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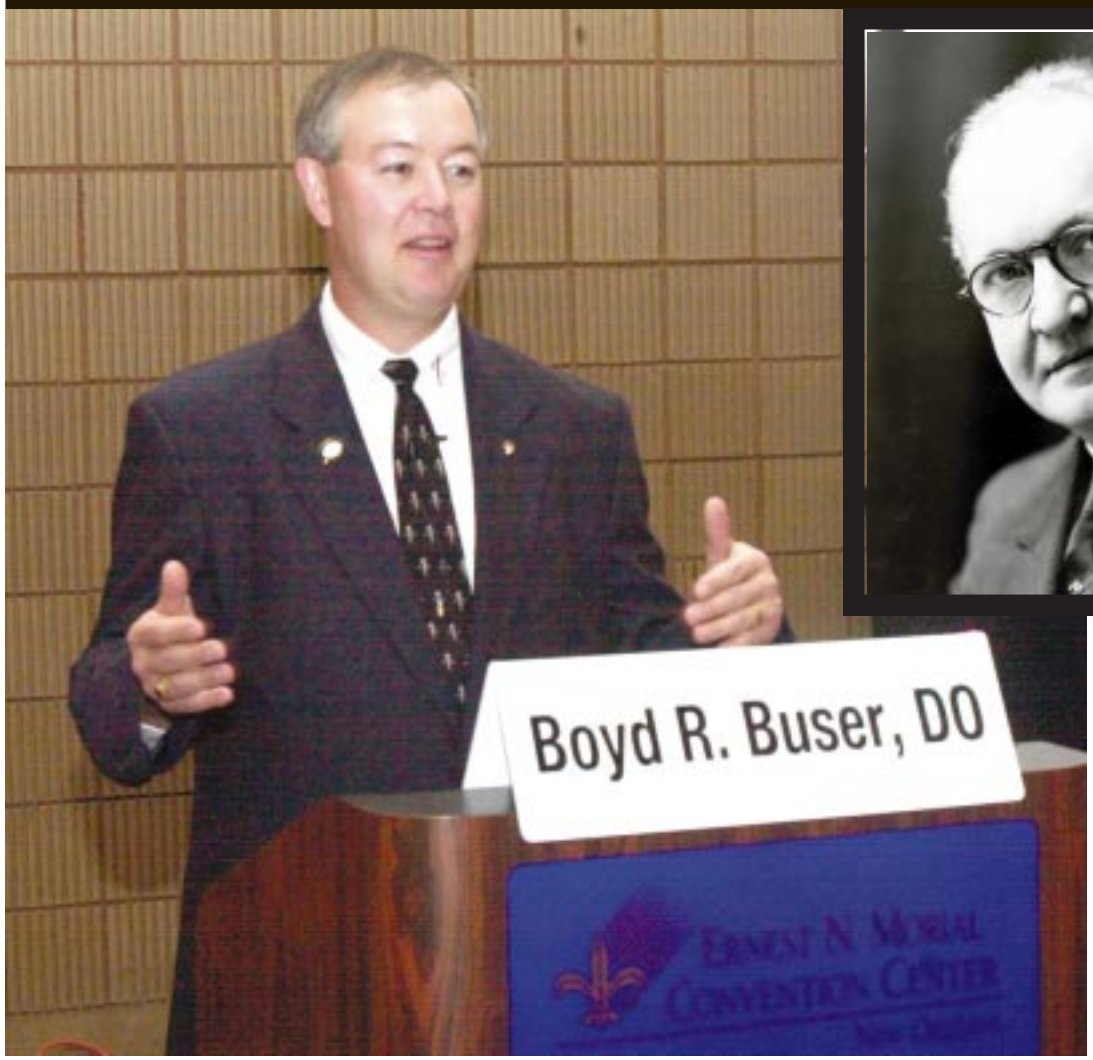
JOURNAL
FORUM FOR OSTEOPATHIC THOUGHT
A Publication of the American Academy of Osteopathy
TRADITION SHAPES THE FUTURE VOLUME 14, NUMBER 1, MARCH 2004



2003 Northup Memorial Lecture

"Academy Contributions: What have you done for us lately?"

page 16...

Instructions to Authors

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

The AAO Journal welcomes contributions in the following categories:

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

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

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

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

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

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

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

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

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

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

Requirements for manuscript submission:

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

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

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

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

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

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

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

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

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

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

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

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3. Include a caption for each figure.

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

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

Editorial Processing
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TRADITION SHAPES THE FUTURE • VOLUME 14, NUMBER 1, MARCH 2004
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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2004
Calendar of Events

APRIL

24-25 *Dr. Fulford's Advanced Percussion Technique* CCOM, Downers Grove, IL

MAY

14-16 *Prolotherapy: Above the Diaphragm* UNECOM, Biddeford, ME

JUNE

4-6 *Clinical Jones Strain-Counterstrain I for the Spine and Rib Cage*; Indianapolis, IN

JULY

23-25 *Still Technique (Applications of a Rediscovered Technique)*, WVSOM, Lewisburg, WV

AUGUST

19-22 *14th Annual OMT Update*; Buena Vista, FL

SEPTEMBER

30 - Oct 2 *Emotional Diagnosis and Release (Barral Approach***;** San Diego, CA

OCTOBER

3- 5 *Unlocking the Cranial Sutures (The Face)* San Diego, CA

NOVEMBER

6 *Modifying Delivery of OMT in an Allopathic Environment***;** San Francisco, CA

7-11 AOA / AAO Convention; San Francisco, CA

12-14 *Prolotherapy: Below the Diaphragm* UNECOM, Biddeford, ME

DECEMBER

4-5 *Facilitated Positional Release* NUSOM; Ft. Lauderdale, FL

Foundations

Since its appearance in 1997, *Foundations for Osteopathic Medicine* has been the premier text for the exposition of osteopathic theory, methods and practice. Having seen two editions, a third is now being planned. With such success, this seems an appropriate time to reflect on this volume's predecessor.

In 1969, *Osteopathic Medicine* was published by McGraw-Hill Book Company, Inc. This volume of 786 pages, including index retailed for $24.50. J. Marshall Hoag, DO was Editor; Wilbur V. Cole, DO, Associate Editor and Spencer G. Bradford, DO, Assistant Editor.

Part One (Basic Precepts) consisted of 6 sections: Osteopathic Medicine; Biological Foundations; The Autonomic Nervous System; The Musculoskeletal System; The Osteopathic Lesion; Treatment Of Osteopathic Lesions.

Part Two (Clinical Procedures) consisted of 8 sections: The Art of Practice; The Body's Response to Challenges; Disorders in Physiologic Regulatory and Integrative Mechanisms; Selected Errors in Metabolism; Disorders of Body Structure; Disorders of the Organs of Special Function; Disorders Involving Immune Mechanisms; Neoplastic Diseases.

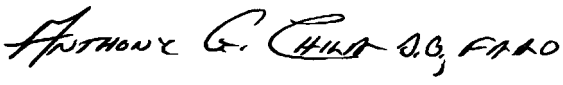
A total of 52 Chapters comprised the content of the 14 Sections of Parts One and Two.

Editors aside, the authors represented an assemblage of the leaders of the time: George W. Northup, DO; William F. Hewitt, DO; Paul H. Thomas, DO; Paul T. Lloyd, DO; Byron E. Laycock, DO; David Heilig, DO; S.V. Robuck, DO; David A. Patriquin, DO; William Baldwin, Jr., DO; Theodore Weinberg, DO; Ira C. Rumney, DO; Ward E. Perrin, DO; Robert W.H. Ho, DO; R. McFarlane Tilley, DO; Albert F. D'Alonzo, DO; Donald J. Evans, DO; William D. Miller, DO; Joseph E. Giletto, DO; D. Leonard Vigderman, DO; William B. Strong, DO; William F. Daiber, DO; H. Willard Sterrett, Jr., DO; Elizabeth A. Burrows, DO; Carl B. Umanzio, DO; Elias E. Zirul, DO; George T. Caleel, DO; F. Munro Purse, DO; and Otterbein Dressler, DO.

Those who did not contribute chapters, but whose suggestions and criticisms were acknowledged included: David W. Boone, DO; Angus G. Cathie, DO; W. Fraser Strachan, DO; and W. Kenneth Riland.

As indicated in the Preface, "It is the awareness of the need to bring the musculoskeletal system into proper focus in modern concepts of health and disease, together with a considerable experience in evaluating and treating the clinical problems involved, that has prompted the compilation of this book. The work should be useful to pre- and postdoctoral students, clinical teachers, and practicing physicians, as both text and reference source. Biologists will be interested in the discussions of the nature and mechanisms of disease. The book also will provide a ready source of information on what to look for in the musculoskeletal system in relation to various syndromes, what results might be expected from musculoskeletal treatment, and the effect of those results on the pathophysiologic course of the case in question."

In 1969, the osteopathic profession had not yet survived its first century of existence. The effects of the amalgamation experience in the state of California had not been completely overcome. The total number of colleges, all free-standing, had dropped from six to five. The institutional expansion of the profession was yet to come. Thirty-five years later, the profession has entered its second century of existence with full legal and social recognition. The continuing contribution of *Foundations for Osteopathic Medicine* stands on the shoulders of those who succeeded in the achievement of *Osteopathic Medicine* under circumstances of duress and faith.



