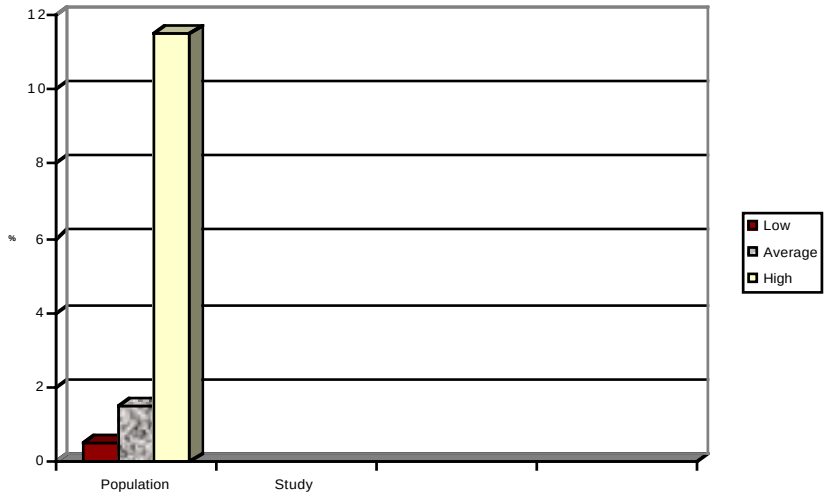

Figure 3. Umbilical cord prolapse: Population occurrence average and range compared with occurrence rate in the present study.

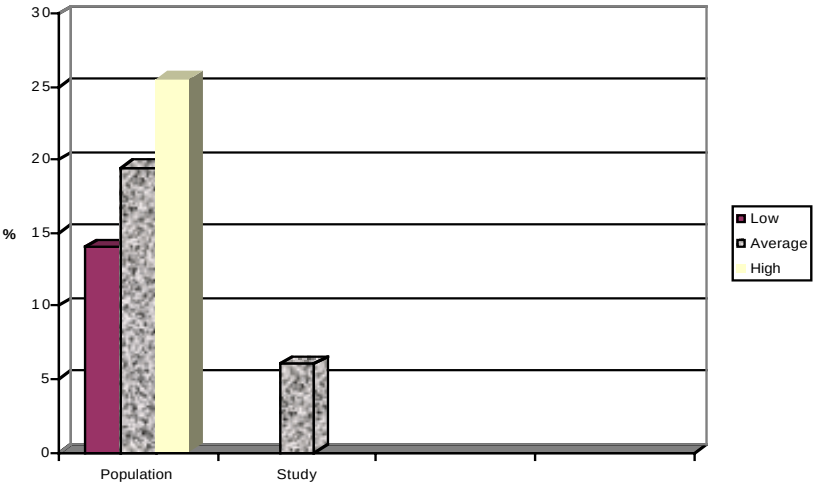

Figure 4. Use of forceps: Population occurrence average and range compared with occurrence rate in the present study.

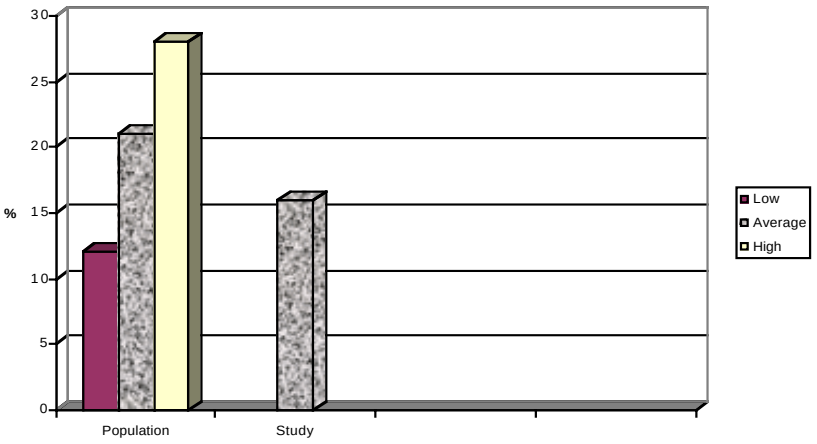

Figure 5. Cesarean section delivery: Population occurrence average and range compared with occurrence rate in the present study.

lation data.

Table 2. presents the comparison totals for each outcome studied in the Chicago cohort in which there are 50 women who received OMT and 50 women who did not receive OMT during pregnancy.

