

THE AAO

FORUM FOR OSTEOPATHIC THOUGHT

JOURNAL

Official Publication of the American Academy of Osteopathy®

TRADITION SHAPES THE FUTURE

VOLUME 17 NUMBER 4 DECEMBER 2007

Osteopathic Manipulative Medicine, Acupuncture, and Low Back Pain



Instructions to Authors

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

The AAO Journal welcomes contributions in the following categories:

Original Contributions

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

Case Reports

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

Clinical Practice

Articles about practical applications for general practitioners or specialists.

Special Communications

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

Letters to the Editor

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

Book Reviews

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

Note

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

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

Editorial Review

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

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1. Type all text, references and tabular material using upper and lower case, double-spaced with one-inch margins. Number all pages consecutively.
2. Submit original plus two copies. Retain one copy for your files.
3. Check that all references, tables and figures are cited in the text and in numerical order.
4. Include a cover letter that gives the author's full name and address, telephone number, institution from which work initiated and academic title or position.
5. Manuscripts must be published with the correct name(s) of the author(s). No manuscripts will be published anonymously, or under pseudonyms or pen names.
6. For human or animal experimental investigations, include proof that the project was approved by an appropriate institutional review board, or when no such board is in place, that the manner in which informed consent was obtained from human subjects.
7. Describe the basic study design; define all statistical methods used; list measurement instruments, methods, and tools used for independent and dependent variables.
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Provide a 150-word abstract that summarizes the main points of the paper and its conclusions.

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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.
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A PEER-REVIEWED JOURNAL

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

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Contributors

William H. Stager, DO, MS, FAAMA, FAAO, FACOPF. Osteopathic Manipulative Medicine and Acupuncture Combined: A Retrospective Case Study to Determine If Order of Treatment Makes a Difference in Outcome for Acute Mechanical Low Back Pain

The author presents a study of whether the sequence of OMT and Acupuncture had any impact on the treatment outcome. The paper reviews the use of acupuncture in the United States. Dr. Stager condensed his FAAO thesis for this paper. (p. 11)

Thomas A. Quinn, DO, FAOCOPM, Thomas J. Fotopoulos, DO and Mark A. Best, MD, MBA, MPH. Attitudes and Confidence Levels of Second-year osteopathic Medical Students towards Osteopathic Manipulative Medicine

OMS-2 Students from the Lake Erie College of Osteopathic Medicine/Bradenton were surveyed about their likelihood of using osteopathic manipulation in their clinical training programs and in their future practices. The results force the question of what does the future hold for osteopathy versus osteopathic medicine. The findings suggest a decline in how students value the historic values and skills of the profession. The authors present ideas to address the issues they discovered. (p. 23)

Alyn Hatter, OMS-3 and Stuart Williams, DO. Understanding and Treating Fatigue and Gait Instability in Person with Multiple Sclerosis: An Osteopathic Approach

The authors present a patient with multiple sclerosis. Additionally they review and discuss aspects of the pathophysiology, diagnosis and treatment. The role of osteopathic manipulation in the care of the patient is examined. (p. 29)

Regular Features

DIG ON. Robert C. Clark DO, MS describes the program he created for students to enable them to build their OMT skills, patient skills and charting skills. Dr. Clark is the founding chair of the department of osteopathic manipulative medicine at Touro University College of Osteopathic Medicine in California. (p. 7)

FROM THE ARCHIVES. George W. Northup, DO, FAAO, was the editor of the JAOA for many years. In 1988, he wrote about the challenges of the future. This article was republished in the *1995-96 Yearbook of the American Academy of Osteopathy*. (p. 8)

BOOK REVIEW. Midwestern University's department of Osteopathic Manipulative Medicine presents *Osteopathy Chicago Style* in a DVD that showcases Robert Kappler, DO, FAAO. (p. 32)

ELSEWHERE IN PRINT. *Hip-Spine Syndrome* was first presented in literature in 1983. The syndrome is a relationship between osteoarthritis of the hip and dysfunction and pain in the spine. What happens when the hip is replaced? Does posture improve and is back pain reduced?

Pain is very difficult to evaluate. It is subjective. Reduced pain in response to manipulation is hard to assess objectively. **Pain Bio-markers** provide a means to measuring pain levels physiologically.

Low Back Pain costs the nation billions each year in lost time and productivity. It is subjective. In most cases the use of sophisticated and expensive imaging and testing gives no actionable information. The American College of Physicians and the American Pain Society have published their latest guidelines in evaluation and treatment of low back pain. (p. 33)

Letters

Stephen J. Noone
Executive Director
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Dear Steve:

It has long been my belief that the American Academy of Osteopathy's (AAO) Journal: Forum for Osteopathic Thought sets the gold standard for timely, relevant articles aimed to educate and inform all osteopathic physicians about the most recent health care developments and the unique opportunities for osteopathic medicine within them. The September 2007 edition, which I just finished reading, confirms my opinion. Congratulations for producing yet another excellent resource for all DOs.

The AAO Journal, on behalf of DOs across the country, has embraced its osteopathic heritage and proudly proclaims it throughout the country. Thank you, Steve, for following A.T. Still's, MD, DO, sage advice: "Let your light so shine before men (and women) that the world will know you are an Osteopath pure and simple, and that no prouder title can follow a human name."

Kindly yours,
John B. Crosby, JD
Executive Director
American Osteopathic Association



View from the Pyramids

Robert C. Clark

What is our future? The Quinn, Fotopoulos and Best article paints a bleak picture. In the last issue I presented a senior colleague's opinion that the osteopathic colleges have too many students, too few faculty and too little time to teach not only the skills but also the appreciation and understanding of osteopathy. The rapid growth of the profession is both good and bad.

It is good because strength lies in numbers, but at the same time it is bad if the majority of the members do not believe in the intrinsic value of the profession's philosophy. It is bad if all they want to be are doctors. It is bad if they won't even try to see what osteopathy can do for their patients.

It is easy to cast aspersions on the colleges because they under staff the osteopathic manipulative medicine departments. Likewise it would be easy to cast aspersions on the AOA because it tacitly defines osteopathic medicine as primary care. But none of that solves the problem. Quinn, Fotopoulos and Best suggest additional mechanisms to get students to practice their OMT skills. From my years in osteopathic academia, few students practice OMT outside of the class environment. The few who do practice OMT usually do it as part of their UAAO activities. There is rarely OMT homework! As anyone in the AAO or the sports world knows: practice gives more skill, experience and confidence. My personal trainer tells me that to really learn an activity, it must be repeated 300 times to build *muscle memory* or *body memory*.

As part of the solution faculty must be available to consult with students who are giving treatments. Study sessions and review sessions are great as long as they are really hands on. I have seen too many that are all talk. Talking never teaches kinesthetic skills. More opportunities for clinical observation are good as well. But nothing replaces actually performing a task to build skill. Students need osteopathic homework! Osteopathic manipulation rotations in the third and fourth years are good, but if we really want to build skills for students to use on their rotations then they need to be built in the first two years and reinforced in the first two years and in the clinical rotations. Clinical training environments need to not just support, but require students, interns and residents to do OMT.

Some of our colleges have required OMT rotations but some are clearly better than others. If you doubt me, consider what a family practice colleague told me about his practice: He does about 20% OMT and was taking two students at a time for so-called OMT rotations. This has since stopped. But it still shows that the clinical training years are the weak point in OMT training. Is one rotation enough? Perhaps a change in

thinking is in order. Instead of trying to integrate osteopathy into medicine, perhaps we should demand that all disciplines make themselves osteopathic! The thinking needs to shift from today's reality of osteopathic colleges being medical colleges with sideline training in osteopathy to real osteopathic colleges where everything is done in an osteopathic construct. Too much of today's curricular revisions are only in the first two years. The problem are in the last two years of osteopathic training as well.

Postgraduate programs need to change in the same way. We need postgraduate training programs that are something other than hospital-based programs. Those of us who specialize in osteopathic manipulation tend to work in the outpatient world. In a number of hospitals, there are hospitalists in internal medicine, pediatrics and even OMM. But there are larger numbers of practitioners in the outpatient world. The Academy's postdoctoral standards and evaluation committee are now working on this issue. They need our support and encouragement. Here is where the AAO can lead the entire profession. □

NeuroMusculoskeletal Medicine and Osteopathic Manipulative Medicine Plus One Residency Positions at LECOM

Lake Erie College of Osteopathic Medicine has openings in its NMM/OMM plus one residency program for matriculation in July 2007 and December of 2007. Application is open to osteopathic physicians who will have completed a residency in another specialty who wish to become board certified in neuromusculoskeletal medicine and osteopathic manipulative medicine. The one year residency includes self directed and supervised study in inpatient and outpatient manipulative medicine; as well as experience in the training of medical students, interns, residents and other physicians in the skill of osteopathic manipulation.

Candidates will participate in ground-breaking osteopathic research as part of the program. Please respond with a letter of inquiry and CV to: NMM/OMM Fellowship c/o LECOM 1858 West Grandview Boulevard, Erie, Pennsylvania 16509.

Questions and informal inquiries should be directed to the residency director – John E. Balmer, D.O. at JohnBalmer@aol.com or 814-654-7334 ext 310.



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ERIE, PENNSYLVANIA BRADENTON, FLORIDA

Dig On



OMT Homework

Robert C. Clark

How do we get students to practice their osteopathic manipulative treatment (OMT) skills outside of the practice room? In current medical education thinking, it is desirable to have clinical experiences for student in the first two years. How can this be done without a clinic, patients and close supervision? Can the two questions be answered at once?

The solution that I developed in 1998 while I was the OMM Dept. Chair at Touro University College of Osteopathic Medicine was a modified patient care program. Students were paired with and treated each other weekly. They were required to examine and treat to the best of their knowledge and skills at that time. They were also required to keep charts on their *patients* using the AOA forms developed by Drs. William and Michael Kuchera. The semester long program was part of the second semester of the second academic year. The activity was graded and faculty members did consultations.

Subsequent classes requested program expansion. Two years later the program, which was called the “Long Term Student Patient Partners Program” (most called it “Patient Partners”) ran throughout the first two years. The first semester start-up was mid semester. By this time, students had learned some treatment techniques. Initially, the weekly sessions were opportunities to practice the skills learned in the previous classes. By the second semester, the students were actually diagnosing and treating somatic dysfunctions in response to *patient* complaints.

A file cabinet in the OMT practice room contained charts for each student. Students received written and verbal reminders about privacy and confidentiality. The department created a library of Current Procedural Terminology, International Classification of Diseases and Physicians Desk Reference books. All required forms were stocked-piled in the file cabinet. Students could do their treatments off campus but the charts had to *permanently* stay in the room. This is a practice similar to most hospitals and clinics. The activity was unsupervised and thus considered HOMEWORK! Every semester students were randomly paired. The first visit each semester required a structural examination, medical history and initial treatment. Faculty did consultations at student request.

The exercise was graded. Charts were *audited* starting five weeks into the semester. Summaries of the chart reviewer’s findings were placed in the chart for the students to use to help improve charting skills. At the beginning of the program the department learned that students needed a lot of help with charting. We created lectures in the department’s curriculum to meet this need.

The program was designed to address several goals:

1. Put student doctors into long-term relationships with a student patient that lasted four months.
2. Gain experience in continuity of care.
3. Have students gain OMT skills and experience with regular practice.
4. Gain charting skills.
5. Improve students’ perceived value of OMT.

At the end of the four semesters each student had given OMT to four different student patients. Each student had 50-55 OMT patient encounters over the entire program. We observed both formally and informally that the assignment was well received and some students even told us they appreciated being forced to do OMT homework.

We saw the following benefits from the program:

1. Students got regular OMT practice and gained confidence in their skills.
2. Students learned to function as Doctors in a long-term relationship with a patient.
3. Students liked the activity.
4. Students rapidly developed professionalism when they were in the doctor role.
5. Students developed charting skills that they can carry into their clinical rotations.
6. An additional grading element that was skills related was obtained.
7. Faculty members were allowed to do clinical teaching without having a clinical facility.
8. Demand on student health services was reduced as students’ skills increased and they are able to take care of the biomechanical and musculoskeletal needs of their patient colleagues.
9. Students obtained an early clinical experience that did not require real patients, a clinic or constant supervision.

My experience in this program while I was the OMM Dept. Chair spanned from 1998 to 2005. Colleagues asked why run a program that took a lot of effort. The answers were that it was effective and for the most part fun for both students and faculty. The faculty really enjoyed their teaching time in the consultant role. We also discovered that students no longer came to our offices wanting us to treat their injuries. Instead their partners were taking on the challenge and seeking faculty as consultants.