Contributors

Buser, BR. Academy Contributions: What have you done for us lately? In this 2003 Thomas L. Northup Memorial Lecture, the author reviews the activities of the **American Academy of Osteopathy®** through its strategic plans. Dr. Buser addresses **Education, Research, International Affairs, Coding and Reimbursement.** His address places in proper perspective the innovative programs of the AAO and complementary involvement with programs of the American Osteopathic Association. **(p. 16)**

Back, HD; Gamber, RG. Cystic Fibrosis: A Case History. The authors offer an osteopathic approach in the management of an adult patient afflicted with Cystic Fibrosis for one year. Their presentation is pertinent to the fact that this entity is the most common inherited fatal disease among Caucasians. The primary author is a Year III Osteopathic Medical Student at UNTHSC-TCOM. Dr. Gamber was the recipient of the 2003 George W. Northup Award from the American Osteopathic Association. **(p. 20)**

Lipton, JA; McCarty, C; Drew, B; Neil, ML. A Case Study of Right First Rib Somatic Dysfunction Diagnosed and Treated Through Cooperative Care. The authors demonstrate that exhaustive clinical evaluation and conservative treatment of first rib dysfunction should be considered, where appropriate, prior to vascular surgical intervention. This case study is placed in the context of extensive literature appreciation of Thoracic Outlet Syndrome. **(p. 24)**

Capobianco, JD. The Neuroendocrine-Immune Complex Illustrated in the Work of Dr. Frank Chapman. A classic method of osteopathic clinical practice is presented in the light of contemporary understanding of the Neuroendocrine-Immune Complex. Submitted in partial fulfillment of requirements for Fellowship in the American Academy of Osteopathy®. Dr. Capobianco was conferred status as Fellow in 2002. **(p. 33)**

Regular Features

Dig On. The motivations of two osteopathic pioneers, Frank Chapman, DO and FP Millard, DO are put in the context of their contemporaneous education. As early students of Andrew Taylor Still (1897), both expressed significant interest in the lymphatic system of the human body, and each one left a different perspective still useful in osteopathic practice today. **(p. 8)**

From the Archives. From the seminal text Applied Anatomy of the Lymphatics (1922), the introductory pages of FP Millard's work are presented. Of particular note should be the Summary offered as conclusion to the section on lymphatic examination. The text was dedicated to Carl P. McConnell, DO, who would, in 1937, become Chairman of the *Osteopathic Manipulative Therapeutic and Clinical Research Association*, the forerunner of today's *American Academy of Osteopathy®*. **(p. 9)**

Book Review. Between 1996 and 2003, 3 volumes addressing aspects of the teaching of the late Robert C. Fulford, DO, FCA have appeared. While each can stand alone, the reader who draws from the trilogy will have rich sampling of the beloved teacher's personal, interpretive and archival aspects. **(p. 41)**

Elsewhere in Print. Postural assessment has long been a characteristic of osteopathic teaching and practice. Leg length discrepancy has been given its fair share of consideration. In an original contribution, *Static innominate asymmetry and leg length discrepancy in asymptomatic collegiate athletes* (Krawiec, et al.) offers a fresh perspective. Key osteopathic authors are cited. **(p. 43)**

Component Societies' CME Calendar

and other Osteopathic Affiliated Organizations

March 31
Closing Date for submission of Abstracts for International Conference on Advances in Osteopathic Research
Lake Erie College of Osteopathic Med.
British College of Osteopathic Med.
Contact: E-mail: icar@bcom.ac.uk
or authors can find instructions and an abstract template at
www.bcom.ac.uk/research/ICAOR5.asp

April 21-25
82nd Annual Convention
Wyndham Buttes Resort
Tempe, AZ
Hours: 38 Category 1A anticipated
Arizona Osteopathic Medical Assn
Contact: AOMA
602/266-6699

April 22-25
49th Annual Conference
Florida Academy of Osteopathy
Grosvenor Resort at WDW®
Lake Buena Vista, FL
CME: 22 Category 1A (anticipated)
Contact: Kenneth Webster, EdD
727/581-9069

May 13-16
107th Annual Convocation
Indiana Osteopathic Association
Indianapolis, IN
Hours: 30 hours category 1A
Contact: IOA
800/942-0501 or
317/926-3009

May 14-16
Crash Recovery the Long Road Home: Treating Victims of Motor Vehicle Accidents and Brain Injuries
PCOM, Philadelphia, PA
Hours: 16 Category 1A anticipated
The Cranial Academy
Contact: The Cranial Academy
317/594-0411

May 23-26
Biodynamics Phase VII
The Health - Alone
Farmington, ME
Hours: 18.5
Contact: James Jealous, DO

June 19-23
Basic Course in Osteopathy in the Cranial Field
Doubletree Columbia River Complex
Portland, OR
Hours: 40 Category 1A anticipated
The Cranial Academy
Contact: The Cranial Academy
317/594-0411

June 20-23
Experiencing Osteopathy: An Introduction to Continnuum Movement
Doubletree Columbia River Complex
Portland, OR
Hours: 24 Category 1A anticipated
The Cranial Academy
Contact: The Cranial Academy
317/594-0411

June 24-27
Annual Conference
Doubletree Columbia River Complex
Portland, OR
Hours: 21 Category 1A anticipated
The Cranial Academy
Contact: The Cranial Academy
317/594-0411

June 27-29
Biodynamic Approach to the Fluid Body
Doubletree Columbia River Complex
Portland, OR
Hours: 16 Category 1A anticipated
The Cranial Academy
Contact: The Cranial Academy
317/594-0411

August 21-22
Ligamentous Articular Strain Technique
Dallas Osteopathic Study Group
Dallas, TX
Hours: 16 Category 1A anticipated
Contact: Conrad Speece, DO
214/321-2673

Dig On

Anthony G. Chila, DO, FAAO

They were Contemporaries

It is fascinating to realize that the early classes of the American School of Osteopathy often had more than one student who would ultimately offer a significant contribution to the elaboration of Andrew Taylor Still's teaching. Frank Chapman, DO and F. P. Millard, DO are two examples.

The year was 1897. Both men had begun the study of osteopathy. In the years following their training and establishment of professional careers, each would offer a significant contribution, still beneficial to the osteopathic profession today.

Millard's *Applied Anatomy of the Lymphatics*

(The Journal Printing Company; Kirksville, Missouri; 1922) was preceded by a question during his student days. In 1897, he asked The Old Doctor about the significance of the lymphatic system, and was told that he (Still) was "still experimenting along that line". His curiosity stimulated, Millard pursued his own question and eventually published New Method Of Diagnosing Various Diseases By Palpating Lymphatic Glands (*Journal of the American Osteopathic Association*; July 1920). In 1922, a full text became available. The text is organized such that the first five chapters were written by him: Chapter One: A New Method of Diagnosing Various Diseases by Palpating Lymphatic Glands; A Lymphatic Examination; Venous Stasis and Lymph Blockage. Chapter Two: Applied Anatomy of the Lymphatics of the Head and Neck. Chapter Three: Applied Anatomy of the Lymphatics of the Head and Neck in relation to Acute Poliomyelitis. Chapter Four: Lymphatics of the Thorax. Chapter Five: Lymphatics of the Abdominal and Pelvic Regions. Chapters 6-15 were each written by a leading osteopathic specialist of the time and provide extensive elaboration of thought in response to Millard's impetus. The original publication of the text was under the auspices of the International Lymphatic Research Society. Among Millard's Credits: Author of Poliomyelitis; Founder and President of The National League for the Prevention of Spinal Curvature; Founder and President of the International Lymphatic Society, and Editor of a Quarterly Journal published by the Lymphatic Research Society; Anatomical Artist; Originator of Water-marked Spine in Stationery for the Osteopathic Profession.

(see page 7 to order Dr. Millard's Book)

An Endocrine Interpretation of Chapman's Reflexes

This was copyrighted in 1937 by Charles Owens, DO. Frank Chapman, DO, died at about the time the original manuscript was being prepared. Owens, working with his sister, Doctor Ada Hinckley Chapman (Chapman's widow) and Dr. W.F. Link, secured the publication of the manuscript. Owens subsequently moved from interpretation of Chapman's work to incorporation of the reflexes into his own practice.

It is interesting to read Chapman's comments in the Introduction:

"The ideas here presented respecting lymphatic reflexes have, to the best of my knowledge and belief, never been presented before.

"When I entered the American School of Osteopathy in 1897 the prevailing thought in the school was there was no sickness without a bony lesion. Thirty years as an osteopathic practician in the field have, however, convinced me that bony lesions will account for only about twenty percent of our ailments, the greater part of which are due to dietetic errors and poor hygiene that lower vitality and make us susceptible to common colds and other infections, from which the return to health is often incomplete.

"Years ago it seemed to me that the lymphatic system had a much more profound influence on bodily functions than it had been given credit for; that blocking, partial, or complete, of the lymph stream by common colds and other infections was responsible for many phases of disease."

(see page 7 to order Dr. Chapman's Book)

From the Archives

The Lymphatic System

Applied Anatomy

Chapter One, *Applied Anatomy of the Lymphatics*, F.P. Millard, DO

General Outline

Students of anatomy sometimes fail to grasp the relative importance of collecting applied data as compared to that of gaining a knowledge of the tissues, organs and general framework of the human body as outlined in texts on that subject.

The physician in practice soon feels the need of greater knowledge of the various vessels, nerves and organs along the line of applied concept. As he advances in his work and studies his patients at the office and bedside, there comes a longing to know just what relation exists between the various parts of the body and the disease that he is endeavoring to diagnose. He wonders always, or should, how great an involvement is present in certain disorders where symptoms reveal specific pathological phases. In neuritis, for instance, he asks what change has taken place that has caused a normal nerve tone to be replaced by the symptoms so strikingly impressed upon the patient. He had been taught in college the general outline of the nerve tracts, their nerve root tracings and their relation to the groups of muscles. He also was taught the osseous framework and the relation of the nerves to the various bones. But in some instances he had never worked out in detail the applied part and felt that he did not understand the various stages of muscle tension as related to nerve instability and irritability. The various causes of the chemical changes in the body fluids in perverted function, such as the possibility of lymph blockage through the malposition of certain bones, and the resultant organic disorders that follow a perverted blood supply to the walls or substance of an organ, and the lack of vasomotor control in some instances. As osteopathic physicians, we are more or less familiar with this follow through system, and we reason from cause to effect. We have familiarized ourselves with the general blood circulation both from an anatomical and physiological standpoint, and then the pathological.

Applied anatomies have been written both from a surgical and osteopathic standpoint that deal with many phases from a very practical viewpoint. From these books we have learned much although we are yet in our infancy, so to speak, as to the real significance of applied work.

As mentioned in the preface no attempt as yet has been made to devote a book to the subject of the lymphatics in all its various phases.

In dealing with the lymphatics first from an applied anatomy standpoint, we do not claim in any way to be adding any new anatomical features, but we hope to enable the student to get a mental picture of the various structures so that he will more readily grasp the significance of the causation of disorders in the body when symptoms manifest themselves.

We want to emphasize, in considering the lymphatic system, the, importance of any perversion of the tissues that may alter the function of any part of the body.

In the various regions discussed, we hope to assist the student in clarifying the various influences that may have a bearing upon the structures affected thereby producing tissue changes to the extent of causing some bodily disturbance.

The lesion theory as propounded by Dr. A. T. Still, will be given first place in all our discussions, because we know that his reasonings were correct and can be demonstrated in any instance where there remains sufficient impulses to carry out this idea.

We realize there are certain diseases so far advanced that the reflexes are lost and the nerve impulses so disturbed or feeble that it is quite impossible to restore normal functioning, but these cases are extreme, and we will consider more particularly those cases that are amenable to adjustment and restoration.