There were not sufficient numbers in several of the cells for Chi-Square analyses to be used on the data in Table 2, therefore Fisher's Exact Test was applied. For meconium-stained amniotic fluid P = 0.012218, which is significant beyond the .05 level. For pre-term delivery P = 0.11175, which did not reach statistical significance. No statistical analysis could be applied to the data on umbilical cord prolapse because of no occurrence of this event in the present study's data. For use of forceps P = 1, not significant. For cesarean section delivery P = 0.356661, not significant.

The data were also analyzed using the Differences of Proportions Test, which gives a 2-tailed test of the probability that the proportions equal. For meconium-stained amniotic fluid P =0.004, significant at the 0.01 Ievel. For pre-term delivery P = 0.034, significant at the 0.05 level. For use of forceps P = 0.1586, not significant. For cesarean section delivery P = 0.215, not significant. The raw data summary for all results are presented in the Appendix.

Table 3 presents the average age, average number of times OMT received by the women, percentage of male to female deliveries, and percentage of primagravidas for each center.

Discussion

The comparison of data collected from the four centers show percentage rates of occurrence below the population averages, and in some cases below the lowest range of occurrence. For the five labor and delivery outcomes studied, women who received OMT during pregnancy had

{

	MSAF	PTD	UCP	FORCEPS	C-SECT
OMT Received	3 (6%)	1 (2%)	0	0	8 (16%)
No OMT Received	13 (26%)	6 (12%)	0	1 (2%)	4 (8%)

Table 2: Number and percentage of occurrence of each of the five outcomes studied in a group of women who received OMT compared with a group of women who did not receive OMT, comparable based on similar prenatal care except for receipt of OMT.

	AGE	#OMT	M/F	Primagravida
Bangor	24.3	no data	57/43	no data
Chicago	28.2	2.9	44/56	20.0
Kirksville	26.6	4.3	48/52	40.1
San Diego	33.2	4.9	70/30	42.5
Average	28.5	4.0	54/46	33.6

Table 3. For each center the average age, number times received OMT, the male to female child percentage, and the percentage of primagravida women.

a lower than population average occurrence of the particular outcome in each of the centers except one, the San Diego group for cesarean section delivery. Given the nature of the records review data collected and the inherent assumptions involved in determining the population averages, no statistical analyses other than comparisons were possible utilizing the averages from the total sample of data collected. The comparisons presented are suggestive of a positive effect for the application of OMT in prenatal care.

The 7.1% study finding of meconium-stained amniotic fluid is only half the national average and at the bottom end of the range. This appeared to be a strong comparison favoring OMT as a benefit for women in reducing the morbidity associated with meconium production during gestation. The variability between centers found only the Bangor cohort to have an average even close to the national average.

The results for pre-term delivery were dramatic in that the 3.2% found in the present study was well below the low end of the range at 7.0% and the national average of 10.0%. Even the 6.8% pre-term delivery rate for the Kirksville cohort was below the national average.

Based on the national projected rate of 1.5% for umbilical cord prolapse and the N = l55, it was expected that 2.3 incidents of this outcome would occur. There were no cases of umbilical cord prolapse found in the cases of women who received OMT in the present study. While this finding is consistent with the view that OMT may benefit women who would otherwise experience umbilical cord prolapse during delivery, a larger number of subjects would make the case stronger.

The use of forceps was also a dramatic finding. The study finding of a 6.4% rate was well below the national average of 19.5%, and even below the lowest rate reported in the literature of 14.0%. For all 4 centers the use of forceps was fairly consistent, with only Kirksville at 11.4% coming even close to the lowest end of the range. The 0% in Dr. Tettambel's Chicago cohort is significant, because she does use forceps. In data, she reported on a group of women who were not treated with OMT, that Dr. Tettambel delivered, the use of forceps occurred.

The 16.1% cesarean section delivery rate found in women who received OMT during pregnancy was below the national average of 21.6%, but within the range of 11.6% to 28.3%. The data of the present study may be affected by the San Diego cohort which had an average age of 33.2 years. Albers[36] reported that the cesarean section rate goes up as the age of the mother increased, with a rate of 28.3% for women over 30 years of age. The San Diego cohort had a cesarean section rate of 22.5%, above the national average. However, when the other three centers are considered, the cesarean section rates for those centers were well below the national average.