This program is not a panacea. It requires materials and faculty time. Some students will dry lab the experience. But even these individuals' charting skills improved! Ultimately any solution to the question "how do we get students to practice their OMT" is going to require commitment from them and their

faculty. My departmental colleagues' attitude was we lead by example. When we made the commitment, we saw most students make the commitment! As in all of life, one benefits in proportion to the effort one makes! □

From the Archives

Mission Accomplished

George W. Northup

From Osteopathic Visions, 1995-1996 Yearbook, American Academy of Osteopathy, p 124.

Too many persons perceive osteopathic medicine as "regular" medicine plus structural diagnosis and manipulative treatment (OMT). Unfortunately, it is often practiced in that context. Therefore, we need an occasional reminder that structural diagnosis and OMT were but one way of demonstrating Andrew Taylor Still's basic philosophy.

From the very beginning, the objective of the first osteopathic medical school was to "improve [the] present system of surgery, obstetrics and treatment of diseases and generally place the same on a more rational and scientific basis" Since its inception then, osteopathic medicine was considered a system embracing the arts and sciences in medical practice. It was never a "nonmedical" school but rather a philosophy for all of medicine committed to improve its practice. It was a statement of responsibility and challenge.

Much has changed since then. Through the years there has been a tendency to emphasize the structural and OMT phases of our profession as the difference between allopathic and osteopathic medicine. While this is a significant contribution to our profession, focusing on musculoskeletal structure and OMT in diagnosis and treatment can lead us to complacency, believing our mission complete.

Although untrue, it's easy to understand how that conclusion is reached. Never in the history of modern medicine has so much interest been shown in OMT with all its various forms, such as muscle energy techniques, strain and counterstrain procedures, cranial, myofascial and the like. Large numbers of postdoctoral courses and instructional seminars are being held in which DOs, MDs, and other professionals are taking part. These courses are referred to as "manual medicine" or "musculoskeletal medicine".

This expanded interest in OMT as a separate entity from what generally is understood as medical practice remains controversial. Yet, as one who maintains a reasonable interest and knowledge of where and what manipulative techniques are being taught, I find myself somewhat disappointed that very little is said about the basic principles of osteopathic medicine. These include manual medicine but not as an insular entity.

One need not be an editorial guru to realize that segregating segments of medical education contradicts our basic unifying

philosophy. Both Hippocrates and Still maintained that the patient must be considered in the completeness of his or her composite body. The physical body, mind and soul are parts of an interrelationship that form a unified biological human being. What was true in Hippocrates' and Still's time holds today. If the profession makes no greater contribution than to reaffirm and spread the basic message of total body unity, whether applied to structural diagnosis and OMT or internal medicine and surgery, the principle remains valid.

Nevertheless, the whole-body concept is under attack in our modern medical environment. Patients are not considered as complete beings. Also, they are dehumanized further as the practice of medicine becomes a set of regulations directed by economic fiat and bureaucratic pressures.

Specialization is here to stay. Subspecialists inexorably direct their expert attention to smaller and smaller body units. But, in the process, the interaction among anatomic parts becomes lost.

Today, the practice of medicine needs as never before the guiding light of a fundamental philosophy. It needs to recognize the action and interaction of all body systems. It should apply known truths and explore new frontiers founded on the osteopathic profession's basic philosophy. We must avoid being so preoccupied with one aspect of osteopathic medical practice that we lose sight of the fundamental principles on which this profession was established.

Dr Still did not say he was giving the world a philosophy that should act as a guide to the future. Rather, in his book, *The Philosophy of Osteopathy*, he stated his desire was "...to give to the world a start in a philosophy that may be a guide in the future." This spirit is inherent in the development of modern osteopathic medicine.

Mission accomplished? Not at all. The challenge remains greater than during Still's time. It is more than just a challenge. It is the responsibility of this profession to make its contribution known and to practice what we preach during these turbulent medical times.

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Osteopathy Guest Editorial

Alan E. Smith

Two different health care trends can easily be seen in new books on the market. The effort to protect the current \$2.2 trillion current medical-pharmaceutical establishment can be seen in *Snake Oil Science* published by Oxford University Press. This book claims to prove that every type of complementary and alternative medicine is at best random chance and at worst a con or scam. Its negative message may prevent many people from even considering options outside of mainstream medicine.

At the other end of the spectrum is *UnBreak Your Health* published by little Loving Healing Press. This book is designed to help people discover the healthier options offered by complementary and alternative therapies. Written in USA Today style the book includes over 300 listings (including osteopathy), testimonials and some interesting recent scientific discoveries. This introduction to complimentary and alternative medicine can be the first step in a new path towards better health for many people but it must rely on word-of-mouth for marketing because the mass media chooses not to offend some of their largest advertisers, the pharmaceutical and medical industries.

The growing popularity of complementary and alternative medicine is provoking more aggressive efforts to prevent people from considering alternatives. Even when the doctor says there is not anything more he can do, you will just have to learn to live with it, the medical establishment does not want patients to experiment with alternatives. A new law in Texas, for example, now prohibits any physical contact with a health benefit without a minimum of a 500-hour massage license. This effectively restricts dozens of therapies even though practitioners are trained and certified by their national organizations.

It seems little has changed since 1874 when osteopathy began to challenge established medical traditions. Today mainstream medicine still wants to run out of town anything that challenges their dominance. The pressure for change is rising to an unprecedented level today however with high costs, the preoccupation with

CME Calendar for Component Societies' and other Osteopathic Affiliated Organizations

December 7-9, 2007

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

January 16-19, 2008

*19th Osteopathic Winter Seminar
and National Clinical Update*
Pinellas County
Osteopathic Medical Society
St. Pete Beach, FL
CME: 27 Category 1A (anticipated)
Contact: Dr. Kenneth Webster
727/581-9069

January 25-27, 2008

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

January 26-27

*Applied Kinesiology:
Manual Muscle Testing Comes Alive*
Jay Sandweiss, DO
University of Michigan Health Services
Ann Arbor, MI
Contact: Jay Sandweiss, DO
734/995-1880
www.doctorjaysandweiss.com

prescription drugs, and America's low standing among industrialized countries among several factors. The popularity of these two very different books will serve as a litmus test for the winds of change.

Address correspondence to:
Alan E. Smith
alan@unbreakyourhealth.com □

February 14-17, 2008

*Ophthalmologic principles and
their relationship to osteopathy
in the cranial field*
Indiana Academy of Osteopathy
Indianapolis, IN
CME: 26 Category 1A (anticipated)
Contact: IOA
317/926-3009
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February 20-24, 2008

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

May 9-11, 2008

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

June 14-18, 2008

June Basic Course
The Cranial Academy
Course Director: TBD
Hilton Hotel
Indianapolis, IN
CME: 40 Category 1A (anticipated)
Contact: The Cranial Academy
317/594-0411
www.cranialacademy.org

June 19-22, 2008

*Annual Conference: Dynamic
Concepts in Facial Development*
The Cranial Academy
Course Directors: Eric J. Dolgin, DO,
FCA and Tasha Turzo, DO
Contact: The Cranial Academy
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OMT Management of Key Lesions



Program Chair
Edward G. Stiles, DO, FFAO

- Identifying the most disruptive somatic dysfunction
- Appropriately sequencing your OMT treatment

January 18-20, 2008

Philadelphia College of Podiatric Medicine / GA
Suwanee, GA

Course Description: Level II

The course will present current information suggesting the importance and benefits of finding the Key (most disruptive) somatic dysfunction and then treating the remaining somatic dysfunction in an appropriate and individualized sequence for that specific patient.

Because of the total body changes occurring once the Key is effectively treated with OMT, sacral, pelvis, spinal and rib cage mechanics will be reviewed so that all the participants will be on the "same evaluation page" for accessing and observing the total body changes with the sequenced OMT.

During the course, each participant will screen multiple partners and treat them according to their unique sequence.

The interpretation of the screening data will be frequently discussed during the course. Case histories will be utilized to illustrate the importance of sequencing.

Course Objectives:

- Be able to discuss the basis for finding the Key and sequencing OMT
- Be able to perform a screening examination
- Be able to appropriately interpret the findings derived from the screening examination
- Be able to document the total body changes following the effective treatment of each key dysfunction

Prerequisites:

The participant should have a basic understanding of functional anatomy

CME:

The program anticipates being approved for 20 hours of AOA Category 1-A CME credit pending approval by the AOA CCME.

Program Time Table:

Friday, January 18..... 8:00 am - 5:30 pm
Saturday, January 19..... 8:00 am - 5:30 pm
Sunday, January 20..... 8:00 am - 12:30 pm
Each day includes (2) 15 minute breaks

Course Location:

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Osteopathic Manipulative Medicine and Acupuncture Combined:

A Retrospective case study to determine if order of treatment makes a difference in outcome for acute mechanical low back pain

William H. Stager

Abstract

Background: Osteopathic Manipulative Treatment (OMT) and acupuncture can be used as treatment modalities for acute low back pain. They may be used alone or in combination. There have not been any studies to determine if, during the same treatment session, using one before the other is more effective.

Objective: To determine if there is any difference in relief of acute, mechanical low back pain if OMT is followed by acupuncture or if acupuncture is followed by OMT during the same treatment session.

Design, Setting, and Patients: A retrospective two-year case study of 30 patients seen in the author's private practice for acute, mechanical low back pain of less than six months.

Intervention: All treatments included both OMT and acupuncture. Fifteen patients received OMT followed by acupuncture. The other group received acupuncture followed by OMT during the same session. All treatment sessions lasted 30 minutes, once a week for four weeks.

Main Outcome Measure: Patients reported pain levels before the first treatment and at the end of the last (fourth) treatment, using a simple 0-10 pain scale.

Results: Both groups showed similar beginning and ending pain scale values. They also showed nearly identical improvement.

Conclusion: OMT and acupuncture during the same session for acute mechanical low back pain over four weekly sessions resulted in significant lessening of symptoms. The order in which OMT and acupuncture were done did not result in any difference in pain symptom outcome between the two groups.

Key Words

Osteopathic Manipulative Treatment (OMT), acupuncture, acute mechanical low back pain, somatic dysfunction, Ming Men.

Introduction

OMT is a recognized, well-documented, and effective treatment modality for somatic dysfunction.¹ Andrew Taylor Still, MD, in 1874, founded a philosophy and medical system with a holistic perspective of health and disease, emphasizing

the central position of the neuromusculoskeletal system in illness and injury, with osteopathic palpatory diagnosis and treatment being integrated into successful health care.¹ OMT has been the subject of a growing body of research especially for the purposes of treating pain and dysfunctions of all types, including low back pain.²

Back pain of various kinds, especially low back pain, affects millions of Americans of all ages and backgrounds.³ Patients with many types of back pains, acute (less than six months duration) and chronic (greater than six months), are treated by physicians of many specialties, including neuromusculoskeletal medicine and osteopathic manipulative medicine (NMM/OMM), family medicine, orthopedics, neurology, rheumatology, and internal medicine. Non-physician health care practitioners including nurses, physical therapists, and occupational therapists also play a significant role in the patient care milieu. The spectrum of back pain is treated with a broad spectrum of pharmacological and non-pharmacological modalities.⁴

Acupuncture has an ancient and interesting history. It is enjoying a recent surge in interest, development, refinement, and research.⁵ Acupuncture is practiced around the world in a number of styles by a wide variety of health care practitioners for probably all known illnesses and injuries.⁵ Osteopathic (DO) and allopathic (MD) physicians of all specialties in America may integrate acupuncture into their practices.^{6,7} The National Institutes of Health (NIH) delivered their "Acupuncture, NIH Consensus Statement 1997", reviewing over 2300 research papers addressing the use of acupuncture for a wide variety of illnesses and injuries, including their recommendation for its use in low back pain.^{8,9} The World Health Organization (WHO) recognizes and encourages the use of acupuncture for a number of conditions, including low back pain.⁵

A computer-based literature search through large, online sources such as the National Library of Medicine, Medline, Ovid, PubMed, and DO-Online will reveal thousands of papers and books on acupuncture and as well as OMT, for a wide spectrum of conditions. There are a few references of combining the two or combining the two for low back pain.^{5,10-32} No studies have been done to determine if the sequence of OMT and acupuncture affect clinical outcomes.

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Methods

The author conducted a two-year retrospective case study (2004-2005) of 30 patients in his practice specializing in OMT and medical acupuncture. The patients all had acute, mechanical low back pain. Acute symptoms were defined as less than six months from onset. Most were seen within a few days of onset and all were former patients who had been treated by the author for various conditions in the past with OMT, or OMT and acupuncture combined. Patients were a mix of male (n = 18) and female (n = 12) with ages ranging from 22-84 years old (average 62.6). The risks and benefits of the OMT and acupuncture treatments were explained verbally to each patient before treatment. Each patient gave verbal consent to treatment.