In dealing with the lymphatic system, let us go about it in a manner that will first of all be broad enough in outline to realize that the body is a machine that is so correlated that if one part suffers there will be a corresponding reflex that will to some degree, at least, affect other parts or all parts.

The tendency of the day is to specialize and narrow ourselves to the point of believing that any organic disturbance is a localized one, and that we must treat or deal with the

➔

affected part from a local standpoint. This must be overcome, and we must fix in our minds the fact that the circulation that bathes one part of the body one minute may be bathing a remote part a little later; that the lymphatic system is so arranged that the drainage continues to the point of emptying. The blockage at a point in the abdomen or pelvis will reflect itself upon the lymph flow possibly in the feet. We can also see how enlarged glands in the neck may cause any number of disturbances in the organs of special sense in the head.

Insufficient stress has been laid upon the points of interference with the flow of lymph, and in these chapters on applied anatomy we hope to show, in some degree, the possibilities of many diseases being existent through a blockage of the lymph flow either in the nodes or vessels.

Finally, we want to assist the student by demonstrating that in any pathological condition there is invariably a relative lymphatic disturbance, and try to show how adjustment will assist the body in clearing up the retardation or obstruction.

New method of diagnosing various diseases by palpating lymphatic glands*

(Reprint of article by author from the Journal of the American Osteopathic Association, July, 1920)

Had Dr. A. T. Still lived a few years longer, I sincerely believe he would have given to the world a vast amount of information regarding the lymphatic system. I have always felt that he had in his mind some information along the line of new physiology dealing with this subject. He hinted at the reduction of obesity by lymphatic control, and often mentioned the lack of knowledge and research in relation to the lymphatics, but we could never draw any definite conclusions as to his reasonings. One day, 23 years ago, I ventured to ask him regarding the significance of the lymphatic system, but he passed the subject, by simply stating that he was still experimenting along that line.

Recognizing that there was a field only partially worked out, I set about to determine if I could discover any hidden truth that might be of value to the osteopathic profession. My first observations were rewarded, some 16 years ago, by a revelation that gave me grounds for further research. The idea was so new I did not feel like announcing it until I had satisfied myself that there was sufficient merit in the theory to warrant its publication.

Three times during the past few years, I have ventured to throw out a few suggestions. One reference to the matter pertained to swellings found in the breast and their relation to axillary disturbances; a second was the inguinal disturbance found in the right groin in cases of appendicitis; and the third, published in the May number of this Journal, dealt with enlargement of the lymphatic glands from outside infections and inoculations.

Allow me to state that I believe that few, if any, physicians have made it a regular part in their diagnostic work, year in and year out, to carefully examine the condition of the various lymphatic glands as a part of their examination of patients, also the following up of the state of these glands from time to time in cases where lymphatic enlargement was found. This calls for the development of a peculiar touch, as palpable glands vary so much in different systemic conditions that it is almost incredible the number of phases these nodules assume.

For several years I have based, almost conclusively, my diagnosis as to the surgical or nonsurgical nature of the appendix upon the state in which I found the inguinal glands. They serve as an index to the pathological condition existing around the caecum and appendix.

As stated above, I almost hesitate to announce this new method of diagnosis and suggest that you will not criticize too severely until you have gone through a period of personal findings, and have satisfied yourself as to the merit of the method. I shall not try to cover in this article all of the diseases in which lymphatics are disturbed, but simply refer to three or four disturbances, and leave it to you to think over and experiment for yourself.

Going back to appendicitis, let me state that you will first have to familiarize yourself with the various conditions found in the inguinal region. It is well to always palpate carefully both groins, first with the limbs extended, and then flexed. When the limbs are extended, the glands, if present and enlarged, will present a different feeling than when the knees are bent.

The subject has so many phases that I find it difficult to describe in a brief article the thoughts that will bring out the most striking features. About the first thing that you will suggest is the question. How can you differentiate when there is a pelvic congestion, such as when a right ovary or tube is involved; also, how can you distinguish if there exists an infection of a venereal nature? To say that it is easy would be foolishness, but to state that skill will follow long research would be on a par with the statement that months of practice are often necessary for the student to detect some hidden spinal lesions.

We are all quite familiar with the almost set type of glandular inguinal enlargement found in gonorrhea, for instance. The nodules are usually quite enlarged and often indurated. They ebb and flow, so to speak, as

*First publication of the technique of the newest thing in diagnosis - and it is OSTEOPATHIC, - Editor, Journal of the American Osteopathic Association.

the disease is acute and active, or subside with lack of congestion in the sexual organs.

I will admit that one difficult diagnosis to make is when appendicitis is conjointly found with venereal infection. Should there be simple ovaritis or salpingitis, with no venereal infection, we usually find a disturbed lymphatic condition, accompanied with certain reflexes. Ovarian colic or cramps, or a hypersensitive hypogastric plexus will enable the examiner to determine the presence of tubal congestion.

In a case of appendicitis, with apparently no complications, if pus is present and the caecal area is involved, the inguinal glands are found slightly elevated and their nodular surfaces under the skin readily palpable. This condition I have almost invariably found and verified by judging as to the advisability of referring the case to a surgeon on the strength of the amount of nodulation.

In a test covering a period of four years, some seven years ago, I treated 310 cases, with the result that three had to be operated upon after a trial to reduce congestion. That was a small percentage. At one time I was treating eight cases that had been told to be operated upon within 24 or 48 hours. This strain was not small, as I appreciated the significance of the situation. Fortunately, I was rewarded by bringing these eight cases out of danger, and I followed up the acute attacks with corrective work. I relied entirely upon my diagnosis in relation to the inguinal glands.

In the March issue of *The AOA Journal*, 1916, there is a colored plate showing the lymphatic glands of this region.

The breast region is also a most significant one, in that the axillary region is so directly concerned. Surgical operations for removal are so very common that one almost wonders where it will end. It is not uncommon to find lumps or swellings in one or both breasts. The significance of these tumors depends upon the amount of lymphatic involvement of a general nature.

If you will carefully trace the channels back to the axilla in relation to the pectoral muscles, you can quite readily determine the amount of glandular involvement. If the axillary region is comparatively clear of nodules, and there seems to be no particular blocking of the connecting channels, it is usually safe to say that the lumps found in the breast are not of a malignant type, and may be reduced indirectly by corrective work. As a rule, malignancy of the breast follows axillary warning of some duration. Traumatic injuries of the breast should he attended to at once, as the tendency is toward circumscribed induration, with secondary lymphatic complications.

Possibly the most patent instance of lymphatic abnormality is found in the throat.

We are all familiar with the "kernels", "lumps", and peculiar nodular enlargements found in children as well as in adults accompanying various epidemics and tonsillar infections. In children we have a range of swollen glands, from those found preceding measles, chickenpox, etc., to those noted in scrofular and tubercular diseases. Accompanying a simple rhinitis we often note a marked disturbance, while in tonsillitis, even in the adult, there may be a most aggravated lymphatic disturbance.

One more instance and we will close this abbreviated article.

The final reference is to septic infection of the lymphatics of the popliteal space by absorption of material, including perspiration, dirt, and dyes from stockings, through soft corns and skin abrasions between the toes. We are all familiar with blood poison and lockjaw from plantar punctures by rusty products, with dirt and cloth carried into the wound. The resulting symptoms may include lockjaw.

Examining carefully the popliteal regions, in all cases where a general examination is made, I have frequently observed enlargement of these glands when this space should be comparatively clear. Upon removing the stockings or the socks, as the case may be, I have found in a number of instances skin abrasions between the toes. Through these cracks or denuded slits perspiration, dust, or dyes are constantly being absorbed, and the resultant effect is noted upon the nodules in the space behind the knee. After instructions, and the careful healing of these tissues between the toes, I have noticed the disappearance of the nodular swellings.

This last reference does not pertain to the diagnosing of a hidden trouble, as in the instance of pelvic and breast involvement, but carries out my idea that infection of a part is invariably manifested by nodular interference at the nearest gland center.

Some other time I may write on other findings, especially the determining of the degrees of tuberculosis by lymphatic enlargement, according to the region of the body diseased, but I have given you my ideas in part as to the possibility of diagnosing more accurately the degree of infection or accumulation of toxic products by lymphatic manifestations.

A lymphatic examination

This is an innovation. We have been accustomed to general and special examinations, but to set out to make a lymphatic examination is a new departure.

We have made a chart blank that outlines the points where the physician is most likely to find lymphatic variations and disturbances.

First of all, let us consider the lymphatic system as a whole – a general circulation, yet subsidiary to that of the vascular system.

We find that there is a field for applied anatomy of the lymphatics ➔

just as of other tissues of the body. We find lymph blockage and nodular enlargements, hyperplasia and adenitis, also in some instances a backing up and a reverse in the flow of lymph. This has been described in connection with the gastric lymph vessels by noted surgeons.

There is an ebb and flow, so to speak, in the lymph stream. To illustrate this point we will note that when there is mesenteric blockage or pelvic lymph nodular adenitis, a corresponding disturbance is found in the lymph areas of the popliteal space; also a slight edematous condition in the. ankles, usually on the outer side just in front of the external malleolus. Again we note where there is a puffiness above the clavicles, on one side or both, a corresponding I blockage of the lymph stream exists either at the emptying point of the thoracic duct and right lymphatic duct, or we will find an over-burdened thoracic duct from too much tension or too great an accumulation of lymph. The system is constantly trying to clear itself and the clearing house is partly made up of the lymphatic system.

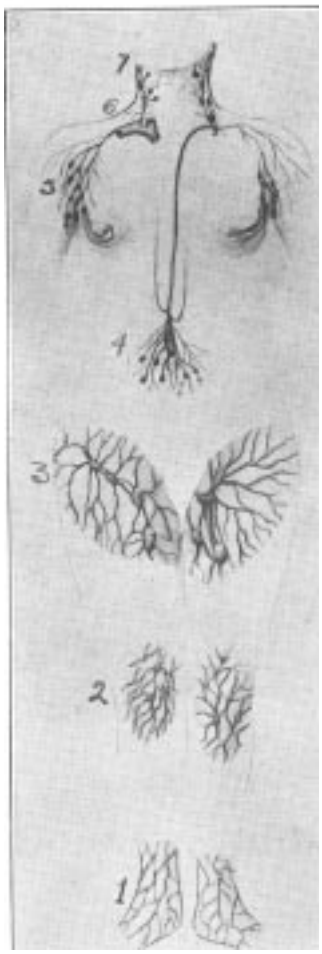


Plate I: Seven points of palpation in making a lymphatic examination.