It had been hoped that data on labor and delivery outcomes for women not receiving OMT in prenatal care for each of the centers could be obtained, but this was not possible due to staff time and financial considerations. Only the Chicago cohort had a case control design of comparable women not receiving OMT in prenatal care. Table 2 shows the results. Fisher's Exact Test showed only the data for meconium-stained amniotic fluid to be statistically significant at the 0.05 level. When the Differences of Proportions Test was applied, the data for both meconium-stained amniotic fluid and pre-term delivery were beyond the 0.05 level. With the exception of the cesarean section delivery data in the women who did not receive prenatal OMT, the rest of the

data, both comparison and case control cohort were in the direction predicted if improved outcomes in those who received prenatal OMT was expected.

The results for meconium-stained amniotic fluid and pre-term delivery, followed by forceps delivery appeared to emerge as the more significant and offered the best support for the benefits of prenatal OMT. The results for umbilical cord prolapse were really too meager to analyze and apparently required a much larger sample size in order to obtain data sufficient for statistical analysis. The cesarean section data showed one result in the population data comparison and contradictory results in the case control data. Even in the population comparison, the cesarean section delivery rates differences were the least impressive in this study.

It appeared that the data for cesarean section rates may be determined by factors overriding the benefits of OMT, such as age of the mother and regional differences in the utilization of the cesarean section procedure. In the prospective study proposed based on the present findings, all outcomes of labor and delivery will be evaluated, but the expectations regarding cesarean section rates may be seen as mitigated or not as likely to be affected by prenatal OMT. Besides the reasons mentioned above this could also be due to the reasons for cesarean section which have more to do with feared litigation, and criteria of maternal and fetal condition that are very conservative rather than the musculoskeletal integrity of the woman and uterus which may have benefitted from prenatal OMT.

The multi-centered nature of the present study served to overcome most of the concern for regional differences in the standard of obstetrical practice. Even so, it is recognized that with a larger number of subjects, concerns over racial, ethnic, and socioeconomic status differences would have been greatly reduced. Despite these concerns, if the direction of the data indicative of improved outcomes in labor and delivery can be accepted, then OMT in prenatal care has much to offer from the health as well as economic perspective.

Health Policy Implications

When the economic impact of the outcomes studied is considered, the data in general had great implications; but data on pre-term delivery, use of forceps and meconium-stained amniotic fluid were the most dramatic, and comprised the strongest findings. While the morbidity and mortality of labor and delivery have had great emotional impact on the affected families, the costs to society constitute an issue of national importance for health policy and funding of prenatal care.

From the national health policy perspective, the problem is defined as the cost to society of the morbidity and mortality associated with high-risk pregnancies and the complications of labor and delivery. Perlow et al.[41] established that birth trauma can be classified into those injuries that result from hypoxic states and those due to mechanical factors. High on their list of complications were prematurity, meconium-stained amniotic fluid, and forceps delivery, which were considered in the present study. Also surveyed were types of anesthesia, birth weight, use of oxytocin, maternal age and macrosomia.

From data collected on successful insurance claims in Florida, Stalnaker et al[42] showed cases involving complications in cesarean section delivery to comprise 70% of successful claims. Also, 30% of the cases were vaginal deliveries, of these 79% involved use of forceps, and 45% of all the cases had meconium-stained amniotic fluid. Besides the emotional and treatment costs, there are legal costs as well.

Another aspect to be considered is socioeconomic status, Onion et al.[43] showed that complications of labor and delivery considered in the present study were among those found to be more prevalent in a medicaid population. This aspect of the cost issue meant every taxpayer contributes to paying for the complications of labor and delivery. Therefore, if OMT in prenatal care has benefits to the mother and lowers costs to the government, this might be of interest to the populace at large.

The March of Dimes web page (http://www.modimes.org/stats/expenditure.htm) presented Infant Health Statistics on a number of items. Costs for complicated births range from $20,000 to $400,000 per baby, compared to about $6,400 for a "normal" uncomplicated delivery.[44] Some complicated pregnancies required that the newborn be delivered by cesarean section. Cesarean delivery costs an average of $11,000 compared to the $6,400 for uncomplicated vaginal delivery.[45] The estimated lifetime costs for 18 of the most clinically significant birth defects in the United States were $8 billion in 1992.[46] Many of these birth defects may have been due to the outcomes of labor and delivery considered in the present study as well as due to genetic anomalies. The webpage goes on to report that low-birth-weight babies require increased hospital and provider resources, including time in a neonatal intensive care unit at a cost ranging from $1,000 to $2,500 per day.[47] The lifetime medical costs for one premature are conservatively estimated at $500,000.[48]

Feldman and Wood[49] compared the costs of prenatal care, labor and delivery, and postnatal care of 775 high-risk pregnancies with the costs of 2,825 low-risk pregnancies. They reported that the total cost for premature births (N=292) was $6,112,356 with an average of $20,933 compared

to term births (N=483) total cost of $3,682,496 with an average of $7,624. Applying the data from the present study that showed a pre-term rate of 3.2% compared to the population rate of 10.0%, the 68% reduction in pre-term deliveries would result in a savings of $4,039,602. When applied to the nation as a whole, this translated into billions of dollars potentially saved.