All the patients presented with symptoms of acute low back pain including: localized lumbar pain, lumbar to hip region pain, pain radiating to the anterior pelvic area, numbness or tingling in the low back and/or pelvis, stiffness, and difficulties with various activities such as sitting, bending, standing, etc. Pain was measured on a verbal scale from 0-10, with 0 being no pain, and 10 feeling like the worst or most severe pain possible. This pain scale is a well-recognized and documented pain measurement tool.³³ Pain values were recorded on the first visit before treatment, and on the last visit after treatment. Some of the patients had no known predisposing or prior low back conditions, while others had chronic, low back conditions. Other medical conditions were not used as inclusion or exclusion criteria. No analgesic medications were prescribed and patients used their own discretion as to whether to use over the counter analgesic agents.

Diagnosis of acute, mechanical low back pain was made from the patients' history and physical exam with special emphasis on osteopathic palpation. Every patient was diagnosed using some combination of standard osteopathic methods. Visual and palpatory measurements of body position and/or motion were noted on the patients. Active and passive range of motion tests were performed. Somatic dysfunction was diagnosed in every patient, justifying the OMT.

Somatic dysfunction is defined as: "impaired or altered function of related components of the somatic (body framework) system: skeletal, arthrodial, and myofascial structures, and related vascular, lymphatic, and neural elements".¹ Somatic dysfunction may also be described in terms of visual and palpatory positional and motion aspects, using the simplified mnemonic "TART": "tissue texture abnormality, asymmetry, restriction of motion, and tenderness, any one of which must be present for the diagnosis".¹

Because there was a wide range of segmental dysfunctions, a variety of OMT techniques were used in the treatments. The author chose techniques and sequencing taking into consideration the many factors of the patients' conditions, responses, etc. The results of the combined OMT and acupuncture treatments were: relief of somatic dysfunction, improved ranges of motion, decreased pain, decreased swelling, normalized skin temperature, and relief of the patient's fears and anxieties. Every patient felt

some relief after each treatment session, with maximum relief felt and recorded after the fourth session.

Acupuncture was performed on every patient, either before or after OMT. Acupuncture points GV-4, BL-23 bilaterally, and BL-52 bilaterally (total of 5 points, also called "Ming Men") were chosen for their individual and combined known effects on the local sensory and motor signs and symptoms, as well as their energetic properties.^{5,34} Acupuncture was performed with sterile, single-use, stainless steel needles, 0.22 mm in diameter and 25 mm in length (Helio Medical Supplies, Inc., San Jose, CA). Needles were inserted 25 mm in depth, in manual tonification (i.e., pointing them in the direction of the flow of the meridian and turning them clockwise, eliciting a De Qi or sensation of energy response felt by the patient and physician), and were left in place for 10 minutes per session.

The first group of 15 patients treatment protocol was examination for 10 minutes, OMT for their low back pain for 10 minutes followed by the acupuncture protocol for 10 minutes. Total session time was 30 minutes each. The second group of 15 patients was examined then treated with acupuncture followed by OMT. The time allocations were the same. If any patient had other areas of somatic dysfunction he or she was gently treated in those areas while the acupuncture needles were in place. Treatment was administered so as not to disturb the needles or low back area in any way. Patients were treated once a week for four weeks.

Results

There were no adverse events from treatments. Eighteen were male (60%) and twelve were female (40%). The average age of the group that received OMT first was 60.6 years old (ranging from 28-80 years old). The average age of the group that received acupuncture first was 64.6 years old (ranging from 22-84 years old). For the OMT first group, the average pain score before the first treatment was 6.66, and then 0.933 after the last treatment. For the acupuncture first group, the average pain score before the first treatment was 6.46, and then 1.0 after the last treatment.

Group statistics for the OMT first group were: N = 15, Mean = 5.80, Standard Deviation = 0.676, and Standard Error Mean = 0.175. For the acupuncture first group the data were: N = 15, Mean = 5.53, Standard Deviation = 0.743, and Standard Error Mean = 0.192. P < 0.05. The Independent Samples Test/t-test for equality of means for the pain differences between the two groups showed a standard error difference of .259, and a 95% Confidence Interval of the difference as lower -.265 and upper .798. There was practically no difference between the outcomes of the two groups. See Tables 1-4 The statistical analysis was done using statistical software SPSS 11.0.

Discussion

Low Back Pain

Back pain can have many causes: neuromusculoskeletal, postural, scoliotic, arthritic, vascular, visceral, emotional, traumatic, post-surgical, infectious, cancerous, etc. Acute (less than six months) and chronic (greater than six months) back pain has plagued humanity since time immemorial. Back pain of all types, especially low back pain, affect millions of Americans,

account for a large proportion of doctor's visits, millions of dollars spent on treatment, and millions of work hours lost from productivity.^{1-4,35-38} Physicians representing many specialties, physical and occupational therapists, and other health care practitioners all play a role in the diagnosis and treatment of low back pain, using a wide spectrum of pharmacological and non-pharmacological treatment modalities.⁴ OMT and acupuncture, separately and together, are used, researched, and recommended for the treatment of low back pain.^{1-32,39-42,66-85}

Acute, mechanical, low back pain is usually due to some activity such as bending or lifting. It presents as various symptoms including localized lumbar, sacral, or hip pain, pain radiating from the lumbar to pelvic or lower extremity areas either posteriorly or anteriorly, muscle, fascial, tendonous, ligamentous and/or joint pains, strains, or sprains, stiffness, numbness or tingling in the low back or pelvis, and/or difficulties or dysfunction with activities such as sitting, standing, bending, etc.

Evaluation of back pain is done in many ways including: lumbar, sacral, and pelvic palpation testing for somatic dysfunction, visual assessment of the lumbar, sacral, pelvic, and lower extremities for asymmetry, the anterior spinal compression spring test, spinal lumbosacral spring test, lumbar and pelvic ranges of motion, Thomas test for psoas muscle shortening, sensory, motor, and reflex testing of the areas innervated by the lumbar and sacral nerve roots (patellar L4-5 reflex, Achilles S1-2 reflex, lower extremity dermatomes, etc.), and muscle testing for strength, range of motion, and tender points (the reader is referred to chapter 50 of *Foundations for Osteopathic Medicine* for an excellent and complete review and explanation of these tests).¹

About fifty OMT techniques are listed in the glossary of the Osteopathic profession's standard textbook *Foundations for Osteopathic Medicine*, and the author used mainly two of them to treat somatic dysfunctions: myofascial release and strain-counterstrain. The techniques were chosen after visual and palpation diagnosis, as well as taking into consideration the many factors of the patients' history, conditions, pain levels, and response to past treatment.

Osteopathic Manipulative Medicine

Osteopathic manipulative treatment (OMT) – holistic osteopathic palpation diagnosis and treatment – is indicated for most illnesses and injuries.¹ OMT techniques, done by Doctors of Osteopathy (DO), cover a broad range of treatments to aid and enhance in the treatment of every part of the body, mind, and soul, its solids, liquids, gases, and energies. The techniques vary with the skills, knowledge, background, and temperament of the practicing osteopathic physician. Skilled and imaginative practitioners may combine and modify techniques in response to their needs as well as the needs of their patients. The holistic osteopathic philosophy and principles allow and encourage individuality, inventiveness, and inclusiveness. Osteopathic techniques are easily integrated with those from other traditions.

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O.M.T. First Treatment Group				
Patient #	Sex	Age (M/F)	Pain Before (0-10)	Pain After 0-10)
1	F	74	6	1
2	M	80	6	1
3	M	36	5	0
4	F	30	8	1
5	M	50	7	2
6	F	52	7	1
7	M	28	7	1
8	M	79	6	1
9	F	60	5	0
10	M	73	7	0
11	M	77	8	2
12	M	49	6	0
13	M	75	8	2
14	F	76	7	1
15	F	71	7	1
Average Pain Scale			6.66	0.93
Average Age		60.6		
Acupuncture First Treatment Group				
16	M	67	5	0
17	F	72	6	1
18	M	48	7	1
19	M	70	7	1
20	F	78	7	2
21	M	44	6	0
22	F	36	7	1
23	F	65	8	2
24	M	74	5	0
25	M	75	7	0
26	M	80	5	1
27	M	22	7	2
28	M	78	8	2
29	F	76	5	1
30	F	84	7	1
Average Pain Scale			6.46	1.0
Average Age		64.6		

Table 2.
Independent Samples Test

t-test for Equality of Means

		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Pain Difference	Equal variances assumed	.259	-.265	.798
	Equal variances assumed	.259	-.265	.798

Table 3.
Independent Samples Test

t-test for Equality of Means

		t	df	Sig. (2-tailed)	Mean Difference
Pain Difference	Equal variances assumed	1.028	28	.313	.27
	Equal variances assumed	1.028	27.753	.313	.27

df = degrees of freedom
Sig. = significance

Table 4. INDEPENDENT SAMPLES TEST		LEVENE'S TEST FOR EQUALITY OF VARIANCES	
		F	SIG.
GROUP			
<u>Pain Difference</u>	Equal variances assumed	.516	.479
	Equal variances not assumed		

F= a robust measure of homogeneity of variance
Sig.=significance

Any technique may take seconds to minutes. Medicines may be added at any time. Acupuncture on any region at any time during the treatment may also be combined successfully.^{5-6,10-32}

Osteopathic manipulative medicine (OMM) finds its efficacy in its addressing of the principles of the interrelatedness of form and function, anatomy and physiology. Anatomy is said to be the foundation of medicine. "O Lord! Give me more anatomy each day I live..." said Dr. Still.⁴³ An understanding

of anatomy, physiology (and neurophysiology in particular), and biomechanics explains many of the osteopathic principles and treatments. The unifying anatomical and physiological properties of fascia provide for much of OMM's diagnostic and treatment success. Fascia has many properties and functions as it pervades practically everywhere throughout the body. Fascia provides structure, supporting, dividing, connecting, covering, maintaining, nourishing, and communicating with all parts

of the body. It has biochemical, biomechanical, bioelectrical (piezoelectrical), and communicating properties, which define its many functions, which can be affected by dysfunction of any kind, anywhere. These, in turn, may be treated by virtue of fascia's many properties and pervasive presence.⁴⁴ It is this author's personal experience that, because of fascia's ubiquitous presence and properties, any one part of the body may be used to diagnose and treat any other part of the body. This vitally important holistic concept is emphasized as well in acupuncture. Dr. Still gave fascia an important and prominent part in his writings, philosophy, and techniques.⁴³

Pain (nociceptive and neuropathic) mechanisms, as well as various reflexes (facilitated reflexes, inappropriate proprioceptor reflexes, etc.) also help determine patient signs and symptoms, and subsequent treatments. Nerves do more than simply convey signals over their length. They also contain and transport trophic factors responsible for homeostasis, growth, and maintenance of their destination organs. Various reflexes have been identified throughout the body, including viscerosomatic (from internal organs to the more external neuromusculoskeletal regions), somatovisceral (from external to internal), viscerovisceral (internal to internal), and somatosomatic (external to external).^{1,45}

Every cell has an electric charge, multiplied in effect through the many organs of the body. James Oschman, PhD writes and speaks specifically about osteopathy and OMT, and describes in detail the consequences of alignment of the body's collagenous networks for the energy field of the body. He describes magnetic fluxes through the vertebral column and surrounding tissues which give rise to the overall field of the body, as well as the effects of derangements of the parallel collagenous fibers, which reduce the total magnetic flux through the system and reduce the overall energy field.^{46,47} Osteopathic physician/authors have also contributed to the subject.^{44,48-53} Another new and novel concept published in 2005 is that OMT may be mediated by the endocannabinoid system.⁵⁴

Myofascial release techniques combine several types of OMT, including cranial osteopathy, visceral manipulation, strain counterstrain, facilitated positional release, etc., and can be combined with any form of OMT. Myofascial release techniques are directed to all the soft tissues of the body, and can be basically divided into either direct (to or through a barrier/restriction) or indirect (away from the barrier/restriction). Myofascial release techniques may be used for virtually any diagnosis of somatic dysfunction, either alone or in combination with other manipulative techniques. The techniques may be passive (patient relaxed and not assisting) or active (physician and patient both actively participate) or both.¹ The main object of the technique (and perhaps all manual techniques) is to affect or enhance motion. Other goals and physiological principles of treatment have been summarized.^{55,56} Strain-Counterstrain (or simply counterstrain) is an indirect, myofascial release technique developed by Lawrence H. Jones, DO, FAAO, in the 1960s.⁵⁷⁻⁶⁵

Acupuncture

Acupuncture is being rediscovered in America and flourishing with a momentum matched only by its efficacy. Acupuncture is both old and new. It has been found in various forms in various cultures for thousands of years, and new discoveries about

its mechanisms of action and ability to treat most illnesses and injuries surface every day. Professional and popular books, journals and research papers in every language are just the tip of the iceberg promoting and explaining this phenomenon. Where did it come from and how did it get here?