Again we note a puffiness around the eyes. There is a cause for it. If we trace the lymph stream, we will soon discover that there is a blockage in the cervical nodes, or possibly the submaxillary, or nodes in the parotid region. There may be lesions causing tensed muscles that prevent a free drainage. In all of the lymph nodes and vessels in the throat and neck there is a possibility of blockage.

There is also a possibility of lymph obstruction through the enlargement of the salivary glands or a subluxation of the mandible or hyoid bone. The puffiness of the eyes may be due to over-burdened kidneys, and an enlarged liver. Disorders of the spleen may also cause it when the system is loaded with toxic products and elimination is faulty. We may look then for a lymph stream blockage and puffy areas in certain regions. Thus we see it is well to examine for areas of lymph obstruction where there are evidences of edema.

Now that we have this viewpoint in mind, let us proceed to make our lymphatic examination. With the blank before us, we will start always at the emptying points of the lymph tubes or ducts. On both sides these ducts empty into the subclavian veins. If the drainage is perfect -there will be no puffiness above the clavicles. If there is a blockage or over-loading, we will observe edema.

Let us take the presents of edema on the left side and work out our examination and diagnosis. The second point we will note will be the axillary region (No. 5). Note any nodular enlargement or adenitis, and if present trace out the cause. See if there has been a recent scratch or abrasion of the skin on arm, forearm or hand. If there has been, note the presence or absence of pus or even a blister. Also note the vasomotor tone in the entire arm. Cold hands affect the lymph stream. Should there be signs of a recent vaccination or serum injection, determine the amount of axillary adenitis that existed at the time.

Next, palpate over the mammary region and note enlargement of nodes and extent of induration if present. Connect up the arm and pectoral regions, lymphatically speaking, and determine which area was first affected and to what extent.

Note carefully what quadrant of the breast is nodulated, and whether they are deep seated nodes or superficial. Go over the thoracic vertebrae and costal areas, and determine the number and significance of lesions. Adjustment of vertebral and costal lesions may clarify the nodular enlargement if no abrasions or recent vaccine or serum injections have taken place. We will go back to the neck now and palpate for superficial and deep nodular enlargements (No. 6). Note presence or absence of goitre, and determine if there have been recent symptoms of laryngitis or pharyngitis. The presence of muscle tension and venous stasis will be of value in tracing the lymph blockage. Corresponding bony and muscular lesions may be found, and lymph nodes enlarged to the extent of irritating the nerve cords in the neck. If there exists any congestion of tissues due to tonsillitis, abscessed teeth or sinus infection, note the effect on the cervical lymph nodes. Determine, if possible, the amount of lymph suspended and retained in the vessels and nodes at all points above the hyoid region (No. 7). After testing and palpating the various nodes and edematous areas, including the tonsillar and faucial areas, try and determine the relation of this blockage to that found in the terminal area, back of and above the clavicles.

Again, we note the lack of drain-

age, if present, from the bronchomediastinal trunks. Following bronchitis or a pleuritic infection, there may be a difficult drainage that will reflect itself upon the tissues above the clavicles. How often in throat and bronchial troubles we note not only cervical nodular enlargement, but that peculiar puffiness above the clavicles which is so hard to reduce unless we reason out just why this blockage exists, and drain the lymph vessels.

In this brief chapter we must necessarily point out only a few of the cardinal points. A thorough examination including all applied anatomy findings would fill a book.

We will recall our anatomy teaching regarding the collection of lymph on the two sides. This will explain the suggestion just made that more often we find edema in the left supraclavicular region.

The epigastric region we will next discuss briefly (No. 4) The liver, from a lymphatic standpoint, is more significant than the spleen. The tendency of the liver to enlarge and become torpid and sluggish makes lymph drainage uncertain. Part of the liver's drainage is above, and eventually empties into the right lymphatic duct or indirectly into the thoracic duct in part. The principal lymph vessels drain into the thoracic duct along with the drainage of the stomach.

If the patient is thin, you will observe on palpation a peculiar enlargement of the receptaculum chyli when the knees are flexed. Sometimes you can palpate the larger nodes and you can press the abdominal aorta so readily against the receptaculum chyli that you can cause the pulse beat to fluctuate. I have palpated the receptaculum chyli when it could almost be picked up with the finger tips in a thin person when, there was a heavy mesenteric blockage.

Splanchnoptosis and venous stasis combined with ovarian congestion or appendicitis, will soon prove to you the great amount of blockage that takes place in the receptaculum chyli and thoracic duet.

In pelvic congestion the nodes are markedly enlarged, as you will determine by special local examinations, vaginal and rectal. The inguinal glands (No. 3) will reflect not only pelvic congestion but appendicitis. The lymph blockage of the mesenteric glands and in the receptaculum chyli will reflect itself upon the inguinal glands by a blockage of lymph.

Lastly, we will go briefly over the lower extremities. Palpate over the popliteal space (No. 2) with patient on the back, and then with patient standing. You will find a new viewpoint when you make this double test.

Look for varicose veins, even small ones; also palpate the calf muscles deeply between thumb and fingers and determine presence or absence of stasis. Recently I noticed a lymph disturbance in inguinal region due to a bruise on the thigh, also a popliteal lymph enlargement due to a soft corn. Go over the ankles (No. 1) and look for any swelling that would indicate a lymph blockage higher up. Again, note vasomotor tone in blood vessels and observe the effect upon the lymph nodes in popliteal and inguinal regions.

Summary

1. For every congested tissue there is a corresponding lymph disturbance.
2. Wherever pus is present there is enlargement in the nearest nodes.
3. An abscessed tooth or even a pimple or small boil will reflect itself on the nodes.
4. The lymph stream ebbs and flows according to the amount of blockage and nodular enlargement at certain points.
5. Edema is significant of lymph blockage.
6. Nodular enlargement is not always between the terminal lymph drainage and distant disturbance.
7. There may be a backing up of lymph and a reverse flow in spite of the numerous valves.
8. Collateral lymph circulation may take place when indurated nodes or blocked lymph channels exist.
9. There is a direct and an indirect vasomotor control of the lymph stream.
10. Enlarged nodes may irritate or over-stimulate nerve trunks.
11. Vaccines and serums are as direct causes of nodular involvement as poisons taken into the system.
12. The lymph stream must always be drained first through the terminal areas.
13. Attempts to clear the lymph stream before clearing the edema in the clavicular regions is to over-tax the general lymph stream and cause profound reactions.
14. Any permanent results in treating the lymphatics must be accomplished through the nerve centers that control the vasomotor nerves of the blood vessels in the same region as the lymph blockage.
15. Never work over an enlarged or indurated lymph node, free the efferents and the lymph will drain.
16. General exercises will stimulate lymph flow, but if there is marked lymph blockage it is better to relieve the lymph tension before exercises are given. This will save marked reactions.
17. In treating the extremities, see that the axillary and inguinal regions are cleared first.
18. The only way to clear bronchomediastinal lymph blockage is through cervical and thoracic adjustment. Deep control can only be reached in that manner.
19. Indurated nodes may never reduce. Establish drainage and collateral flow will follow.
20. Note from time to time the various accessible lymph areas in any and every organic disturbance.
21. Learn to palpate nodes in every region where they are accessible.

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Venous stasis and lympha blockage

In school we used to spend a few days on the subject of lymphatics. Five years from now, or less, students will receive daily instruction on this subject. It will be embodied in texts on applied anatomy, and each organ and area will be considered from a lymphatic standpoint. Under the discussion of every diseased organ or tissue a few paragraphs will be included referring to lymph drainage. We have devoted much time in the past to a study of the vascular system in all its details, but have neglected to a great extent the tracing of lymph flow and in accounting for edematous areas that indexed the amount of venous stasis and lymph blockage that existed. We have paid so little attention to the lymph stream that we have not gone beyond a few findings in two or three regions, usually the cervical, axillary and inguinal.

Let us spend a few minutes going over the principal findings that should be included in every examination, and at every treatment. In the first place, wherever there is venous stasis there is bound to be lymphatic disturbance.

We will take the mesenteric region first. We recall the innervation and vasomotor control of the vessels in this area.

With the osseous lesions that may cause an interference with peristaltic action, secretion and vasomotor control, we are familiar. If there is ptosis and stasis we must naturally expect lymph blockage. The receptaculum chyli that drains this region is readily blocked when the above conditions exist. We cannot expect to correct these changes in blood and lymph streams unless we first of all correct the ptosis. Organs that have sagged cause pressure on vessels and lymph channels. Neither can we expect to free lymph drainage unless there is a normal thoracic duct passage. If there exists a puffiness back and above the clavicle on left side we must see that the edema is reduced before we attempt drainage at a point in the region of the receptaculum chyli. This will necessitate correction of lesions from the cervical area down to the pelvis. It would be useless to correct cervical and thoracic lesions if a sacrum was tilted sufficiently to cause an unbalanced spine. We must also work to restore normal impulse to the mesenteric vessels in order that venous stasis will disappear. Normal relations will come about only by correction of all lesions causing ptosis and misplacement. A sagged stomach dragging over the thoracic duct and receptaculum chyli will interfere with lymph drainage.

Venous stasis must be cleared up by securing first of all a normal liver condition. Any lesions affecting the various functions of the liver will check the clearing of the veins and lymph vessels. It is in this region that we find the many tumors, benign and malignant. The lymphatics are involved, the nodes enlarged, and lymph vessels obstructed. If you want, to see this object lesson make a few post mortems in cancer of stomach or associated parts and observe the, lymph blockage.

While venous stasis is relatively important, yet we believe lymph blockage the more significant in foreign growths and in congestion.

While venous stasis, may precede lymph blockage, yet, it is the lymph disturbance that spells disaster to the tissues. In the final analysis the veins are much less important, in relation to a pathological phase than are the lymph vessels and nodes. It is easier to re-establish venous drainage than lymph drainage.

The nodes once enlarged and indurated are not easily reduced. True, the, lymph vessels have valves more numerous than the veins, but they also have a lesser caliber and the lymph flow is constantly checked by the flow through the nodes. While some nodes have vasomotor nerve fibers, the blood vessels are much better supplied with these fibers. This we have to contend in lymph blockage first, with a venous stasis that must be cleared, then a lymph drainage that must include a reduction of the nodes when enlarged, and a free lymph flow at the terminals of the lymph ducts. The blood vessels that supply the nodes may have vasomotor nerves, but we must depend in freeing the lymph stream upon indirect vasomotor control through the nerves to the vascular system. The vasomotors to the nodes are not constant. Again, in order to clear the lymph stream in the mesenteric region, we must consider the possibility of an unusual lymph flow from the pelvic region. If this exists there will be found an additional tax upon the receptaculum chyli from the lymph below, and this additional burden upon the thoracic duct in eases of pelvic disturbance will make mesenteric drainage more difficult.