The incidence of cerebral palsy is linked to hypoxia and prematurity. Estimated costs for this condition were $2.4 billion for 1992 with an average cost $503,000 per case.[50] Application of the reduced rate of prematurity found in the present study to this data also showed the potential for significant reduction in economic costs.

Conclusions

The benefit of prenatal OMT was suggested by the data reported in the present comparison study. One purpose of the current study was to present data justifying a grant proposal to subject the question of the benefits of prenatal OMT to prospective study utilizing a random controlled groups design. This purpose has been fulfilled and a grant proposal will be developed. The design will randomly assign women to groups who, during pregnancy receive OMT, no-OMT, and sham-OMT. It will be designed so that the women will be blind to whether it is real OMT or sham-OMT.

If the data of the current study suggestive of benefit for women who receive OMT during pregnancy is substantiated by further research, the implications for health care policy are significant. The reduction of morbidity and mortality due to the complications of labor and delivery is worthy of pursuit as a goal in itself. The promotion of a normal, natural gestation, labor, and delivery by the application of OMT appeared to increase the quality of health and life itself, truly a benefit to our society. The integration of OMT into routine prenatal care appeared to be a goal worthy of pursuit because of the potential for the increased the quality of medical practice in obstetrics.

From a cost-effectiveness perspective, the reduction of morbidity and mortality during gestation, labor, and delivery appeared to have obvious benefit. Fewer days in the hospital for both mother and infant due to the adverse effects of meconium expression, pre-term delivery, and forceps delivery seemed obvious. Insurance companies, managed care organizations, federal and state governments would pay less for the medical care required for these for complications due to these outcomes. Less medical care would be required to treat the long term adverse effects of forceps use and pre-term delivery associated with neurological dysfunction.

For the osteopathic profession, one primary implication is the justification for reimbursement for OMT services in prenatal care.

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From the ground up

by Eileen DiGiovanna, DO, FAAO, New York College of Osteopathic Medicine

It is a great honor to have been selected to present the Scott Memorial Lecture at the Kirksville College of Osteopathic Medicine's Founder's Day. This lecture was instituted to honor two osteopathic physicians, Drs. John Herbert Scott and Katherine McLeod Scott. I knew of these physicians because they practiced in Columbus, Ohio, my hometown and they were attending physicians at Doctor's Hospital where I worked as a nurse's aide during the summers I was in college. I also interned at Doctor's Hospital after I graduated from the Chicago College of Osteopathy. I never got to know them personally, but I heard about them often from my mother and aunt who were nurses working initially at the hospital and later in DOs offices, as well as from other physicians in the hospital. They were always spoken of with a great deal of respect. They represented the best in osteopathic medicine and were role models to many family practitioners.

I thought about them as I began to prepare for this lecture and I reminisced about how far I have come in the profession, from a very scared new osteopathic medical student to a professor of osteopathic manipulative medicine and associate dean, and how it was I got to this point of giving a lecture dedicated to these two fine osteopathic physicians.

The founder of osteopathy, Andrew Taylor Still, offers used analogies when he was teaching. One of his analogies seemed to me to be especially appropriate as I was preparing this lecture. It is his analogy of the osteopath to a carpenter.

The strongest foundation for the developing osteopathic physician is that built on the land tilled and shored up by others in the profession.

To quote from his book, *The Philosophy and Mechanical Principles of Osteopathy:* " He (the osteopath) is like an apprentice who wishes to learn the trade of a carpenter. The carpenter's first instruction or his first lesson begins with the framework of the house. His instructor begins with the foundation, and he is positive and emphatic that it must be very solid, it must be perfectly square and level". It is this foundation that I wish to address first.

You, who are just entering into the educational process now, have already begun gathering the materials for your foundation. Each piece of information you have learned, each compassionate act you have performed, each honest decision you have made, have become the building materials for your foundation. You will now begin the process of constructing your foundation. It will contain all the knowledge of anatomy, physiology, biochemistry, osteopathic manipulative medicine, obstetrics, surgery, and so forth that your professors can teach you. You must build a strong and a sound foundation. By graduation your foundation should be complete.