Acupuncture's long and winding road began thousands of years ago when ancient peoples around the world began using sharp objects to treat their ailments. Stone needles were invented in China around 4000 B.C. The most important written records in China began with the *Yellow Emperor's Classic of Internal Diseases* (from about 500-200 B.C.), which formed the basis for the hundreds of Chinese textbooks on the subject that followed over the centuries.⁵

The ancient Egyptian papyrus scrolls from 1550 B.C. discuss lines of energy throughout the body, which we now call meridians. The Ayurvedic physicians in India used acupuncture for thousands of years. Various forms of acupuncture, using simple sharp objects, were practiced by such diverse groups and cultures as South African Bantu tribes, Arabs in North Africa and Arabia, Eskimos (Inuit) and South American natives. Chinese acupuncture concepts spread all over Asia, including and especially in Japan, Korea, and Southeast Asian countries, where it blended with and was shaped by the local populations.⁵

Since the 16th century, acupuncture and acupuncture texts were translated and brought to Europe, especially France and Germany, where it is taught today in many modern medical schools as part of the curriculum. Again, acupuncture is refined and modified with each culture, even in modern Europe. The French have provided some of the most important research and advances in ear acupuncture, called auriculotherapy or auricular medicine, where the entire body can be diagnosed and treated through the ear, using either tiny needles or electrical stimulation.⁵

Acupuncture came from Europe to the Americas with the early colonists. Dr. Franklin Bache, Benjamin Franklin's great grandson, wrote the first medical acupuncture article in the U.S. in 1825, entitled "Memoirs on Acupuncture" and translated French acupuncture textbooks into English. Dr. Edward Warren's 1863 medical and surgical text discussed the use of acupuncture and acupressure. Acupuncture was used during the U.S. Civil War. Sir William Osler, one of the most famous physicians of the 19th century, in his 1892 textbook, *Principles and Practice of Medicine*, recommended acupuncture for the treatment of many conditions, especially back pain and sciatica. He wrote, "For lumbago, acupuncture is, in acute cases, the most efficient treatment".⁵

Acupuncture research has expanded exponentially in the last 50 years, mostly in China, Japan, Europe, America, and Canada. Tens of thousands of research articles and books have been printed in dozens of languages. Almost all known diseases, every organ system in the body as well as psychiatric conditions are affected by acupuncture and have all been researched using acupuncture. The many acupuncture systems with their multiple effects help describe a working model of a multisystem information network all contributing to the explanations of the various aspects of acupuncture.⁵

Acupuncture points as seen under the microscope are found to be vertical columns with the tissue, myelinated and unmyelinated

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nerves, lymph, and blood vessels concentrated, woven, and organized in a distinctive fashion, with a thinning of the epidermis at the acupuncture point.⁵ Acupuncture points have a lowered electrical resistance, allowing for increased electrical conductance along fascial planes in the body. Electrical resistance to a current passed between acupuncture points has been shown to be consistently lower (i.e., greater conductance) than resistance between nearby control points.⁵ In fact, transmission of acupuncture electrical activity is not entirely dependent on an intact nervous system, but rather moisture and electrolytes appear to be the necessary vectors between points.⁵ Fascia has been shown to mechanically couple with the acupuncture needle, possibly delivering a mechanical signal into the tissue.^{66,67} Technetium 99, a radioactive tracer, when injected into acupuncture points, diffuses in fascial trajectories which topographically correspond to classically described acupuncture pathways or meridians, giving substantial and modern proof of these ancient phenomena. When technetium 99 was injected in nonacupuncture sites, no linear tracing pattern was observed. Stimulation of the injected acupuncture points with a needle, electricity, or helium-neon laser all increased the migration rate along the meridian trajectories.⁵ Fascia is electron-rich crystal lattice, allowing electron transfer and bioelectric fields to be transduced throughout the body, making an ideal semiconductive matrix and communicating network that conveys biochemical and bioelectrical information throughout the body, from a microscopic to a macroscopic level, throughout the fascial planes/meridians. The bioelectrical properties of acupuncture points in particular and fascia in general help provide a reasonable explanation for the meridians or acupuncture energy pathways. Researchers have described acupuncture points as penetrations of nerve-vessel bundles through perforations in the fascia.⁵ It should not be surprising that the Chinese term for acupuncture point – **xue wei** – means “hole between the fascia”, thus underscoring the importance of fascia.

Several studies have been done, and correlations have been made between acupuncture points and trigger points (71%), tender points (virtually 100% since any acupuncture point can be tender during a disease process, these are called “ah shi” or “ouch” points in Chinese), strain-counterstrain points (80%), and Chapman’s points (60%).²⁷ A recent osteopathic article on trigger points suggests that trigger points (and possibly acupuncture points) are evoked by abnormal depolarization of motor end plates.³¹ Trigger points have always responded to multiple treatment techniques, including dry needling (acupuncture) and OMT.⁶⁸⁻⁷⁰

Acupuncture signals modulate the relative contrast between background neuronal activity and pain signals, predominantly with the endogenous opioids, though major neurotransmitters are all involved and extensively documented at various levels: serotonin, norepinephrine, substance P, gamma aminobutyric acid, dopamine, adrenocorticotrophic hormone (ACTH), beta-endorphin, methionine-enkephalin, leucine-enkephalin, dynorphins, histamine, bradykinin, prostaglandins PGE2 and PGF2 alpha, angiotensin, vasoactive intestinal peptide, and cholecystokinin.⁵

Bioelectromagnetic hypotheses add possible explanations to acupuncture’s many mechanisms of action. William Tiller, PhD, Professor Emeritus of the Department of Materials Science

at Stanford University, California, speculates that there seems to be a driving electrical field pushing positive ions to the surface of the skin, organized electrical fields from internal organs, as well as an electromagnetic field along the acupuncture pathways (meridians), all combining and creating an additional induced bioelectrical field at the skin’s surface.⁵ The standing wave superposition hypothesis proposes that the body’s many electrically charged ions, electrolytes, and proteins all create bioelectrical fields pulsing through the body. The body contains many charged oscillators, emitting electromagnetic radiation of various wavelengths (as per the discussion above measuring organ electrical output with the ECG, EEG, etc.). These waves travel throughout the body, subject to decay, reflection and refraction at various boundaries of various densities or states of health (bones, muscles, etc.). The accumulation of these waves creates interference patterns, with the fascia and unique acupuncture point morphology with its increased electrical conductance, creating, channeling, and forming these cumulative wave amplitudes at the sites we call acupuncture points. These bioelectrical wave patterns from all over the body also accumulate at certain areas of the body to form somatotopic reflex patterns such as at the ear (ear acupuncture or auriculotherapy) and other sites (this author has counted some 25 such holographic microsystem sites throughout the body). The propagation of energy signals along the neuro-myo-fascial acupuncture pathways would occur without loss of charge because the body’s metabolic energy constantly regenerates the standing fields and waves.⁵ The bioenergetic fields and waves might, in fact, fluctuate with corresponding states of health and disease or somatic dysfunction, reflecting physical, emotional, and/or energetic blockages anywhere in the system and their consequent treatment. Sensitive practitioners of any tradition can sense these changes and diagnose and treat accordingly.⁵

A number of explanations, researches, and hypotheses have arisen over time to provide and explain some aspect of acupuncture’s many mechanisms of action, and a few have been provided here. Each of these explanations provides a piece to the larger puzzle of its multisystem model, and each will create further investigation. These include:

- Fascia as bioelectrical conductor
- Distinctive neuro-hemo-lymphatic point morphology
- Bioelectrical transmission of signals
- Biochemical transmission and signaling of neurotransmitters, endorphins, enkephalins, hormones, and immunomodulators
- Peripheral and central nervous system cascades
- Diffuse noxious inhibitory control (DNIC) system modulation
- Increased vasodilation, blood flow, and temperature
- Homeostatic control of blood glucose (increasing blood glucose levels if they are hypoglycemic, and decreasing the levels if they are hyperglycemic)
- Reducing serum triglycerides and cholesterol
- Immune system modulation (increasing lymphocyte blastogenesis, increased phagocytic and fibrinolytic activity, increased beta and gamma globulins)

- Vibrational resonance
- Hologrammatic interrelatedness of the body
- Enhancing the body's resistance to stresses through its autonomic and immune effects (Dr. Hans Selye, the pioneer researcher of stress, suggested acupuncture for these reasons)
- Microtubules and cytoskeleton bioelectrical and biochemical transmission
- Bioelectromagnetic hypotheses
- Thermo-electrical phenomena: when an acupuncture needle is inserted into the body, the tip is warmer than the handle, creating an electrical and temperature gradient and flow of electrons.⁵

Most ancient systems have named the effects of acupuncture by basically describing it as an energy phenomenon. Every language or tradition has devised names for the energy, the most frequently used being "chi" or "qi" (Chinese) or "ki" (Japanese). More modern practitioners have used the terms this author tends to use, such as bioenergy or bioelectrical energy, etc. The Asian acupuncturists describe various types of chi or energy, but the generic "energy" or "bioenergy", etc., is sufficient for the purposes of this paper. These generic terms are easier to use when integrating acupuncture into modern medical usages.⁵

The meridians or bioenergetic pathways have been called by many names over time. There are several circuits of meridians or meridian systems in the body, some paired left and right (mirror images of each other), some unpaired, and some as combinations of the others. A meridian forms a number of bioenergetic circuits and subcircuits through fascial planes, and thus develops from the embryo.⁵

Acupuncture points as well as their names have a long and interesting history. It is probably safe to assume that most acupuncture points and treatments were first discovered serendipitously. The Chinese have poetically and elaborately named and described each acupuncture point extensively, sometimes writing pages for a single point and its effects. There are over 300 traditional points on the meridians, with several hundred more not on the meridians. The points were originally named. The numbering system now used is a recent innovation. New acupuncture points and their effects are being discovered every year. Both old and new points are used in new combinations to treat old as well as modern diseases.⁵

Acupuncture needles have evolved over time. Acupuncture needles come in a variety of lengths and diameters, ranging from lengths of less than a centimeter to several centimeters, and diameters from .2 to .4 millimeters in general. Needles may be used for most areas of the body, thus determining their size, from tiny needles in the shallow surface of the ear to large needles in the large muscles of the back or legs. Needles may be inserted and left in place anywhere from seconds to minutes (sometimes even hours or days), depending on the condition/patient, with a rough average probably being 10-20 minutes. Needles may be manipulated, stimulated with magnets or electricity of varying frequencies and amps, positive or negative charges (by attaching an electric clip to the needle handle), or various herbal, homeopathic, or medicinal preparations may be attached to the needle

handle.⁵ The variety and combinations of acupuncture points, meridians and needling techniques are virtually endless. And combined with other healing modalities, especially OMT, the possibilities for treating and effectiveness are that much greater. The Food and Drug Administration (F.D.A.) in 1996 classified acupuncture needles as medical devices.

The three acupuncture points used in this study are described below.

- GV-4 (Governing Vessel #4). Its Chinese name "Ming Men" is approximately translated as "Gate of Life". GV-4 is located in the posterior midline depression inferior to the spinous process of the 2nd lumbar vertebra (L2). It is used frequently with BL-23 and BL-52 bilaterally (these total of five needles are called "Ming Men"), reinforces and strengthens the lumbar region and back in general.³⁴
- BL-23 (Bladder #23). Its Chinese name "Shen Shu" is translated as "Kidney Shu", the "Shu" points being a series of 12 points on the Bladder meridian on the back which affect each of the 12 major or Principal meridian/organ systems. BL-23 is 1 ½ cun (a Chinese term referring to body "inches"), or two fingers' width bilateral from GV-4.³⁴
- BL-52 (Bladder #52). Its Chinese name "Zhi Shi" is approximately translated as "Will Chamber". BL-52 is located 3 cun (4 fingers' breadth) lateral to the inferior border of the spinous process of L2, thus 3 cun bilaterally from GV-4 or 1 ½ cun from BL-23.³⁴

Together these five points, the midline GV-4 and the bilateral BL-23 and BL-52, are a special combination, greater than the sum of their parts, called **Ming Men**. A careful reading of acupuncture textbooks reveals that these points are quite strong, affect the body and mind in many powerful and profound ways, and address low back pain. As powerful and versatile as this acupuncture combination is, there were no English language articles found through an online literature search on the use of Ming Men. The Helms Institute course of Medical Acupuncture for physicians, sponsored through U.C.L.A.'s and Stanford University's medical schools recommends the use of Ming Men. Dr. Helms' course textbooks *Acupuncture Energetics, A Clinical Approach for Physicians* and *Point Locations and Functions*^{5,6,34} also recommends Ming Men. This author is impressed by its efficacy for many conditions, and has used it often. The combined effects of reducing back pain and energizing the usually energy-drained patient more than recommend and justify its use. It may be combined with other acupuncture points or protocols for added effects.