Normally, the receptaculum chyli and afferent ducts are sufficiently taxed, but abdominal and pelvic venous stasis will overtax the lymph stream in every instance. This will reflect itself upon the lymph drainage of the various organs in this region and only the insurance of a normal venous and lymph flow will clear the area and remove the tax upon the lymphatics of the receptaculum chyli.

The majority of ailments of the human body have their beginning in the epigastric region. A sluggish, inactive liver may start a stasis and lymph blockage that will reflect itself upon not only the immediate organs

and tissues but, by blockage, prevent pelvic drainage of the lymphatics. We will then note a little puffiness in the ankles, a similar condition back of the knees in the popliteal spaces, and unless we free the ducts and chyli nodes, the edema will persist.

It is easy to block drainage below the second lumbar segment. An obstructed alimentary tract will produce lymph blockage very nicely. A lessened vasomotor tone will also block the lymph vessels and nodes when venous stasis is present.

There must be tone and there is only one way to get tone, and clear the congestion, and that is by good technique and specific corrective work.

You will recall the peculiar vasomotor control in the mesenteric region. The second relay, so to speak, to give extra impulse to the mesenteric vessels. This will call for lesion findings, and corrections higher up than is usually found in other organic disturbances.

It is well to re-read anatomies occasionally and keep in mind the nerve centers that control the vasomotors. It is through these nerves that we make headway in clearing stasis and secondary lymph blockage.

In this brief chapter we can discuss only one region, but we have tried to emphasize a fact that may be applied to any lymph area, namely, that a venous stasis will invariably cause a lymph blockage. We have not included in this chapter conditions where lymph obstruction may be primary, such as direct poisoning of the system through introduction of vaccines, serums, or ptomaine substances. This phase of the subject must be dealt with from a different angle.❒

2003 Northup Memorial Lecture

Boyd R. Buser, DO, FACOFP

"Academy Contributions: What have you done for us lately?"

Something important happened in the Academy in the early 1990s. The AAO turned its focus to the world outside the Academy. We implemented a new strategic plan and adopted a bold new mission statement. We hired a new Executive Director and moved to the Pyramids in Indianapolis. We markedly increased our educational offerings in osteopathic manipulative medicine (OMM) and osteopathic principles and practice (OPP). We utilized a substantial portion of our reserves in these activities. While we have often referred to ourselves as the "keepers of the flame", at that time the flame was fanned and set ablaze. I was elected to the AAO Board of Trustees around that same time, and the Board has been guided by our strategic plan, which has been significantly revised on two occasions since that time. In the day-to-day and year-to-year operation, the leadership is often frustrated by the difficulties and challenges that we face in our interactions both within and outside our profession, and we do not always take time to reflect on the bigger picture. I want to take this opportunity to take a step back and give you my perspective on what we have accomplished in this past decade. The Academy is over 65 years old (that qualifies it for Medicare), so let us ask, "What have you done for us lately?"

Education with the adoption of the 1992 strategic plan, the Academy made a commitment to be the leading source of education in osteopathic manipulation. In the "pre-pyramid" days, we traditionally conducted only two educational programs each year; the Convocation in the spring, and the AOA Convention program in the fall. While there were occasionally other offerings (e.g., muscle energy tutorials), the new strategic plan called for much more; educational programming that was not just for AAO members, but for the osteopathic profession at large, and even for allopathic physicians interested in developing skills in manual medicine. I will return to the latter issue in a moment, but first let us look at how our educational offerings have developed over the past decade.

In the past 8 years, we have conducted 127 CME programs, an average of 16 per year. Topics included a variety of manipulative approaches, such as high velocity low amplitude, muscle energy, counterstrain, myofascial release, percussion vibrator technique, facilitated positional release, and Still technique, as well as exercise prescription and prolotherapy. We conducted programs focussed on clinical conditions as well, such as management of lower back pain, and comprehensive OMT updates, particularly popular with DOs preparing for board certification exams. During those past 8 years, we had an average of 826 paid physician registrants in our programs.

I would be remiss if I did not mention student involvement in our annual Convocation. I remember attending Convocation as a student. In those days, there were relatively few students attending, and no student-specific programming. However, there has been a complete transformation in this regard. Over the past several years, we have averaged over 400 students in Convocation attendance, and we have a complete parallel student program in place. No other osteopathic specialty college can approach that level of student attendance; in fact, I dare say that we probably have more student attendance at Convocation than all the other specialty colleges' programs, combined. In addition to the UAAO, we now have an additional student organization, the National Undergraduate Fellows Association (NUFA). There should be no doubt that there is great student interest in OPP and OMT in our schools today, and the Academy should be proud that we foster and nurture that desire for knowledge in the arena that most clearly distinguishes osteopathic from allopathic medical education.

In the continuum of osteopathic education, I have addressed students and practicing physicians. What about residency training and board certification? Through most of the 1990s, our AOA specialty board certification process was conducted by the American Osteopathic Board of Special Proficiency in Osteopathic Manipulative Medicine (AOBSPOMM). While this board functioned very well, the name of the board was confusing to the profession at large. Most felt it implied that the certification conferred by the board was like a Certificate of Added Qualification (CAQ); that a ''primary" certification by another AOA board was required in order to establish eligibility for that board. While we knew it was a primary certification, we also recognized that the name was a problem. We initiated a request to change the name to the American Board of Osteopathic Manipulative Medicine, through the Bureau of Osteopathic Specialists, and this brought the situation to a head, resulting in the appointment of an AOA task force to

study the issue. Had our board been relegated to a CAQ, it would have had a disastrous effect on our growing residency programs; why would a graduate enter a residency program that did not lead to a primary board certification? We emerged from this crisis with a new certifying board, and a new description of the discipline that I believe is more reflective of the practice focus of the physicians who specialize in this area. While many of our members felt that we had been "done wrong", we have seen an unprecedented growth in our residency programs. There are now 20 established residency programs with over 90 approved positions in osteopathic neuromusculoskeletal medicine and OMM. This includes 2-year NMM programs, "plus 1" programs, and combined 3-year integrated family practice/NMM programs. We have created the Postgraduate American Academy of Osteopathy to serve the needs of our intern and resident members.

I want to return for a moment to the issue of non-osteopathic physicians' interest in manual medicine. There is clearly a growing interest among our MD brethren in this approach, primarily in family practice and preventive medicine & rehabilitation. They have no formal mechanism to recognize their skills, education and training in this area, and this presents problems for those doctors, in reimbursement and privileging, and in some cases, licensure issues as well. The position of the Academy is that the osteopathic profession should be the authority, and should take the leadership position in determining what the educational and practice standards should be for all fully-licensed physicians who utilize manual medicine in their practice. If we do not do it, who will? I think you can imagine who will. Make no mistake, this is a controversial position within our profession, but it is my belief that this position is consistent with A.T. Still's vision of improving the practice of medicine. When all physicians practice according to osteopathic principles, his purpose will have been served, and it would not make any difference what you call it.

Please don't misunderstand me. I am in no way calling for amalgamation. We desperately still need our own professional institutions, colleges, licensure examination, and we will until we change all their minds, until they all think like us. And I do not think we are in any danger of that happening anytime soon. But again I say, the osteopathic profession must take a leadership role regarding education and practice standards in the world of manual medicine, and the Academy has pushed the envelope in this arena over the past decade.

Research: Speaking of protecting the future of our profession, there are few areas of more critical importance than research establishing the efficacy and effectiveness of OMM. The lack of a solid evidence base for this treatment approach affects everything from reimbursement to education to licensure, and our strategic plan makes research a priority for Academy activities.

Academy members have naturally been the leaders in the OMM research agenda, and one fact that bears this out is that 75% of principal investigators and co-investigators of AOA-funded clinical research studies are OMM specialists who are Academy members. The Academy should be proud of this.

I do not believe there is any AAO committee that has "done more with less" than the Louisa Burns Osteopathic Research Committee (LBORC). These people have worked tirelessly, unselfishly investing uncounted time and working with limited financial support, because they believe in the importance of their goals. Their list of accomplishments is long, but relatively unsung. LBORC members were instrumental in the planning and conduct of the first Osteopathic Collaborative Clinical Trials Initiative Conference (OCCTIC), from which grew not only OCCTIC 2, 3, 4 and 5, but the whole concept of a national osteopathic research center, which as we know is now a reality. Incidentally, the AOA, AACOM and the rest of the organizations represented in OCCTIC planning recognize the central role of the Academy in this area, and that is why OCCTIC 4 was held in conjunction with the AAO Convocation earlier this year, and why OCCTIC 5 will be held in conjunction the 2004 Convocation in Colorado Springs. They know if they want these conferences to be well attended and successful, that they should hold them where the researchers are.

There are many other research-related activities to which Academy members have devoted significant time and effort, including development and validation of the osteopathic SOAP note, a standardized tool for research data collection; conversion of the SOAP note into an electronic format; development of a "single organ system" musculoskeletal exam form. They have worked to aid in the development of the National Osteopathic Clinical Database, and pushed the agenda of inclusion of osteopathic terminology into the Metathesaurus of the National Library of Medicine. I know that the director of the national Osteopathic Research Center at the University of North Texas (incidentally, a member of the AAO Board of Governors) would tell you that the support of the Academy through the LBORC has been invaluable in the successful development of the Center.

International Affairs: The AAO strategic plan adopted in 1992 demanded that we become more involved in the osteopathic profession outside the US; it identified us as "…the world-wide source". AAO members had long had relationships with osteopaths practicing in other countries, and there was interest within the Academy of establishing a more formal relationship with these folk. At that time, osteopathy was either not recognized, poorly regulated, or in some cases illegal in most countries outside the US, and where it was legal, practice rights were restricted. ➔

That is, the American model of full, unrestricted licensure did not exist. There was a lack of understanding of the diverse nature of education, registration and practice scope within the Academy leadership at that time. In order to help further our understanding and enable us to make more informed decisions about our own external relationships, the AAO organized the first International Forum, held in Atlanta in March, 1996 in conjunction with the AAO Convocation. This forum was surprisingly well attended, and a tremendous exchange of knowledge occurred. The Forum evolved into an annual event, and has served as a springboard to a new international organization. But before I get to that, I think it is important to talk about where the AOA was at the time of the first International Forum. As part of the planning of that first forum, an invitation was extended to the AOA, and to the International Federation of Manual Medicine (a mostly European, predominately MD manual medicine organization). But because there were these "limited practice rights" participants there, both organizations, while sending representatives to Atlanta, refused to participate in the Forum itself. In fact, the AOA was not at all interested in any sort of international activity; their main efforts in that regard involved directing individual American DOs to foreign government authorities to help them seek licensure. As one prominent AOA leader said to me at that time, "They do not call it the American Osteopathic Association for nothing"! However, the Academy's initiatives in this arena could not be ignored, and resulted directly in the establishment of the AOA's Council on International Osteopathic Medical Education and Affairs (CIOMEA). Now we have the World Osteopathic Health Organization, which I alluded to earlier. And the AOA is increasing their involvement, holding their own international meeting this past June for the purpose of exploration of development of another international organization. This would have never happened without the Academy!