Your internship and your residency begin the framework of you as a physician. And, finally you have treated your first patient as a full-fledged physician, you will have completed a major task.

But, I think you need to be aware that the foundation you are building sits on ground as is true of any building. When a building is built by even the best carpenter, it is only as solid as the ground it is built on. A bed of sandy soil will not support even the sturdiest of foundations. Rocky soil may not allow you to sink your foundation deep enough for it to be supported. Choose your soil wisely.

The strongest foundation for the developing osteopathic physician is that built on the land tilled and shored up by others in the profession. Many DOs before you have worked hard to prepare the ground for the generations following them. DOs like the Scotts, your Dean, Dr. Michael Kuchera and his father, Dr. Bill. From Dr. Still, to others of great foresight, such as Drs. Louisa Burns, J. Stedman Denslow, and Irvin Korr, PhD who were great researchers of the profession. Included in this group are also Drs. George Laughlin, Paul Kimberly, Edna Lay, and the Gutensohns, who were educators here at this school. There are countless others to numerous to name, who have also combed the soil where you will begin to build your foundation. All of these names are unfamiliar to you now, but will soon become more and more familiar. Every year new educators and new re-

searchers join the profession to prepare the soil for coming generations of osteopathic medical students.

The past generations of DOs have worked to bring the profession from the time of being called "quacks" and "cultists" to a time when you can obtain a residency in the finest hospitals in the country and never have to bow your head to anyone. They have developed the educational system from a one-year term of two courses, anatomy and manipulation, to a system equal to, and in some ways exceeding that of, the finest of medical schools. They have prepared the way in licensing, hospital staff privileges, patient acceptance, acceptance in the military services, and political recognition, so that your foundation may be a secure one. They have opened doors and seemingly moved mountains to ease your way.

In the 1960s, DOs fought the efforts of the AMA to amalgamate them into the medical profession and, thus, destroying the osteopathic profession. They watched as the AMA took away the right to be licensed in California, the osteopathic medical society, an osteopathic medical school, 60 percent of the osteopathic residency slots, and hundreds of osteopathic physicians. The dedicated DOs fought until they got back licensing rights in California, the California Osteopathic Medical Society, new residency slots, and a new school. There are now two schools in California and more DOs than prior to the 1960s. Dedication to and love of the profession strengthened their resolve.

This is indeed solid ground upon which to build your foundation. Today the American Osteopathic Association and the American Academy of Osteopathy, the State Osteopathic Medical Societies, and many other osteopathic organizations and individuals are ever alert to protect your rights, to allow you to be free to complete this structure which will be you, the osteopathic physician of the future. They seek to guarantee that you will be able to concentrate on the care of the patient and not have to worry about your practice rights. There was a time when DOs were jailed for practicing osteopathic medicine. There was a time when hospitals closed their staffs to DOs and states refused to license them. These battles have been fought and won and new challenges are being met every year as health care in the United States undergoes many new changes. Do you know how lucky you are? I do not think you really do. Sure you know that it is great to be a medical student at last, finished with the rat race of competition to get in. You are anxious to begin or continue on in the educational process, but I wonder if you really understand how lucky you are that you have been chosen to become an osteopathic medical student. After 40 years as a DO, I think I am qualified to tell you that it is the finest profession there is and I know that my foundation was built very firmly on osteopathic ground.

Today, I want to encourage you to make sure your foundation is the best it can be, that it is "square and level", as Dr. Still said, and that you build that foundation on ground tilled and shored up by osteopathic physicians before you. What can you do to assure this?

First, keep an open mind. Take in all the knowledge your professors have to offer. Learn to use your eyes, to see the needs of your patients, not just their rashes and traumas. Learn to use your ears, to really listen to what your patients are saying to you. Learn to use your hands, to bring the magic of touch to the healing process. Learn to use your brain and your heart together to bring both knowledge and caring to the people who trust you to treat them. See what the osteopathic philosophy and the practice of osteopathic manipulative medicine have to offer you and your patients. Train your hands in the special skills of diagnosis and treatment offered by the osteopathic physician. Guarantee yourself that you will have the most complete store of knowledge possible.

Second, respect the patients who are assigned to you or who choose to come to you. Do not laugh at them, do not judge them, do not be dishonest with them, and do not betray their confidence in you. Do not withhold from them the special skills that the osteopathic physician possess. Whether a clerk on rounds, an intern or resident, or a full-fledged physician, look at the patient from the ground up – their foundation – physical, mental, and spiritual, one whole being. Really try to understand the osteopathic philosophy of the unity of the body and do not withhold that unique aspect of osteopathy from them. Recognize the ability of each body to heal and regulate itself, and provide the assistance it needs in this process. Examine carefully the interrelatedness of their structure and function.