There are a number of major and minor acupuncture styles, philosophies, and techniques evolving throughout the world. These include Traditional Chinese Medicine (TCM), many Japanese styles such as Toyo Hari and Ryodoraku, Yamamoto New Scalp Acupuncture, Five Element, Auriculotherapy and Auricular Medicine (ear acupuncture), Korean hand acupuncture, French energetic acupuncture, Percutaneous Electrical

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Nerve Stimulation (PENS), periosteal stimulation, and a number of acupuncture microsystems (5). As mentioned above, it is hypothesized that some combination or interaction of various wave fields and/or hologramatic patterns may be responsible for forming the many microsystems within the body (5).

The National Institutes of Health is spending millions of dollars on acupuncture research. It convened a consensus conference in 1997 on acupuncture, reviewing over 2300 research papers on acupuncture, determining that there is clear evidence for some uses of acupuncture, and is appropriate as part of comprehensive care in many medical conditions. Chairperson, Dr. David J. Ramsay (President of the University of Maryland) stated, "There are a number of situations where it really does, in fact, work – the evidence is very clear-cut. It has few side effects and is less invasive than many other things we do. It is time to take it seriously."⁷¹ The World Health Organization recognizes and encourages the use of acupuncture for a variety of conditions, as do mainstream medical organizations like the American Osteopathic Association:

"Whereas, Osteopathic Medicine is not limited in the use of any beneficial therapeutic or diagnostic modality; now, therefore, be it resolved, that the American Osteopathic Association recognizes that acupuncture may be a part of the armamentarium of qualified and licensed physicians."⁷²

Literature Review of Combined OMT and Acupuncture

A computer-based English literature search through several large sources, including the National Library of Medicine, Ovid, PubMed, Medline, and DO-Online reveals thousands of papers on acupuncture, OMT and other manipulative modalities, and recommends these as separate treatments for patients/conditions. Only a very small number of papers, books, and lectures have been written specifically combining OMT and acupuncture. They will be listed here in chronological order with brief comments.

- The May 1972 issue of *The D.O.* contained four articles on the subject of acupuncture, only the second and third recommended combining OMT and acupuncture:
 1. Chinese Medicine: a Firsthand View (an interview with Kenneth Riland, DO by Barbara Peterson);¹⁰
 2. How One DO Uses Acupuncture (an interview with Harold S. Saita, DO, by George W. Northrup, DO);¹¹
 3. DO Demonstrates Acupuncture on National TV, Teaches at Rehabilitation Conference (a report on Henry Nemerof, D.O., by Barbara Peterson);¹²
 4. Acupuncture: Notes from Written Sources (an article by Barbara Peterson).¹³

The first article, an interview with Kenneth Riland, DO, was in response to President Richard Nixon's 1972 visit to and establishing diplomatic relations with the People's Republic of China. Dr. Riland was President Nixon's personal physician, and while accompanying him to China, was invited to observe acupuncture treatments, including surgery and anesthesia, which totally amazed him. Dr. Riland, an avid supporter and practitioner of OMT, knew nothing about acupuncture prior to this visit. This visit opened relations between the U.S. and China, and sparked the new renaissance of acupuncture in the States.

The second article is an interview with Harold S. Saita, DO, who explains in detail how he treated patients with acupuncture and combined it with OMT. He observed that there was a correlation between acupuncture points, Chapman's points and trigger points.

The third article reported Henry Nemerof, DO, demonstrating acupuncture that same year on the Mike Douglas show. Dr. Nemerof, a physiatrist, had lectured on acupuncture at the American Osteopathic College of Rehabilitation Medicine conference. He experimented with acupuncture and electrical currents, sound waves and vibro-massage. He combined OMT with acupuncture.

The last article was a review and discussion on what little was known at the time of acupuncture, including comments by Dr. I. M. Korr: "Acupuncture appears to have a neural basis, but it seems to involve pathways not yet known." These four articles together are a little piece of history, for they are the beginnings of the Osteopathic profession's exploration of the "new" world of acupuncture and integrating it into their own.

The next seven articles are out of print:

- Clinical Experiences with Acupuncture, by H. Nemerof, DO¹⁴
- Acupuncture in the Service of Osteopathic Medicine: A Pathway to Comprehensive Patient Management, by H. Nemerof, DO¹⁵
- Modern Scientific Medical Acupuncture, by H.S. Saita, DO¹⁶
- Acupuncture – A Measured View, by D.H. Mills¹⁷
- Acupuncture: Its Status Today, by H.A. Ross and H. Nemerof, DO¹⁸
- American Acupuncture, Editorial¹⁹
- Acupuncture in the Management of Headache, by H. Nemerof, DO²⁰
- Trigger Points vs. Acupuncture Points, by Louis Vanderschot, DO.²¹ This was originally presented to the American College of Sclerotherapy at the 1975 AOA Convention. He correlated acupuncture points with trigger points, and recommended combining OMT, acupuncture, and sclerotherapy.
- Correspondences Between Chapman's Reflexes and Acupuncture Points, by John E. Upledger, DO.²² This paper correlates 48 Chapman's points with a number of acupuncture points, as well as "Associated Points" (now called "Shu" points) on the back with their paravertebral, segmental, and visceral relationships. He mentions his combination of treating acupuncture points with Chapman's reflex points.
- Osteopathic Medicine and Traditional Chinese Medicine, by John E. Upledger, DO, FAAO.²³ This brief paper describes acupuncture concepts, and describes several ways in which acupuncture and osteopathic philosophies and techniques complement one another. "Their philosophies are based on widely divergent cultural experiences, but share an underlying holistic approach to man as the maker of his own medicine... In my experience, the two schools of medicine complement each other well."²³
- Integration of Acupuncture and Manipulation, by John E.

Upledger, DO, FAAO.²⁴ Indications and complications of acupuncture are discussed, then several conditions are addressed, using small 25 or 27 gauge disposable hypodermic needles instead of acupuncture needles, and combining all with OMT: acute low back pain, sciatica, acute sacroiliac dysfunction, specific intervertebral motion restrictions, acute intercostal neuralgia and herpes zoster, mobilization of the diaphragm, relaxation of the cervical musculature, and headache.

- Management of Autogenic Headache, by John E. Upledger, DO, FAAO, and Jon D. Vredevoogd.²⁵ This article discusses combining cranial techniques with acupuncture.
- Acupuncture: A Comprehensive Text, by John O'Connor and Dan Bensky, DO.²⁶ This large (741 pages) textbook, coauthored by an osteopathic physician/acupuncturist, has become a classic in acupuncture literature since 1981. OMT is recommended with acupuncture for several conditions: cerebrovascular accident (CVA), headache, chronic low back pain, and stiff neck.
- Acupuncture Energetics, A Clinical Approach for Physicians, by Joseph M. Helms, MD.⁵ This is the premier acupuncture textbook for physicians (757 pages), and this author has quoted from it extensively in this paper.⁵ Dr. Helms has traveled all around the world for thirty plus years learning and then teaching acupuncture. Probably more than any other physician, he is responsible for introducing and teaching medical acupuncture in the USA, as well as founding the American Academy of Medical Acupuncture. He recommends the combination of OMT (especially cranial osteopathy) with medical acupuncture, and has devoted a subchapter in his textbook to this topic.
- Acupuncture and Osteopathy, by David E. Teitelbaum, DO.²⁷ This lecture was given at the 1999 American Academy of Osteopathy Convocation in St. Louis, MO. Dr. Teitelbaum delineated the many similarities between OMT and acupuncture, philosophically and in practice, correlating acupuncture points with Chapman's Points, Travell's trigger points, and Jones' Strain/Counterstrain points. He also touched upon the efficaciousness of OMT and acupuncture treatments of energetic, psychological, and spiritual conditions.
- Integrating Acupuncture and Manual Medicine, by Jay Sandweiss, DO, and Dan Bensky, DO.²⁸ This paper discusses the similarities and differences between manual medicine (and OMT) and acupuncture. It shows how putting them together synergistically complements their therapeutic efficacy.
- Osteopathic Vertebral Manipulation and Acupuncture Treatment Using Front Mu and Back Shu Points, by David E. Teitelbaum, DO.²⁹ An anatomic analysis of Mu and Shu acupuncture points, which are used to affect visceral function, proposes that they have a similar mechanism of action to OMT in alleviating hypersympathetic viscerosomatic reflexes.
- Acupuncture and Osteopathic Manipulative Medicine for Ulnar Neuropathy, by William H. Stager, DO, MS.³⁰ A case report describing combining OMT and acupuncture on a patient who had accidentally severed his left ulnar

nerve at the elbow. The nerve was reattached a week after the accident but the expectation for recovery by the surgeon was extremely low. The patient has regained most of his strength and sensation over time with combined OMT and acupuncture.

- Travell Trigger Points – Molecular and Osteopathic Perspectives, by John M. McPartland, DO, MS.³¹ This paper goes into great detail on trigger points and the latest research and theories of origin, perpetuation, and treatment, including OMT and acupuncture.
- Yamamoto New Scalp Acupuncture (YNSA) Acupoint Frequency in the Treatment of Herniated Lumbar Disc, Lumbar Radiculopathy, and Mechanical Low Back Pain, by Richard A. Feely, DO, FAAO, FCA, FAAMA.³² YNSA is a fascinating, new (since 1973), and complete acupuncture micro system. All the treatment points are located on the head and face. This study of 115 patients concluded that YNSA and OMT for low back pain resulted in immediate relief with a minimum of needles.

As further examples of some of the hundreds of papers and books written on the separate subjects of OMT and acupuncture, two textbooks and eleven papers are listed in the reference section for the interested reader.⁷³⁻⁸⁵

Conclusion

Osteopathic manipulative treatment (OMT) and acupuncture can be used to treat patients with acute mechanical low back pain. The two modalities can be used separately or combined together for effective results. To date, there have not been any studies to determine if order of treatment makes any difference in outcome. The results of this small retrospective case study reveal that the order of treatment did not result in any significant difference in outcome of pain relief.

An overview and explanation of OMT and acupuncture, including some of the latest scientific research and theories have been discussed. They share a great deal in their holistic, inclusive philosophies, and their many and similar mechanisms of action, along with their central theme of the all-pervading fascia and its many biomechanical, biochemical, and bioelectrical properties. Palpatory diagnosis and treatment are also central to both systems, from a physical to an energetic perspective.

Limitations of this study include:

It has a small number of subjects.³⁰

It is a retrospective study.

The author had previously treated all of the patients for various conditions, so they could have had expectations that could account for a possible placebo effect.

The osteopathic diagnosis was individualized to the patient.

The osteopathic manipulative treatments were similar but not identical.

It is hoped that this paper will lead to future studies addressing such issues as: do OMT and acupuncture impact frequency, severity, and/or duration of a condition, costs, etc.

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Combining osteopathic manipulative medicine and acupuncture is rewarding for both patient and physician, providing a contemporary, integrative, interdisciplinary approach to an ever-broadening scope of complete patient care.

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CME QUIZ

The purpose of the quiz found on the next page is to provide a convenient means of self-assessment for your reading of the scientific content in the "Osteopathic Manipulative Medicine and Acupuncture Combined: A Retrospective case study to determine if order of treatment makes a difference in outcome for acute mechanical low back pain" by William H. Stager, DO, FAAO. Answer each of the questions listed. The correct answers will be published in the March 2008 issue of the AAOJ.

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Authors: William H. Stager, DO, FAAO

Publication: *Journal of the American Academy of Osteopathy*, Volume 17, No. 4, December 2007, pp 11-21

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Complete the quiz to the right and mail to the AAO. The AAO will forward your completed test results to the AAO. You must have a 70% accuracy in order to receive CME credits.

*Answer sheet to
December 2007
AAOJ CME quiz
will appear in the
March 2008 issue.*

September 2007
AAOJ CME
quiz answers:
1. D
2. F
3. A
4. F
5. F
6. F

CME QUIZ

1. Osteopathic and allopathic physicians of all specialties in America may integrate acupuncture into their practices.
 - a. True
 - b. False

2. The National Institutes of Health, the World Health Organization, and the American Osteopathic Organization all recognize that acupuncture may be used by physicians for a variety of conditions.
 - a. True
 - b. False

3. Symptoms of acute low back pain may include:
 - a. lumbar to hip region pain.
 - b. pain radiating to the anterior pelvic area.
 - c. numbness or tingling in the low back and/or pelvis.
 - d. a and b only.
 - e. all of the above.