I also mentioned FIMM, the International Federation of Manual Medicine. The Academy is the official voting delegate to this Federation from the USA, and the Academy is well represented in the committee structure of the organization, influencing the agenda of manual medicine world-wide.

Coding and Reimbursement: But now I need to turn our attention back to the USA. Perhaps nowhere has the Academy had a quieter but more significant impact for our profession than in the ongoing battle for fair reimbursement for our professional services. The AOA has consistently participated in the house of medicine's activities in the payment policy arena; activities organized by the AMA and its specialty societies. The AOA garnered a permanent seat on the RVS Update Committee, otherwise known as the RUC, from its inception. This body advises CMS on RVUs for physician work, practice expense, and PLI (the components of the RBRVS). We have also had ongoing representation on the CPT Advisory Committee. The CPT Editorial Panel determines the codes used by all physicians to report their services to third party payors, public and private. Since the inception of the RUC in 1992, either the RUC or CPT advisory committee members have been chosen from Academy leadership.

Prior to 1994, OMT services were reported using HCPCS codes, and when it came time to establish "real" CPT codes, the AOA turned to the Academy for advice and leadership. The CPT proposal and testimony that resulted in the creation of our current OMT codes was presented with the help of Academy leadership, and that proposal was adopted by the Editorial Panel. Our OMT codes were thus first published in CPT 1994. Then began a long (and still ongoing) battle to obtain reimbursement for an office visit reported on the same day as OMT services. At OUR request, the Editorial Panel revised the introductory notes to the OMT codes, stating that E/M services could be reported in addition to OMT on the same date, by appending the -25 modifier to the office visit code. This was intended to clarify that both services could be reported on the same day, but had the unfortunate side effect of reinforcing the notion that E/M services were included in the OMT codes, and that therefore, the E/M could only be reported if a separate problem from the problem for which the OMT service was provided was reported. So we went to the Feds for help. Some people would compare that to getting married for the third time; a triumph of hope over experience. Nonetheless, we were able to persuade HCFA to issue a memo to their local carriers, stating a that a separate problem or diagnosis was not required for the reporting of OMT and E/M on the same date. Unfortunately, not all of HCFA's own Carrier Medical Directors (CMDs) seemed to get the message. The AOA thus created a document for presentation at a meeting with high level HCFA staff in Baltimore, which resulted in a Medicare policy clarification to all CMDs. Since that time, our Medicare denial rate for OMT and E/M has been less than 5% nationally. This was a significant success, and AAO leaders were instrumental in the development of the document presented to HCFA, and had a lead role in that important Baltimore meeting. However, despite our success with Medicare, it was quite clear that we still had a major problem with private payors, and that more needed to be done. The HCFA document evolved into the AOA's Position Paper on OMT and E/M, a document that is still in use today, revised and updated by AAO members with the assistance of AOA staff. We returned to the CPT Editorial Panel, asking for a revision of the Introductory notes to the OMT codes, stating explicitly that a separate problem or diagnosis was not necessary for OMT and E/M to be reported on the same date. The

proposed language was written and the Editorial Panel testimony delivered for the AOA by an Academy representative. Not only was the proposal accepted, but the revised language was incorporated into the description of the -25 modifier, which benefited a number of specialties, MD as well as DO.

Around the same time, the American Chiropractic Association (ACA) brought forward a proposal to create chiropractic codes in CPT. The AOA endorsed this proposal, as we believed there was a distinction between OMT and chiropractic manipulation, and we wanted that distinction maintained. This was not as easy as it sounds, because the Editorial Panel has a policy against "specialty specific" codes. This means that if the same procedure is performed by multiple specialties or professions, the CPT code for reporting these services is the same for all providers. An example is psychotherapy, which is performed by both physicians and non-physicians providers yet both psychiatrists and psychologists often use the same CPT code to report psychotherapy services. Once again, testimony developed and delivered for the AOA by the Academy was instrumental in the Panel's decision to include CMT codes in CPT.

The OMT-E/M battle rages on today. The most recent front was the RUC, and its Practice Expense Advisory Committee. When the practice expense RVU's were transitioned from the old charge-based system to a resource-based system, the AOA recognized that this was an opportunity to further clarify that E/M services are not included in the RVUs for the OMT codes. A practice expense survey instrument was developed, again with significant input from the Academy, and our members were, I would argue, the most significant contributors to the data that were presented to the PEAC. An AAO representative presented our testimony, and it was accepted by the PEAC and the RUC. The current Proposed Rule from CMS indicates that they accepted the RUC's recommendation. This includes a substantial increase in staff time for the OMT codes, and a change in staff type, which will increase the staff expense calculation from $0.23/minute to $0.37/minute. When the Final Rule is published next month, we anticipate a substantial increase in the practice expense RVU's for our 5 codes. This is another important victory for reimbursement, however what may be even more significant is that our practice expense proposal clearly separated E/M services from the OMT service, and this will be more ammunition in the ongoing struggle.

Now you may say that all these were victories for the AOA, and just happened to involve Academy members. And while I agree that the Academy could not have done all this alone, the AOA would have been far less likely to be successful without our leadership and contributions. And I would also say that it did not just happen to involve Academy members, but that these people were selected for their involvement because they were Academy leaders.

Advocacy for our members extends within our profession as well. An AAO position paper on cervical spine manipulation was instrumental in obtaining a favorable PLI coverage decision for DOs who use manipulation on a substantial percentage of their patients, and was submitted to the AOA House of Delegates for adoption as an official AOA position. Speaking of the House, the Academy has had an increasing level of involvement there in the past ten years. During that time we have submitted 15 resolutions to the house, and the number of Academy members in attendance has been on the rise. In fact, 64 physician delegates and alternate delegates were AAO members of the 2003 House.

Conclusion

In closing today, I would like to note that I have only touched on a few key areas of Academy activity. It is beyond the scope of today's presentation to try and cover all the important things the AAO has done in the past ten years. One notable area I did not mention at all is the remarkable evolution of AAO publications, including the birth and development of *The AAO Journal*. And since this is the Northup Memorial Lecture, I am afraid if I did not at least mention publications, I would probably have both Tom and George Northup spinning in their graves.

I am sure you probably noticed that I have not mentioned any names here today, and just tried to focus on accomplishments. The Academy has always been blessed with many dedicated members who have been willing to give freely of their time and talents, as volunteer leaders, because of their love of the profession and their desire to keep it alive, and they do not do it because of any need or desire to be recognized for it. You know who so many of them are. But there are many who most of you have probably never heard of; committee members and others. And without the rank and file dues-paying members and Golden Ram Society contributors, we would not have the financial resources to even exist as an organization. The AAO staff, from top to bottom, are dedicated and committed. One of the greatest things about this profession and about this Academy is that it inspires so much caring and dedication by so many.

I would like to thank the Academy for the honor of being able to speak with you here today. I would like to thank the Academy staff for all their assistance in gathering the background information and statistics I used in preparing this presentation. Most of all, I would like to thank my wife, Pam, for all her understanding and support, without which I would not be here today. Thank you all for coming, and please enjoy the rest of our program.❐

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Cystic Fibrosis: A Case History

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University of North Texas Health Science Center - Fort Worth
Texas College of Osteopathic Medicine

Introduction

Cystic fibrosis is the most common inherited fatal disease among Caucasians.[1] The clinical picture of CF is a result of mucus stasis and obstruction in various organs of the body, most critically the respiratory tract. Defective mucus and decreased mucociliary clearance create fertile breeding grounds for bacteria such as Staphylococcus aureus and Pseudomonas aeruginosa leading from chronic bronchitis to bronchiectasis and ultimately to respiratory insufficiency. The degree of pulmonary impairment is the major factor affecting the patient's ultimate prognosis.[2] Because respiratory function is key to survival of the patient with CF, modes of therapy are focused on maintaining maximum lung function and controlling pulmonary infection. Osteopathic manipulation therapy should play an integral part in the management of the patient with cystic fibrosis.[3]

Case History

Vital signs:

Wt: 109
BP: 110/66
HR: 85
Resp: 18
Chief Complaint: Increased cough

HPI:

Christy is a 26 -year-old white female with the chief complaint of increased cough upon waking for 1 wk. Sputum produced is yellowish-green. She denies fever or dyspnea. Christy's last hospital stay for her cystic fibrosis was just over one year ago due to pneumonia. She is currently doing 2 CPT treatments per day with nebulizers. This is Christy's first visit to a DO and wishes to know how manipulative therapy could help her increase the length of time between her hospital visits.

Current medications:

Zithromax 500mg on MWF, Ultrase MT18-6 per meal, albuterol with saline nebulizer

PMHX:

Diagnosed with cystic fibrosis at 3 years old (1980) at Dallas Childrens Hospital. Since then, she has been hospitalized 5 times for CF related illness: 1988, 1997, 2000, 2001, and 2002.

FMHX:

Mother, Father, brother-good health
Maternal grandpa-died of MI
Paternal grandpa prostate cancer
Mother's cousin-died
of cystic fibrosis

Social/Employment Hx:

Match support coordinator for Big Brothers/Big Sisters of North Texas; Denies tobacco and EtOH.

Allergies:

Augmentin, PCN

Physical Exam:

Areas of Somatic Dysfunction

Cervical: OA SLRR
Thoracic: T3-7 SRRL
Lumbar: L2-4 SLRR
Sacrum: nl ROM
Pelvis: nl ROM
UE: nl ROM
LE: nl ROM

Assessment:

1. Somatic dysfunction C, T, L
2. Cystic fibrosis

Plan:

1. OMT to regions of somatic dysfunction
2. Continue current meds
3. Follow-up in two weeks

Review of the Literature

According to Eli H. Stark, DO, most studies of chronic obstructive pulmonary disease in patients, who have not received osteopathic manipulative therapy, have emphasized significant chronicity and poor response to therapy. However, 92% of patients, who received osteopathic manipulation, claimed subjective improvement in their capacity to do physical work.[3] In this paper, two areas will be discussed:

1) the impact of the autonomies on the respiratory system in the CF patient; and

2) the lymphatic system and its relationship to CF.