Third, appreciate and respect the profession and the school that have opened their doors to you to allow you to reach your goal of becoming a physician. Take pride in the profession's distinctiveness and the additional tools you will possess with which to treat your patients.

I believe that osteopathic pride is contagious and I hope I have spread that "virus" to you and that you will be infect by it. Then when someone says to you, "So, you are going to be an osteopathic physician?", you can lift your head, square your shoulders, and with a gleam in your eyes, say "I sure am"! I hope you can feel the pride that I feel today as I stand here and look out at you as you prepare for your apprenticeship in building yourself as an osteopathic physician from the ground up.❐

From the AOBNMM Files:

(Certifying Board formerly known as AOBSPOMM)

Osteopathic manipulative treatment and Down syndrome

by Steven L. Funk, DO, Kirksville College of osteopathic Medicine

Chief complaint

Down syndrome.

History of the chief complaint

This four-year-old child was brought to me by the parents in the hope that I could restore some normal function. His mental development had been substantially affected by the changes associated with Down syndrome. He spoke very little and was socially withdrawn. He was largely inactive and did not participate in family chores or activities. His physical development left him with muscular incoordination, tangling of his feet and poor speech.

Past medical history

The patient had experienced more than six episodes of sinusitis/pharyngitis per year since birth, sometimes with otitis. He had many small falls as a result of his poor coordination but no major traumatic events.

Surgical history

None.

Family history

The parents have seven other children, none of which has known chromosomal abnormalities. There was no upstream family history of Down syndrome or other genetic diseases.

Social history

Does not care to play with parents, peers, or siblings; withdrawn.

Allergies

None.

Medications

None.

Review of systems

HEENT: Recurrent pharyngeal infections, stuffy nose with snorting, drooling, irregular teeth.
CV: Negative
RESP: Mouth breathing.
GI: Light eater, picky. Good bowel habits.
GU: Negative
NEURO: Poor coordination, "scissor" walking pattern with frequent tripping.

Physical examination

The patient was a generally healthy four-year-old male with the facies indicative of Down syndrome. He was cooperative, but his affect was flat. He was examined in the sitting, standing, prone, and supine positions.

HEENT: Narrow face with high arched palate, dental misalignment, posterior displacement of the jaw. Narrow nasal passages. Open mouth with protruding tongue. Inner epicanthal folds. Visual acuity 20/25 o.u., EOM function good, fundi benign. Folded ears with small lobes.

HEART: Regular in rate and rhythm, no murmur.

RESP: Lungs clear and well aerated in all fields, nasal congestion, mouth breathing.

ABDOMEN: No masses or organomegaly, no tenderness, normal bowel sounds.

NEURO: DTR's normal +2/4 in all extremities, CN's intact, mild hypotonia.

STRUCTURAL: The standing posture showed internal rotation of both feet and legs, his A/P and lateral curves were good. There was mild hypotonia in the extremities. Leg length was equal, pelvic landmarks level. Gait evaluation showed interference of his feet due to narrow hip angles and internally pointed feet. His spinal examination showed bilateral restrictions of the occipital condyles upon the atlas, C3-5 sidebent rotated right, T7,8 neutral, sidebent right, rotated left and L4,5 forward bent and restricted bilaterally. Except for the O-A restriction, these were minimally restricted areas. His sacrum was base anterior bilaterally (cranial extension) and restricted at both superior poles. Evaluation of the PRM revealed a rate of 12 with diminished amplitude. There was a vertical strain inferior pattern

with the tightest restrictions anteriorly at sphenoid and ethmoid. Extension mechanics existed in all facial structures. The premaxillae were in extreme internal rotation with the primary incisors anterior and the secondary incisors "stacked" behind them. The maxillae and palatines were also in internal rotation giving the narrow "vaulted" hard palate. The posterior cranium was in flexion/external rotation, wide and flat posteriorly. The sacrum was unable to move into the flexion phase. The upper extremities preferred external rotation and the lower extremities preferred internal rotation.

Assessment

1) Down syndrome.

2) Somatic dysfunction of the cranium; cervical, thoracic and lumbar spine and sacrum including the upper and lower extremities.

3) Developmental abnormalities secondary to #1&2 above.