4. Nerves do more than simply convey signals across their lengths, they also contain and transport trophic factors responsible for homeostasis, growth, and maintenance of their destination organs.
 - a. True
 - b. False

5. Acupuncture has been practiced in the USA for at least two hundred years, and was used during the U.S. Civil War.
 - f. True
 - g. False

6. Acupuncture points correlate with the following:
 - __a. Trigger points.
 - __b. Tender points.
 - __c. Strain-Counterstrain points.
 - __d. Chapman's points .
 - __e. All of the above.

7. Acupuncture needles:
 - a. Range in lengths from less than a centimeter to several centimeters.
 - b. Range in diameters from .2 to .4 millimeters in general.
 - c. May be left in place from seconds to hours or even days.
 - d. Are classified by the FDA as medical devices.
 - e. All of the above.

Attitudes and Confidence Levels of Second-Year Osteopathic Medical Students towards Osteopathic Manipulative Medicine

Thomas A. Quinn, Thomas J. Fotopoulos, and Mark A. Best

Abstract

In the late twentieth and early twenty-first centuries, osteopathic medicine has become the fastest growing segment of the healthcare profession in the United States. Many new osteopathic medical colleges have been established and more will be opening in the near future. Are we sacrificing quality for quantity? Will these students become “true” osteopathic physicians dedicated to the principles of the profession?

In an effort to answer these questions, a blinded survey was taken of the inaugural class of LECOM/Bradenton, one of these new osteopathic colleges. As the class of 2008 approached the end of their second year of study, they were questioned about their confidence level in performing OMM, but more importantly, they were asked about their intention of using OMM in their medical practice. This survey showed that almost half (49%) of the students were undecided if they would or would not use OMM. The major determining factor for these ambivalent students will be their experiences during their third and fourth year clinical rotations and during their post-graduate programs. If we wish to see these students become “true” osteopathic physicians dedicated to the principles of the profession; it is critical that they experience DO role models, who incorporate osteopathic principles into their medical practices during the clinical phase of their training.

Introduction

Lake Erie College of Osteopathic Medicine at Bradenton (LECOM-Bradenton) is a new college that opened in September 2004, and although many osteopathic colleges have a Problem Based Learning (PBL) pathway, LECOM-Bradenton offers this PBL pathway exclusively. With no upper classmen to imitate or confide in, the inaugural class of 2008, as with all inaugural classes of new schools, was left to their own devices. Each student does have an assigned faculty advisor who meets with the student monthly or more frequently as needed.

Method

On the Ides of March, 2006, as their second year of studies was coming to a close, a survey was conducted of this inaugural class. The purpose was to determine their attitudes towards and intentions of using OMM in their clinical practices as well as their confidence levels in treating patients with OMM. When asking the students about their confidence level, the survey separated High Velocity Low Amplitude (HVLA) from other non-HVLA techniques. One hundred forty two students responded to the survey. The students were instructed not to put their name or any other identifying marks on the survey to assure that we would receive honest answers and not respond in a socially desirable manner as to what they felt the school wanted to hear.

Survey results

The first question asked them to evaluate their confidence level, as a second-year student, in performing HVLA OMM. Twenty-nine students answered that they had a low level of confidence in doing HVLA, 87 students had a moderate level of confidence and 26 had a high level of confidence. (see chart #1)

Of those 29 students who had a low level of confidence in performing HVLA, 14 felt that the reason for their lack of confidence was that they did not have the manual dexterity to perform HVLA and nine felt that the cause was that they did not practice sufficiently between OMM labs. Eight students expressed concern about hurting a patient. It is likely that if these students had practiced more and improved their proficiency

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LECOM, Bradenton, inaugural Class of 2008	
Number of students in the class of 2008	151
Number of students responding to survey	142
Average age of class	28
Percent of Florida students	33%
Percent of non-Florida students	67%
Total number of states represented	35
Percentage of minority students	32%
Number of students with advanced degrees	22

Table #1: Lake Eric College of Osteopathic Medicine, Bradenton, inaugural class of 2008.

in performing HVLA they could have overcome their “fear of hurting someone”. (see chart #2)

Of the 87 students who had a moderate level of confidence in performing HVLA, 39 stated that they had not practiced sufficiently between OMM labs and 28 felt that they might hurt someone. Thirteen felt that they did not have the manual dexterity needed to adequately perform HVLA. (see chart #3)

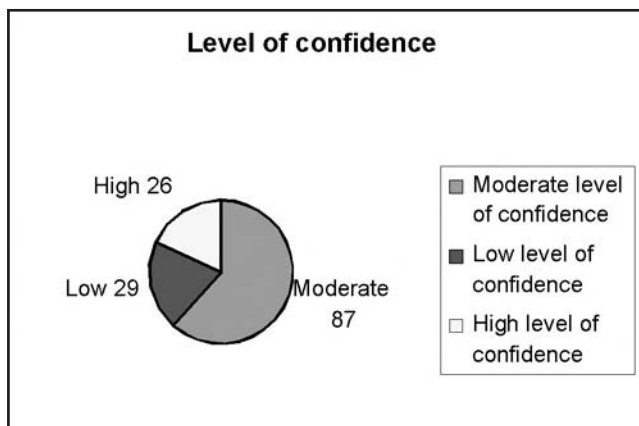


Chart #1: Level of confidence for students doing HVLA OMM

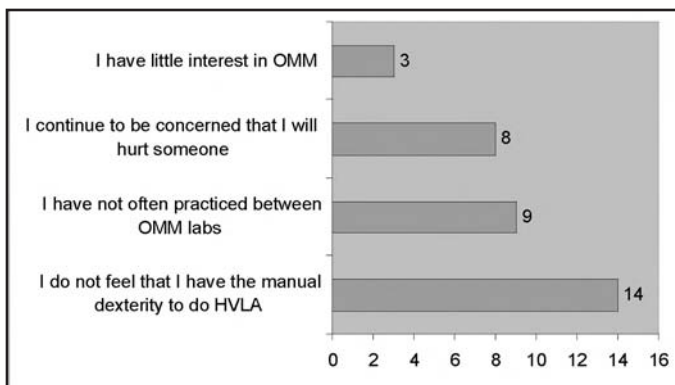


Chart #2: Reasons for the 29 students with “low” level of confidence in doing HVLA. Some students offered more than one reason.

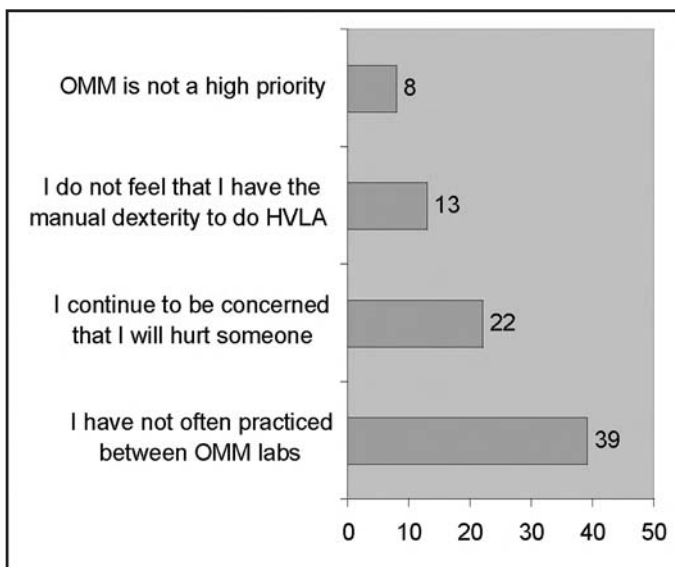


Chart #3: Reasons for the 87 students with “moderate” level of confidence in doing HVLA. Some students did not mark a reason.

The second question asked their opinion about the adequacy of the amount of time dedicated to OMM at the school. Ninety-two students felt that the amount of time spent on OMM was “just right” and 41 felt that “not enough time” was dedicated to the subject and that additional time should be given to OMM. There were just eight students who felt that “too much time” was dedicated to the teaching of OMM. (see chart #4)

The third question asked; as a second year osteopathic medical student what was their overall level of confidence in doing non-HVLA OMM. When asked about non-HVLA OMM the response was quite different. There were only nine of the 142 students answering the survey who stated that they had a “low level of confidence”. Seventy-three had a “moderate level of confidence” and 60 students had a “high level of confidence”. (see chart #5)

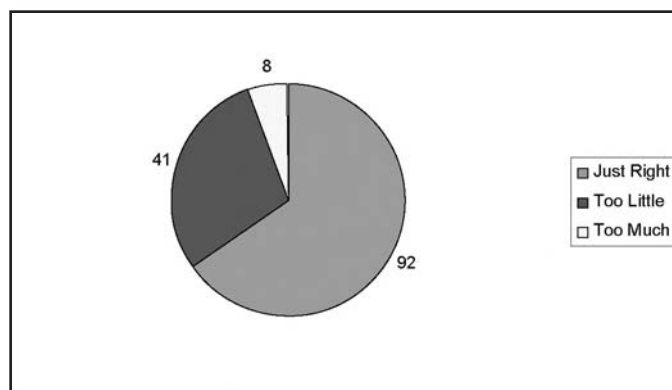


Chart #4: Amount of time dedicated to OMM

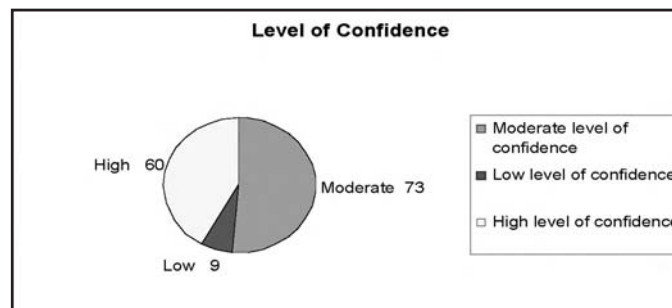


Chart #5: Level of confidence for students doing non-HVLA OMM

Of the nine students who had a low level of confidence, four felt they did not have the manual dexterity for OMM. Two had little interest in OMM; two thought there were too many techniques and one did not check a reason. It is interesting to note that although this was only a small group of nine students, this was the only group where lack of practice was not offered as a reason for their lack of confidence. (see chart #6)

There were 73 students who had a “moderate level of confidence” and once again their lack of practice between OMM classes was the reason that 32 gave for their reduced confidence level. This was closely followed by 28 students who felt that there were too many techniques taught and this made them confused. Once again, if they had practiced more they could have reduced or eliminated their confusion of the different techniques. (see chart #7)

The most telling question was concerning their intention of doing OMM in their medical practice. Twenty-five of the 142 students answered “No” that they had no intention of using OMM when they went into practice. Sixty nine felt that “maybe” they would use OMM and 50 stated that “yes” they were definitely going to use OMM as part of their medical practice. (see chart #8)

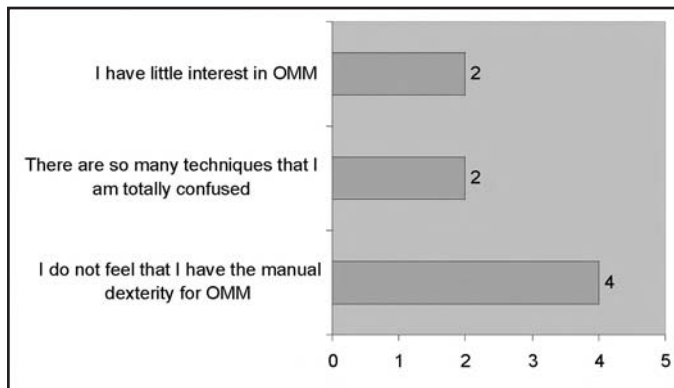


Chart #6: Reasons for the nine students with a “low” level of confidence in non-HVLA OMM. One student did not mark a reason.

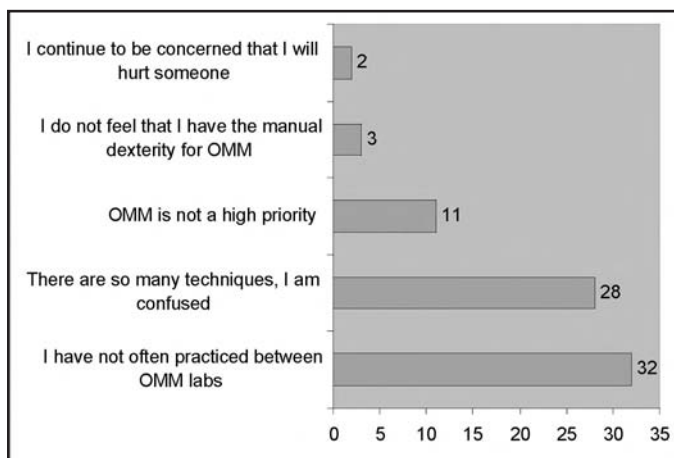


Chart #7: Reasons for 73 students with “moderate” level of confidence in doing non-HVLA OMM. Some students offered more than one reason.