Autonomics-The Sympathetic and Parasympathetic Nervous System

The autonomic system has 2 parts: sympathetic (SNS) and parasympathetic (PNS). SNS fibers originate from T1-L2 and PNS fibers from cranial nerves 3, 7, 9, 10 and S2-4. When considering bronchial musculature, SNS fibers cause broncho-dilatation and PNS fibers cause broncho-constriction. For optimal pulmonary function, a major goal for the CF pa-

tient, it is important to balance these two systems.

The upper thoracic region, T1-T6, represent the site of origin of sympathetic innervation to the pulmonary tissue. For this reason, patients with pulmonary disease frequently manifest somatic dysfunction in this region, particularly T3-T4 rotated left.[4] According to Edward Stiles, DO this somatic dysfunction may have a detrimental effect on the related sympathetic ganglia, and secondarily, on the arterial supply to the pulmonary tissues. This may also decrease the ability of the cardiovascular system to deliver nutrients, oxygen, and medication to the affected tissue.[5]

The vgus nerve, or cranial nerve 10, represents the parasympathetic innervation to the pulmonary tissues. The vagus exits the skull at the jugular foramen; therefore somatic dysfunction at the occipitoatlantal joint can cause increased parasympathetic tone leading to broncho-constriction and decreased sympathetic tone. Establishing musculoskeletal mobility in the upper dorsal area may help establish a more normal sympathetic input with bronchial dilatation resulting. The same clinical result can take place when cervical somatic dysfunction is treated, since a more normal parasympathetic input can result in diminution or reversal of bronchial constriction.[5]

Treatment modalities

HVLA would be an appropriate method to treat somatic dysfunctions in the thoracic and cervical areas of the CF patient, provided the patient is willing and without contraindications. HVLA utilizes a high velocity, low amplitude activating force for specific joint mobilization to increase motion, improve function, decrease pain, and modify somato-visceral reflexes.[4] Muscle energy would be another treatment choice, provided the patient was not acutely ill and/or fatigued.

Lymphatics

Lymphatic techniques are intended to remove restrictions and promote flow of the lymphatic system in order to increase fluid resorption, improve respiration and circulation, decrease interstitial proteins, and provide a more beneficial pH balance.[4] Thus, appropriate lymphatic return is essential for the associated tissues to realize their functional potential.[5] In order to meet these goals, treatments should be aimed at removing flow restrictions and increasing flow. Typical lymphatic treatment includes inhibition/rib raising to T1-L2 to decrease sympathetic tone to lymph vessels, address thoracic inlet somatic dysfunction, which commonly obstructs lymphatic flow, redoming of the respiratory diaphragm, and augmentation of lymph flow via some type of lymphatic pump.[4]

Treatment modalities

The first technique to be applied should be the release of the thoracic inlet bilaterally since the lungs drain to both the right lymphatic duct and thoracic duct. This will effectively "open the drain" where the ducts empty into circulation at the junction of the subclavian and internal jugular veins. The thoracolumbar and pelvic diaphragms should be released, since these work together as a pump to return lymph to the venous system. Rib raising can be used to free the rib cage and improve lymphatic flow. Lastly, the use of a lymphatic pump technique such as thoracic or pedal pump should be applied to improve lymphatic flow. Note: Bacterial infections with fevers >102 degrees should be treated with antibiotics before employing a lymphatic pump technique to avoid risk of systemic spread of infection.[4]

Discussion

As previously stated, the main goal of treatment in the patient with cystic fibrosis is optimization of lung function. In combination with quality medical care, osteopathic manipulative treatment can aide in reaching this goal by maintaining good respiratory mechanics and lymphatic flow.

Conclusion

Christy's increased coughing in the morning is a significant issue considering her diagnosis of cystic fibrosis. This is commonly the first indication that she has an infection, either viral or bacterial. The fact that she is currently taking Zithromax leads one to believe either her immune system is being overwhelmed; she has a resistant strain of bacteria; or she has a virus. If the condition persists, a sputum culture and further antibiotic use would need to be considered. Meanwhile, the osteopathic physician can help her body heal itself by helping her lungs and lymphatics work as efficiently as possible to fight off the infection. Maybe then Christy could avoid another lengthy stay in the hospital.

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4 Simmons, Steven L. Osteopathic Manipulative Medicine: Review for the Boards. 2001.

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Dr. Fulford's Advanced Percussion Course Downers Grove, IL April 24-25, 2004

Pre-requisites: One basic Percussion Course

Robert C. Fulford, DO

Rajiv L. Yadava, DO
Program Chair

Note: Below are excerpts from Andrew Weil, MD, in the introduction of Dr. Fulford's Book, *Touch of Life*, published one year prior to his death in 1997.

"In my recent book, *Spontaneous Healing*, I devoted a chapter to Dr. Robert Fulford, one of my teachers, the first who made me truly aware of the prodigious healing power of nature, which is now the focus of my work. I met Bob Fulford in Tucson, Arizona, in the early 1970s, when he was in his late sixties, supposedly in retirement but actually running a busy osteopathic practice from a small office on Grant Road. I spend many hours in that office watching the old doctor fix people by putting his hands on them and manipulating their bodies to allow the natural healing power to do its work. I marveled at the simplicity and effectiveness of his treatments, a striking contrast to the expensive, invasive high-tech medicine that had become the norm for most doctors - MDs and DOs alike.

. . . As a physician dedicated to radical reform of medicine, I find Dr. Fulford's life and work a great inspiration for my work. His emphasis on vital energy and the healing power of nature concepts that animated medical inquiry from the time of Hippocrates through the last century - is completely missing from medical education today. I once helped make a documentary video about this man, entitled "Robert Fulford: An Osteopathic Alternative," but the more I think about it, the more I feel that his views are the mainstream of the evolution of medical thought and that it is twentieth-century technological medicine that has taken an alternative path, one that has led to an economic dead end. If medicine is to come back into alignment with the great healing traditions and satisfy the needs and desires of those who are sick, it must rediscover the truths that Bob Fulford expresses . . ."

Learning Objectives:

At the end of this session, participants should:

- Design a treatment plan using the basic concepts taught in the course
- Utilize the percussion vibrator on any area of the body for any age patient
- Apply the basic concepts taught to make treatments easier, more effective, and quicker.

Course Location:

Midwestern University, Chicago College of Osteopathic Medicine
555 31st St, Downers Grove, IL 60515

The program anticipates being approved for 14 hours of AOA Category 1-A CME credit pending approval by the AOA CCME

Hotel Accommodations: (within 3 miles of campus)

Marriott Suites: 630/852-1500
Doubletree Suites: 630/971-2000
Comfort Inn: 630/515-1500
Holiday Inn: 630/810-9500

Registration Form

Dr. Fulford's Advanced Percussion Course

April 24-25, 2004

Full Name _____

Nickname for Badge _____

Street Address _____

_____

City _____ State_____ Zip_____

Office phone # _____

Fax #: _____

By releasing your Fax number, you have given the AAO permission to send marketing information regarding courses via the fax.

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AOA # _____ College/Yr Graduated _____

I require a vegetarian meal ❒

(AAO makes every attempt to provide snacks/meals that will meet participant's needs. However, we cannot guarantee to satisfy all requests.)

Registration Rates

	On or Before 3/25/04	After 3/25/04
AAO Member	$400	$500
Intern/Resident/Student	$300	$400
AAO Non-Member	$605	$705

AAO accepts Visa or Mastercard

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Date of Expiration _____

Signature _____

Clinical Jones Strain-CounterStrain I for the Spine and Rib Cage June 4-6, 2004 Indianapolis, Indiana

Edward K. Goering, DO
Program Chair, Co-author of *Jones Strain-CounterStrain*

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

Course Description: Level II

Clinical Strain-CounterStrain I is an exciting presentation of a proven clinically effective experience modality for every practitioner. Dr. Goering brings clinical experience from years of practice as well as over 7 years of direct instruction from Dr. Lawrence H. Jones. He has taught throughout the United States as well as international venues. His clinical understanding helps participants appreciate the clinical application of Strain-CounterStrain as taught by its discoverer, L. H. Jones, DO. During the 20-hour course, participants will discuss the theory of somatic dysfunction and manipulation. A very specific presentation of the classic Jones Strain-CounterStrain will be provided as it impacts common clinical problems. The applications of this technique will be demonstrated in multiple clinical examples upon which the student can build an evaluation and treatment. There will be a full presentation of cervical, thoracic, and lumbar spine, as well as the ribs and sacrum. There will also be hands on laboratory time for participants to practice their newly acquired knowledge as they develop skills with each other. A brief review of documentation and coding will be provided.

***Prerequisites*:** Functional Anatomy; One Level I course or equivalent

Learning Objectives:

The participants will be able to clearly discuss the physiology of somatic dysfunction and manipulation as it relates to Strain-CounterStrain in a real-life clinical setting. They will be able to assess a patient for somatic dysfunction utilizing Strain-CounterStrain and determine an appropriate treatment sequence and perform that treatment. Clinical application of this information can be made after the course.

Program Time Table:

Friday, June 4 ..... 8:00 am – 5:30 pm
Saturday, June 5 ..... 8:00 am – 5:30 pm
Sunday, June 6 ..... 8:00 am –12:30 noon

(Friday & Saturday include (2) 15 minute breaks and a (1) hour lunch; Sunday includes a 30 minute break.)

Course Location:

The Radisson Hotel City Centre

Hotel Accommodations:

The Radisson Hotel City Centre
31 West Ohio Street, Indianapolis, Indiana 46204
Room Rate: $125 single/double
Reservation Phone: 317/635-2000
Cut off Date: May 4, 2004

Registration Form
Clinical Jones Strain-CounterStrain I
June 4-6, 2004

Full Name _____

Nickname for Badge _____

Street Address _____

_____

City _____ State _____ Zip_____

Office phone # _____

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By releasing your Fax number, you have given the AAO permission to send marketing information regarding courses via the fax.

E-mail: _____

AOA # _____ College/Yr Graduated _____

I need AAFP credit ❒ I require a vegetarian meal ❒

(AAO makes every attempt to provide snacks/meals that will meet participant's needs. However, we cannot guarantee to satisfy all requests.)