Treatment plan

I made the parents aware that the treatment plan would involve a series of treatments over probably more than one year because of the child's age and the severity of the restrictions. With that understood, we began treating the child once monthly.

Treatment began with spinal mobilization and addressing the paradoxic sacral pattern, which was opposite of the occipital pattern.

Course of treatments

On subsequent visits the pelvis was released using the Foredom percussor and indirect method, respiratory sacral techniques. This allowed fascial unwinding of the lower extremities, which began to return the feet to a neutral, anterior position after the second treatment. The sacrum then returned to its proper relationship to the occiput.

This increased the amplitude of the PRM. By the fourth appointment the parents were seeing better walking and running. As the spinal restrictions were incidental, treatment continued primarily directed to the cranium. The vertical strain inferior proved to be a tenacious one with a strong membranous component and many interosseous restrictions in the vault and face. The hard palate was "hard" for several reasons. The midline intermaxillary suture was very tightly compressed, there was a great deal of dental misalignments pulling on the maxillae and finally, the child's cooperation ceased when I used intraoral technique (and four-year-old teeth are sharp!). By the eighth treatment the child was showing behavioral improvements. He was more outgoing socially with both family and friends. He spoke more voluntarily and more loudly. At this stage the facial sutures were mostly released, although dental crowding still existed from the delayed maxillary and mandibular growth from the somatic restrictions. The vault restrictions were more mild and released prior to the face.

At the end of the first year the child was significantly more active, coordinated and outgoing. His affect was warm and open. He laughed, smiled and got a mischievous streak which he enjoyed greatly. He still exhibited a vertical strain inferior pattern' but to a much lesser degree. His face had widened and his teeth were aligning better.

His hard palate was wider and flatter and moving well. The sphenoid and SBS still had poor motion and compression within the intraosseous sphenoid. Due to his improvement the treatment frequency was reduced to four times yearly, where they have remained (nine years) except for occasional lapses.

The patient has progressed quite nicely and developed into a helpful, happy, and productive individual. He helps on the family farm and assists with siblings when the father travels. The facial mechanics still have preference for the internal rotation phase.

Discussion

This case illustrates all of osteopathy's tenets. Alterations in structure in the cranium and sacrum altered function of the child. His body showed the innate properties of self healing and self regulation when structural restrictions were released. The behavioral response was indicative of the structural component in the mind/body/spirit relationship. Most importantly, there was an improvement in the child as a result of rational application of the other tenets of osteopathy. Vertical strain inferior patients usually have flexion preference in their sacrum due to the inelastic dural attachment to the Foramen Magnum and the relative flexion in their occiput. This patient's sacrum was paradoxical and non-physiologic and, therefore, a site for early treatment. This case also shows that while some structural abnormalities can be completely corrected, there are many patients (genetic or traumatic) that have irreversible changes, such as the presphenoidal early fusion which occurs with the Down syndrome, leaving obstacles to normal function which must be tolerated and compensated. Many of the anatomic (structural) changes associated with Down syndrome are irreversible but osteopathy can effect a change in the growing child's development by optimizing whatever human potential each individual possesses. Removal of somatic restrictors allowed this child to walk and run better despite his hypermobile and hypotonic legs. Removal of his cranial somatic dysfunction allowed for optimization of his mental and social abilities.❐

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"Dig On"

if these individuals were to commit to research activity, they have no time to participate.

These problems, although complex, are not insurmountable. In fact much is currently underway within the osteopathic profession to address these very issues.

The AAO's Louisa Burnes Osteopathic Research Committee (LBORC) is developing a program to introduce clinicians to the fundamentals of research design and implementation. The course will include basic research training and instruction in the use of the Outpatient Osteopathic SOAP Note Form, a validated tool intended for the acquisition of outcomes data.[1,2] The program is to be offered in association with AAO CME programming, the first course being planned for the AAO convocation, in March 2001.

It must be recognized that training a clinician for a few hours in the skills that it takes a PhD years of work to acquire will initially result in very few competent researchers. It is, therefore, important to encourage collaborative relationships between clinicians so acquainted with research methods and PhDs skilled in protocol development and implementation.

The membership of the LBORC contains a number of PhDs who are already involved in such activity. There are many additional such individuals teaching and doing research at osteopathic colleges. I have had the pleasure to meet many basic science faculty members at various colleges of osteopathic medicine who are interested in collaborative osteopathic research.

The PhDs, however, must be granted institutional support to pursue such collaborative relationships. PhD faculty members at colleges of osteopathic medicine are employees of their colleges, each of whom answers to their respective chairperson and dean. They are expected to work according to the goals and objectives of their department and college.