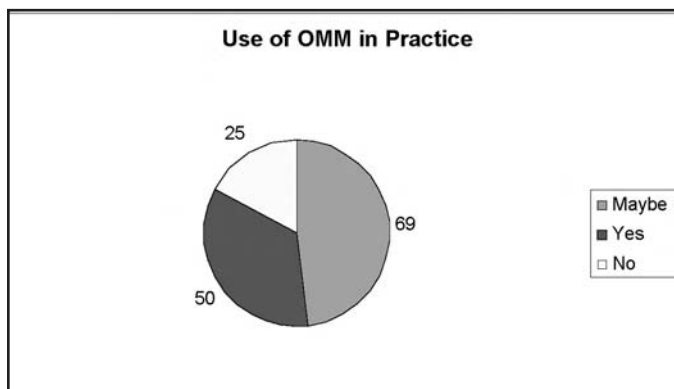


Chart #8: Intention of doing OMM in their medical practice.

It was at first disheartening that there were 25 second-year “osteopathic” medical students who had no intention of using OMM in their medical practices, until the statistics were further analyzed. When asked why they had no intention of using OMM, 16 answered that they intended to go into a specialty, such as radiology or pathology, that does not traditionally use OMM. This left only nine students of the one hundred 142 respondents from the class of 2008 that had decided not to use any OMM in their medical practice. This would approximate to 6.3 % of the respondents. Of note is the fact that of these nine students who have no intention of using OMM, eight indicated that they thought that too much time had been dedicated to teaching OMM. (see chart #4)

Of the nine students who answered that they had no intention of using OMM and were not going into a specialty that does not normally use OMM, there were four students who said that they really wanted to be MDs, not DOs, and wanted their patients to think that they were MDs. We should have compassion for these students. Individuals who use osteopathic medicine as a back door to allopathic medicine are destined to spend the rest of their lives wishing to be something they are not and never fully appreciating the profession that gave them the opportunity to become a physician. Their young minds are already closed to the principles that have made osteopathic medicine the fastest growing segment of the healthcare profession in this country, in the latter part of the twentieth and early twenty-first centuries.

The only thing worse than students who think they are settling for their second choice of professions are students for whom money is the primary motivation for going to medical school. There were three students who stated that they would not use OMM because they felt that they could make more money if they did not take the time to use manipulation. If money is the only or primary motivation to become a physician, there are other professions that would be better fitted for these persons. (see chart #9)

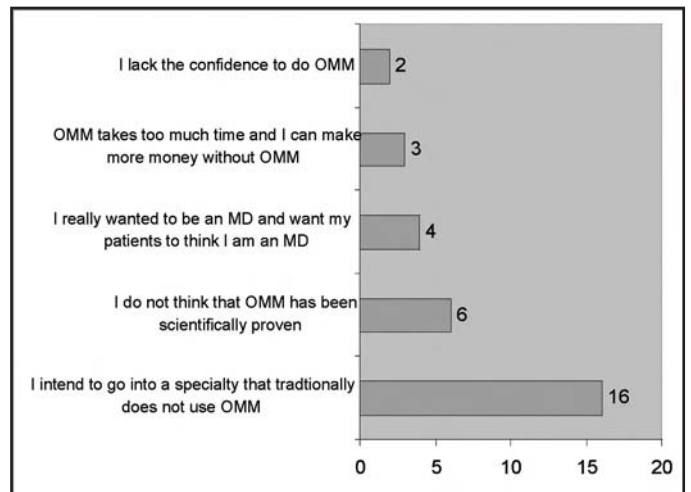


Chart #9: Reasons for the 25 students who answering “no” they had no intention of using OMM in their medical practice. Some students offered more than one reason.

Sixty-nine of the students responded that “maybe” they would use OMM in their medical practice. The primary reason for their hesitancy, as stated by 30 students, was that they needed to practice more. This was closely followed by 27 students who stated that they intended to go into a specialty such as radiology or pathology that do not routinely use OMM in their practices. Fifteen students stated that they lacked the confidence to be really good at OMM.

Those 69 students, who are still undecided if they will or will not use OMM when they go into medical practice, comprise 49% of the respondents. There is still time to influence these ambivalent students. If, during their third- and fourth-year clinical rotations and during their postgraduate training, they are given the opportunity to see OMM successfully incorporated into medical practice, there is a high probability they will follow this example and incorporate manipulative therapy into their practice. However, if they are not shown this example and observe mostly allopathic practitioners or, even more damaging, osteopathic practitioners failing to use osteopathic principles and practice, this is the example they will likely follow. This exemplifies the urgent need for practicing osteopathic physicians, who incorporate OMM into their medical practices, to become or remain actively involved in the training of osteopathic medical students. (see chart #10)

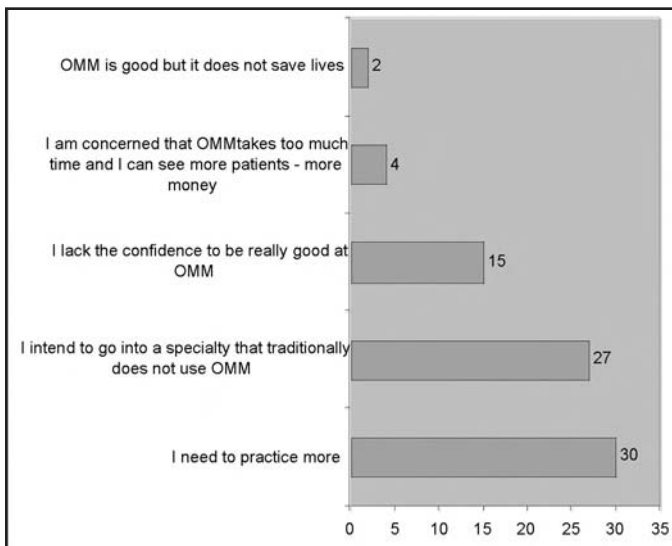


Chart #10: Reasons for the 69 students who answering “maybe” to use of OMM. Some students offered more than one reason.

In their written comments, the students expressed numerous reasons as to why they failed to practice OMM between laboratories. The two most common reasons given were the pressures of their other courses and examinations and also the unavailability of practice partners when they did have time and wished to practice OMM.

Analysis of the findings

Without a doubt, the major reason for those second-year osteopathic students having a low or only a moderate level of confidence in performing OMM, and in particular HVLA, was their lack of practice between OMM classes. The failure to

practice OMM techniques was expressed in several forms. Some students clearly stated that they had failed to practice, but others expressed it as a fear of hurting someone, lack of confidence and/or concern that too many techniques had been taught. Fear of hurting someone is frequently expressed by novice osteopathic students, but this fear can be overcome by practice and developing confidence in the proven safety of properly performed OMM. The need to practice between OMM Labs and not only cramming immediately before the practical examinations had been stressed to the class; this advice was apparently ignored by many students. The OMM Laboratory was available for extended hours, seven days a week, and was used by some interested students but was obviously ignored or under-utilized by others.

Although less frequently expressed, the students’ real or perceived lack of manual dexterity, especially as related to HVLA techniques is a concern. Do they really lack the manual dexterity to perform HVLA or is this just another manifestation of lack of practice and experience? Not every student is equal when it comes to manual dexterity, but just as a short, frail student alters the OMM techniques he or she uses compared to a tall, robust student, so does a student with diminished manual dexterity choose different techniques than an athletically inclined student. An impaired student uses different techniques than a fully functional student. To some students, because of their family and cultural background, touching is something they have grown-up with and it comes naturally to them. To other students touching is a learned skill and for these students it will require more individual instruction and more practice time to develop these skills.

Conclusion

The osteopathic profession is presently going through an unprecedented growth phase, not seen since the very early years of the profession. At the present time, the osteopathic profession comprises only 6% of the physicians in the USA, but our osteopathic medical schools have approximately 20% of all of the incoming medical students in this country. With new osteopathic colleges opening almost every year, and with several osteopathic colleges so young that they have not yet had their first graduating class, both the number and percentage of osteopathic medical students can reasonably be expected to continue to grow. This extraordinary growth of our osteopathic colleges is outpacing the profession’s ability to provide purely osteopathic clinical rotations and post-graduate training programs, causing an increasing reliance on our allopathic brethren to assist in providing this training.

One of the major challenges currently facing the osteopathic profession is the need to provide quality osteopathic clinical rotations and post-graduate programs that will integrate osteopathic principles and practice into the everyday practice of medicine, for this rapidly increasing number of DO students. To accomplish this, practicing osteopathic physicians who incorporate OMM into their practices, now more than ever before, need to become or remain involved in the education of these future DOs. With almost half of our students, at the end of their basic science years, still not certain if they will or will not incorporate OMM into their medical practice, it will be their third and fourth “clinical” years and their post-graduate programs that will make the final

determination if they will or will not become “true” DOs and practice the principles of our profession.

It is equally as important that the students receive a firm basis of osteopathic principles during their first and second “basic science” years. In addition to their present OMM curriculum, LECOM-Bradenton has initiated the following steps to improve the quality of osteopathic education at the school during the basic science years.

- Optional, small group, four students to one professor, OMM “mini-courses” are being offered throughout the second year. These optional mini-courses will be offered in modified HVLA techniques, muscle energy techniques, strain/counter-strain techniques, and advanced HVLA techniques. Students can sign up for one, some, or all of these additional mini-courses based on their needs and/or desires.
- Students are given the opportunity to receive additional grade points for documented OMM practice time. This is on a trial basis to see if this will increase the amount of time students spend practicing their manipulative techniques between scheduled OMM laboratories.
- Based on comments received from the students in this survey, a renewed effort is being made to fully integrate osteopathic principles and practice into the problembased-learning cases used in the curriculum.
- New problem-based cases are being written that will fully incorporate osteopathic principles into the cases and will use OMM as the primary form of treatment.

As we march into the 21st century, leadership in education and osteopathic role models are essential to strengthen and improve the osteopathic profession, in order to insure quality along with growth in quantity.

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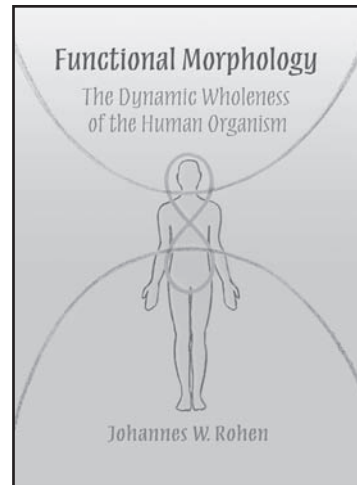
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Understanding and Treating Fatigue and Gait Instability in Persons with Multiple Sclerosis: An Osteopathic Approach

Alyn Hatter and Stuart Williams

Introduction

Fatigue is a subjective complaint some patients will use to describe weakness, tiredness, or physical and mental lassitude. It can be a sign of illness, a symptom of disease, or a side effect of some medications. Fatigue has been shown to be associated with gait instability and it impacts on quality of life. Is it possible to treat these manifestations of Multiple Sclerosis (MS) and aid the patient in regaining some quality of daily living?

Case History

Clinic Coupled: 51-year old female with MS presents to the osteopathic manipulative treatment (OMT) clinic with neck pain.

History of present illness

Approximately three weeks ago, she developed sudden onset pain. It appears to originate posterior to the right mastoid process and radiated down the right side of her neck into the CT junction area. She visited her physician who palpated some exquisitely tender areas in her cervical neck and referred her to the OMT clinic to rule out a musculoskeletal cause of her pain. She has taken hydrocodone and muscle relaxants in the past. She does not like them because she desires to remain alert while caring for her small children. She reports taking Advil with minimal relief. She also noted some numbness in her hands, especially when seated with her arms slightly abducted and elbows flexed during her daily bible study. That problem apparently began prior to her next pain. Her neurologist is aware and attributed it to her MS. Additionally, she complains of worsening fatigue and recent onset of foot drop of her right foot.

She explains that fatigue and foot drop have necessitated the use of a walker. The cumbersome nature of the walker, in addition to her fatigue, have prevented her from participating in her church choir as well as caused her to relinquish most of her responsibility in childcare.

Past Medical History: Diagnosed with MS four years ago.

Surgical History: Umbilical hernia repair in the 1970s, cesarean section 1995, vaginal hysterectomy and bilateral salpingo-oophorectomy 2004. No history of fractures.

Occupation: Disabled now, previously a pre-kindergarten teacher.

Social History: Denies tobacco, alcohol, and illicit drug use.