Therefore, it is ultimately the responsibility of our colleges of osteopathic medicine to provide a supportive environment in which osteopathic research can occur. This is happening.

In December of 1999 the American Association of Colleges of Osteopathic Medicine (AACOM) sponsored the Osteopathic Collaborative Clinical Trials Initiative Conference (OCCTIC). This meeting, held in Bethesda Maryland, included representatives from AACOM, the AOA, the AAO-LBORC, the ACOFP, all of the colleges of osteopathic medicine, the NIH, and the AHCPR (AHRQ).[3] From this meeting an action plan has been proposed that includes the development of (1) a center for osteopathic research, (2) a research web site, and (3) a national osteopathic clinical database. A follow up telephone conference between representatives of the AOA, AACOM, and the AAO, to advance these issues, was held this past April 28th.

The National Osteopathic Clinical Data Base Task Force of the LBORC is actively working toward the establishment of a database for outcomes research for several years. The importance of this project has been recognized by AACOM as indicated in the action plan described above.

The individual colleges also are active. The AAO's LBORC has representation, and consequently support, from most of the osteopathic colleges. The New York, Philadelphia, Kirksville, Florida, and Chicago Colleges are particularly active.

Additional college activities include but are not limited to the following:

The Kirksville College of Osteopathic Medicine, Dean Michael Kuchera, has announced the establishment of the Strategic Research Initiative. It is a five year, one million two hundred and fifty thousand dollar intramurally funded, program. The college provides protected research time for faculty and encourages collaboration.

The Nova Southeastern University College of Osteopathic Medicine, Dean Anthony Silvagni, has been designated as the site for the national database and has provided assistance with the project.

My college, the Chicago College of Osteopathic Medicine, Dean John Fernandes, has long funded an osteopathic research professor, Tom Glonek PhD (and before him, Albert F. Kelso PhD). CCOM encourages collaborative activities between basic scientists and clinicians and provides an environment in which such collaboration can occur.

Resources are available. So what can you do?

You should, no matter what your level of research skill and experience, attend the AAO research training programs.

You can search the literature and critically study what is being done. Such searching is what prompted Dr. Norton to challenge us. Others are already out there working, doing research. Build upon that work. Look critically at the methods employed. If you can identify errors in methodology construct a new protocol that addresses the error and repeat the study. That is the scientific method.

You should keep it simple. All too often we try to "prove" some thing that is too complex to lend itself to the development of a workable protocol. Many excellent ideas have proven unsuccessful, not because they were incorrect, but, because the criteria for inclusion into the study prevented obtaining an adequate number of subjects from which to draw appropriate statistical conclusions.

You must understand the use of statistics. Or if you do not possess an adequate grasp of statistical analysis, work collaboratively with someone who does. As you develop your pro-

tocol, ***before*** you begin gathering data, you should identify, specifically, what you intend to measure, how you will record the measurements, and what statistical tools are appropriately applied to these measurements. This may seem to be a daunting task. It isn't if you measure what you are already doing.

Outcome studies fit into the practice activities of clinicians. Dr Norton suggests that we demonstrate the efficacy of OCF. After all, that is what you do. You treat your patients, and they benefit from it. Why not record your activities? The AAO's Outpatient Osteopathic SOAP Note Form, and there is an OCF modification of that form, offers you a tool that you can use in the course of your daily practice activities. For research, of course, you must adhere rigorously to the procedure for completion of the form. Many clinicians find this to be inconvenient, but so was doing an H&P when you were a second year medical student, and I'll bet you got pretty proficient at that by the time you started your internship.

Adhering to a protocol takes time and effort. I hated using the SOAP Note Form when I first started using it. Now, after two years I'm quite accustomed to it. If you are willing to change your record keeping habits, rigorously adhere to that activity, and contribute to a national osteopathic clinical database, your entire practice can be dedicated, not just to helping your patients, but, to validating Osteopathy. We are a small enough community that we can work together. We are a large enough community that if we do work together we can generate data of tremendous volume. If those data demonstrates what I expect they will demonstrate, we can accomplish what A.T. Still attempted over one hundred years ago, change the way medicine is practiced.

We are not only awake; we are on our second cup of coffee. Dr. Norton's warning, however, must be taken very seriously because, unless we act quickly, we, might yet, end up late for work with dire consequences. Time is rapidly running out. As the members of the Beat Generation used to say, "you dig, man?" Well, if so, Dig On!

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