Drug allergies: None known

Medications: Copaxone subcutaneous injection once daily, Advil tid, Keppra bid, oral steroid taper every other month.

Family History: Mother alive in her 70s with T2DM and colon cancer, father presumed alive but unknown to patient.

Physical exam

A pleasant female, alert and oriented appears to be in mild distress. Cranial Nerves II-XII grossly intact. Pupils equally reactive to light and accommodations. Optic disc margins were sharp, no exudates or hemorrhage on fundoscopy.

On examination of her neck, she had a negative Spurling's and no Lhermitte's sign.

The occipital and atlas was sidebent right, rotated left, with suboccipital spasm. C3-5 was RrSr. Tenderness and tissue texture changes were localized to the lower cervical region. Her left 1st rib was elevated higher than her right. The 2nd – 4th ribs had myofascial restriction bilaterally. There were multiple tenderpoints along the right midscapular border. Deep tendon reflexes were 2+ at the Biceps, Quadriceps, and Achilles. They were 1+ Triceps and Brachioradialis. There was no muscle atrophy. She had myofascial restrictions of her right lower extremity including the plantar and popliteal fascia, and her interosseous membrane. Tender points were palpated piriformis and gluteus medius on the right. A foot drop gait and weakness of the L5 myotome was noted on the right.

The diagnosis included cervicalgia, somatic dysfunction of the C-spine, T-spine, ribs and lower extremity, foot drop, and Multiple Sclerosis.

OMT was performed, to include ligamentous articular strain, balanced ligamentous tension, facilitated positional release, and muscle energy. The patient left feeling some relief of her pain. She was given specific stretches to do at home and asked to return in two weeks.

Review of Literature

MS is a debilitating disease characterized by demyelination of neurons leading to distinct episodes of neurologic deficits, separated in time, with the demyelinated plaques separated in space. While the exact etiology is unknown, the clinical

manifestations of MS are presumed to be autoimmune in nature.1 MS has a prevalence of approximately 1 per 1000 persons in most of the United States and Europe.2 Women are affected twice as often as men with the onset becoming clinically apparent usually in midlife for both sexes.1,2

The disease often exhibits a relapsing and remitting pattern. While the clinical course of MS is variable, gait disturbance and fatigue are common complaints of those affected by MS. Pittion-Vouyovitch and colleagues shown that fatigue in MS is related to disability impacts on quality of life and is associated with depression.3 Common gait disturbances include spasticity and foot drop. Clinical tests have demonstrated that standing balance is a marked problem in persons with MS regardless of self-rated fatigue levels.4

MS patients often describe fatigue as a sense of overwhelming exertion needed to perform routine tasks. It may exist independently of both depressed mood and weakness.5 The pathophysiology of fatigue in MS is multifactorial. While a central cause of fatigue in the CNS has been demonstrated in multiple studies, there also exists a peripheral phenomenon associated with fatigue. MS patients complaining of fatigue show significantly less maximal voluntary force during exercise than normal controls and patients affected by chronic fatigue syndrome.5,6,7 Miller et al. found decreased muscle tension during repetitive peripheral nerve stimulation in MS patients complaining of fatigue.5,7 Lenman et al. assessed fatigue of the tibialis anterior muscle by repetitive electrical stimulation and found significantly decreased muscle tension during repetitive activity in MS patients as compared to controls.5,8 They concluded that fatigue-resistant fibers had transformed into fatigable fibers. It has also been shown that MS patients may be unable to adequately distribute and utilize oxygen in peripheral musculature.9 Other studies have found a correlation between fatigue and pro-inflammatory cytokines in venous samples, like Interleukin-1 and Tumor Necrosis Factor-alpha.5,10,11

Currently, pharmacotherapy and body temperature cooling are employed to treat exacerbations, halt the progression, and relieve fatigue. Recent advances in pharmacotherapy have been made in relieving the disease and its symptoms.12 A significant percentage of patients report using alternative and complementary therapies, including herbal and dietary supplements, massage therapy, acupuncture, biofeedback, and manipulation to name a few.12,13 The main focus of this literature review is on non-medicinal modalities.

Normal gait requires appropriate function and coordinated synchronization of motor and sensory neurons, bones, ligaments, tendons, muscles, investing fascia and vascular supply. According to the principles of osteopathy, a disruption or perturbation of any of these elements leads to dysfunction in its related elements, of which all are inter-related. Therefore, the goal of OMT is to restore normal balance between the related elements and allow the body to repair the dysfunction to the best of its ability. The gait disturbance in MS has been attributed to deconditioning, decreased volitional drive, spasticity, decreased range of motion due to hypertonic neural stimulation and fatigue. Many of the techniques used in OMT address each of these issues.

Yates, Kuchera, and colleagues conducted a pilot study to see the effects of OMT and maximal effort exercise on women with MS.12 The specific objectives studied female MS patients

with low to medium ratings on the Expanded Disability Status Scale to see if they would benefit from OMT in combination with a specialized maximal effort exercise program that increases strength. They also wanted to know if strength gain could be translated into improvements in coordination and endurance with a decrease in perceptions of fatigue. Patients performed concentric and isometric leg presses, eccentric and isotonic leg presses, and whole body exercises (e.g., lunges). Specific OMT techniques used included myofascial techniques to reduce spasm and inflammation, articular techniques to increase range of motion, and various types of direct and indirect spinal and rib techniques to lessen somatic and somatovisceral dysfunctions. They found significant improvements ($p < .05$) in strength and ambulatory levels while not increasing fatigue levels. The authors noted that the study protocol did not address whether each element of the combined intervention was effective individually.

Mann and Steele conducted a small study to look at the effect of OMT alone on gait disturbance in MS patients.13 The OMT techniques utilized were indirect techniques and muscle energy. Both objective and subjective results showed a trend in improvement of gait stability. They cited lack of statistical significance in their study may have been due to small sample size ($n=5$) or interrater reliability issues. However, patient subjective data showed dramatic improvement in ability to walk, less fatigue, an increase in range of motion, and improved quality of life throughout the week following OMT.

One pilot study looked specifically at foot drop gait in MS patients.14 It concluded that endurance exercises for the dorsiflexors of the foot can result in improved walking. The exercise consisted of 4 sets of 10 isometric contractions, 3 times per week, for 8 weeks. The authors noted that the improvement may have been due to a central learning effect, a peripheral training effect, or both. Gutierrez and colleagues evaluated the effects of resistance training on walking mechanics in patients with MS.15 Some kinematics parameters measured were knee range of motion, stride velocity, and individual phases of gait in seconds and as percentages of total stride time. Following resistance training, patients had significantly ($p < .05$) improved gait parameters and leg strength, decreased fatigue indices ($p = .04$), and a tendency toward decreasing self-reported disability scores ($p = .07$). These studies incorporated resistance training into the interventions and had positive results.

Discussion

It is clear that quality of life and fatigue and physical disability are interrelated with regards to the patient with MS. While there is no known cure for MS, several modalities have been employed to halt the progression and relieve symptoms. OMT and muscle strengthening exercises have beneficial effects in MS patients complaining of fatigue and mild to moderate gait disturbances. This translates into improved perception of quality of life.

Only a small number of studies have been conducted to evaluate the effects of OMT on relieving fatigue and improving gait mechanics in persons with MS. Although small in size, those studies show promising results. There needs to be a sufficiently powered randomized controlled trial that demonstrates

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objectively the effectiveness of OMT in treating gait disturbance and fatigue related to multiple sclerosis. In addition, a carefully designed protocol might explain which techniques are most effective and, more importantly, why. It has been hypothesized that the analyzed results of such a study may have far reaching implications, such as in treating chronic fatigue, fibromyalgia, and deconditioning and bone demineralization in astronauts in weightless environments.¹²

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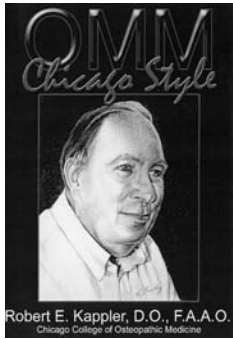
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Book Review

Robert C. Clark, Reviewer



OMM Chicago Style. Robert Kappler and Kurt Heinking: OMM Chicago Style. Published by the Chicago College of Osteopathic Medicine OMM Department, 555 31st Street, Downers Grove, IL 60616 www.midwestern.edu/ccom

Watching this DVD is enjoyable. It covers osteopathic structural diagnosis and manipulative treatment from head to toe. The disc is divided into chapters by region. Diagnosis for the region is demonstrated. Then treatment techniques for several sample diagnoses are presented. The DVD title lets the viewer know that some topics are not presented in the usual way techniques are done. But the authors clearly state the difference between the Chicago Style and everyone else's style. It is a pleasure to see alternative ideas and thinking.

Each topic whether diagnosis or treatment technique is presented concisely. This helps keep the viewer's attention at a high level and is in concert with modern learning theory precepts. Demonstrations last only a few minutes each and with the versatility of DVD, can be replayed as often as the user desires. The menus are easy to navigate and work reliably. It is easy to move about the disc once the user becomes acquainted with the controls of his or her machine and the menu structure of the DVD.

Camera work and recording technique are professional quality. The presenters work in front of an appropriately colored background. Sound quality is excellent. There were a few video dropouts on the disc used for review.

Have you read or watched a video that you think is valuable to your colleagues? If so write a review for the *AAOJ*. Send it to the editor by e-mail to editoraaoj@yahoo.com or by mail to Robert C. Clark D.O., 3243 Clayton Road, Concord, CA 94519. Please submit your review in a Microsoft Word ® document whether by e-mail or in disc formats.

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Elsewhere in Print

Philosophy, Science, Art

Hip-Spine Syndrome: The Effect of Total Hip Replacement Surgery on Low Back Pain in Severe Osteoarthritis of the Hip
Peleg Ben-Galim, MD; Tal Ben-Galim, MD; Nahshon Rand, MD; Amir Haim, MD; John Hipp, PhD; Shmuel Dekel, MD, PhD; Yizhar Floman, MD

This article is from *Spine* and was posted on Medscape is September of 2007. In it the authors study the impact of total hip replacement on low back pain in patients with severe osteoarthritis of the hip. In a group of twenty-five (25) patients, the authors found significant reduction in low back pain and spinal function following hip replacement surgery. Patients were evaluated both before and after surgery by an independent evaluator using several measurement tools such as visual analog pain scales, Harris hip scores and radiographs. The authors feel their study confirms the existence of *Hip-Spine Syndrome* as described by Offierski and MacNab in 1983.

Role of Osteopathic Manipulative Treatment in Altering Pain Biomarkers: a Pilot Study

Brian F. Degenhardt, DO; Nissar A Darmani, PhD; Jane C. Johnson, MA; Lex C. Towns, PhD; Diana C. J. Rhodes, DVM, PhD; Chung Trinh, DS; Bryan McClanahan, BS; Vincenzo DiMarco, PhD

This study was published in the September 2007 issue of the *JAOA*. Pain is a difficult entity to measure. The authors evaluated known pain biomarkers in ten patients with chronic low back pain against a ten-member control group. OMT was the treatment being evaluated. The study found that several of the pain biomarkers levels in the blood were altered with OMT. The change in patients with chronic pain was greater than in the control group. The study is small as is characteristic of a pilot study. This is a promising area for additional research.

Guideline for Management of Low Back Pain

American College of Physicians and the American Pain Society

The authoring groups issued *Annals of Internal Medicine* the guidelines jointly in the October 2, 2007. The target audience is primary care physicians. Patients are grouped into three groups: (1) non specific low back pain (85% of the patients); (2) pain associated with spinal conditions such as spinal stenosis or fracture; and (3) pain associated with specific disease such as cancer. The guidelines generally suggest that patients should be first given a focused history and physical examination to first categorize the patient into the appropriate group. Patients in the nonspecific group should not be routinely sent for imaging or other diagnostic studies. If there is progressive worsening or neurologic symptoms then such studies are warranted. MRI was recommend to be superior in informational value compared to CT scans.

Patient education as to course of symptoms and what to expect was given high priority in treatment planning. Patients should remain physically active. The next phase of treatment is pharmacologic. If there is still no improvement then non-pharmacologic treatments should be added! If patients refuse medications, then the non-pharmacologic treatments would be instituted. It is interesting to observe that spinal manipulation was listed, as the only effective non-pharmacologic treatment is acute low back pain. In chronic low back pain manipulation was listed as equally effective as acupuncture, yoga and a spectrum of other therapies.

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Edward T. Stiles, DO, FAAO,
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February 1-3

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

March 26

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

March 26-30

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

March 30 - April 1

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

April 4-6

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

May 16-18

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

June 6-8

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

July 11-13

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

October 25

Avoiding Disaster: Preparing for Flu Pandemic
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November 7-9

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Fred L. Mitchell, Jr., DO, and
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