Registration Rate	On or Before 5/6/04	After 5/6/04
AAO Member	$550	$650
Intern/Resident	$450	$550
AAO Non-Member	$755	$855

AAO accepts Visa or Mastercard

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Date of Expiration _____

Signature _____

A Case of Right First Rib Somatic Dysfunction Diagnosed and Treated

Through cooperative care*: CDR James A. Lipton, MC, USN,** Michele Neil, MSIV***, Brendon Drew, MSIV**** and Claudia McCarty DO****

* "The opinions expressed in this article are those of the authors and do not reflect the official policy or position of the Department of the Navy, Department of Defense or the United States Government." "I am a military service member. This work was prepared as part of my official duties. Title 17 U.S.C. 105 provides that Copyright protection under this title is not available for any work of the United States Government. Title 17 U.S.C. 101 defines a United States Government work as a work prepared by a military service member or employee of the United States Government as part of that person's official duties."

Presented is a case, which illustrates the importance of recognizing that elevation of the first rib exists as somatic dysfunction treatable without surgery. Osteopathic physicians are taught that first rib somatic dysfunction can present both as a lone entity and at times can be part of a larger syndrome depending on severity and related conditions. Recognition and treatment of this somatic dysfunction can be accomplished cooperatively. This case illustrates through exhaustive workup that the diagnosis of an elevated first rib is clinically significant and palpable. Elevation of the first rib can be considered along with all other known disease processes, and with multilevel symptoms and signs in presentation.

History

A 23-year-old, right-handed, active duty, black male Petty Officer Third Class Hospital Corpsman presented to the Division of Physical Medicine and Rehabilitation with a chief complaint of right shoulder pain for 10 months. According to the patient, his pain originated from where his right trapezius met his right shoulder and was felt to be coming from inside his neck and making his right arm weak. He complained of his right arm feeling cooler than his left. There were no complaints of loss of control of bowel or bladder. He noted that he had injured his right shoulder in 1993 by dislocation and occasionally his left elbow would swell. There was no recurrence of dislocation and no surgical repair either of his shoulder or any other part of his body. The patient denied any history of fractures. Past medical history was significant for maxillary sinusitis (documented on MRI in September of 1999) and right hand and knee pain in May of 1998. MRI of the right hand and knee was negative, as was electromyography performed by a physical therapist for median neuropathy with no EMG report to review. Remaining medical history was negative for hypertension, cancer, diabetes, tuberculosis, thyroid or sickle cell disease. The patient described his worst pain with this complaint as 70 out of 100 with 0 being no pain and 100 being enough to black out. The patient denied tobacco or alcohol use or abuse. He had a motor vehicle accident in 1997 without sequellae. He was single and had no children. The patient noted he was in bed nightly at 2200, asleep by 0100 and up for the day at 0430.

Review of the record revealed the patient had been through extensive evaluations provided by orthopedics, rheumatology, neurology, dermatology, and vascular surgery. The following differential diagnoses were considered in the record reviewed: Carotid Artery Disease, Human Immunodeficiency Virus, Seronegative Spondyloarthritidites, Thyroid Disease, Carpal Tunnel Syndrome, Transient Tenosynovitis, Raynauds Disease, Systemic Lupus Erythematosis, Rheumatoid Arthritis, Ulnar Neuropathy, Subclavian Steal Syndrome, Subcoracoid Bursitis, Recurrent Shoulder Dislocation, Rotator Cuff Tear, Fibromyalgia, Dermatomyositis, Keloid Formation, Reflex Sym-

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pathetic Dystrophy and Thoracic Outlet Syndrome. All labs ordered proved negative and included: complete blood count, ESR, Denver Panel, C3, C4, C reactive protein, HIV, Chem 17, rheumatoid factor, antinuclear antibody, cryoglobulin, thyroid stimulating hormone and urinalysis. Diagnostic imaging proved negative and included: Duplex Ultrasound of the Carotids and right upper extremity, radiographs of the cervical spine, shoulder, chest, and lumbar spine as well as MRI of the cervical spine, and shoulder. Sphygmomanometer readings in bilateral upper extremities were normal and symmetrical.

The patient had received a physical therapy evaluation and treatments, which included one month of range of motion exercises and electrical stimulation for the right upper extremity and neck, without relief. The patient had been prescribed at various intervals, piroxicam, indomethacin, cyclobenzoprine, naproxyn sodium, propoxyphene/acetaminophen, ibuprofen and neurontin all in doses widely accepted for use in patients with his working diagnoses. His medications were generally ineffective though at times able to lessen his pain to as low as 45 out of 100. He had been placed on a limited duty board for 8 months due to expire in January 2001. The patient presented on 16 November 2000 in 70 out of 100 pain on his medication. His vascular surgeon at the present time referred him to receive treatment with osteopathic manipulative medicine (OMM).

Physical Exam

Directed pertinent negatives on physical exam included a negative Allen's and Adson's test. Directed pertinent positives included a right greater than left cooler extremity, an elevated first rib on the right, restricted ribs numbered three through six and extension somatic dysfunction noted at cervical vertebrae three (rotated right and sidebent right) and five (rotated left and sidebent left). Leg lengths were symmetrical as were the anterior superior iliac spines and the sacral base was level.

Impression

Working diagnoses now included cervical and rib somatic dysfunctions, sleep deficit, reflex sympathetic dystrophy as well as the need for further evaluation and treatment. OMM was prescribed and administered first to the cervical and lower rib somatic dysfunctions with correction but no relief of the chief complaint. When OMM was administered to the first rib correcting the somatic dysfunction immediate pain relief resulted down from 70 to 25 on a scale of 1 to 100 (1 being the least amount of pain and 100 being the greatest amount of pain). Immediate warming of the right extremity occurred. To further explore the working diagnosis, a repeat EMG was ordered (performed by the author). MRI of the head was ordered to explore the possibility of cranial nerve or parenchymal involvement along with a triple phase bone scan to assess for reflex sympathetic dystrophy. Hydroxizine hydrochloride was prescribed to assist with sleep and anxiety. Use of the pool was encouraged 3 to 5 times per week to mobilize the rib cage along with postural exercises. Follow up in one month was scheduled. The patient presented for his second treatment on 18 December 2000. The pre-treatment pain score was a 70 out of 100. He had remained at 25 out of 100 from 16 November 2000 through 23 November 2000 for one week. From 24 November 2000 through his appointment time on 18 December 2000 his pain level was a 70 out of 100 for 3 weeks. He was treated with OMM correcting an elevated first rib and EC3RRSR and RC5RLSL. His post-treatment pain score was 30 out of 100. A full thyroid was evaluated with thyroid function tests and a thyroid scan, which were normal. The patient followed up on 15 January 2001 for treatment number three and presented with an essentially negative MRI of the head (7mm pineal cyst), and a negative triple phase bone scan. The patient's pre-treatment pain score was 30% (comfort level 70%). He had remained at this level since 18 December 2000 for 30 days after his second treatment. Both extremities were symmetrical in temperature, sensation strength and circulation. The right first rib was manipulated using high velocity low amplitude (HVLA) technique following muscle energy and HVLA to relieve some minor cervical somatic dysfunction. The post-treatment pain score was 20 out of 100. The patient was directed to return in 2 weeks to 1 month. The patient was followed up on 20 February 2001 for a fourth treatment. His pre-treatment pain score was 20 out of 100 and had been so for over 30 days. His post-treatment pain score following OMM for the first rib was zero, on a scale of 1 to 100. On 29 March 2001 the patient received his fifth and final treatment. He had been 0 on a scale of 1 to 100 for 17 days and 15/100 for the following 13 days. He felt so good that he played basketball for the first time everyday for a week then raising his pain score the day of his fifth treatment to 40/100. Following treatment number 5, he left the office with a pain level of 0 out of 100. He was also given instructions to use the pool (instead of daily basketball games) to maintain proper position of the first rib.

Discussion

Traditionally, first rib problems have been considered by the medical community in the context of thoracic outlet syndrome (TOS). The definitions of thoracic outlet syndrome have been reviewed including the suggestion that

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TOS has been both underdiagnosed[92] and overdiagnosed.[132] TOS has been defined as:

a) A compression pattern affecting either the upper or lower roots of the brachial plexus.[91]

b) The compression syndromes called scalenus anticus, costoclavicular, hyperabduction and Paget-Schroetter Syndromes.[34]

c) Paget-Schroetter Syndrome (effort thrombosis) including venous compression or thrombosis at the thoracic outlet.[50,122]

According to Press[82] and Parziale et al,[79] William Harvey in 1627/1628 described a patient with signs and symptoms compatible with TOS. More recently, 3 main sites of compression have been described which include:

1) Costoclavicular space between the clavicle and the first rib (costoclavicular syndrome)

2) Triangle between the anterior scalene, middle scalene and the upper border of the first rib (anterior scalene syndrome)

3) Angle between the coracoid process and the pectoralis minor insertions (hyperabduction syndrome or pectoralis minor syndrome). The differential diagnosis of TOS must rule out damage to C8/T1 and involve consideration of other entities such as herniated cervical disks, spondylosis, Pancoast's tumor, labral, rotator cuff and other shoulder pathology, median and ulnar neuropathies and neurofibroma.[23,82,136]

Familiarity with the anatomy of the thoracic outlet reveals significant narrowing of the costoclavicular space can occur with postural maneuvers as demonstrated by a helical CT. Postero-anterior displacement of the subclavian vessels was the change seen most.[86] Fibrous muscular and osseous structures with the potential to entrap the brachial plexus occur within the thoracic outlet of normal patients, which may or may not produce TOS.[85] Abduction significantly reduces the distance between the anterior scalene and the clavicle. Venous compression is universally present with this maneuver. Arterial narrowing occurs less often and in a minor fashion. Minor changes in TOS dimensions may produce venous compression without movement.[69] Shoulder pathology must be considered in patients with TOS.[57] TOS can be described from a myofascial standpoint involving the scalene and smaller pectoral muscles. The use of thermography has been explored to assist with diagnosis in demonstrating pathology in views of the hand. Global changes involving the hand suggest autonomic or vascular involvement while dermatomal distribution suggests neurologic involvement.[111] Over the years, patients presenting with cervical radiculopathy without neurologic findings and negative MRI have suffered from a variety of symptoms, neck pain, headaches, lightheadedness, pain and tingling which may include the shoulder and hand and the following signs including muscle spasms, rigidity, decreased ROM. These symptoms are sometimes referred to as Scalene Entrapment Syndrome.[94]

Diagnostic tests have been reviewed for efficacy with regard to TOS: Examination in abduction by MRI in an open scanner can assist in diagnosis. Symptoms due to TOS may only be present in abduction and is not amenable to study by conventional MR scanners.[108] Symptoms and signs in TOS can be common to other diagnoses. One study of 315 patients with cervico-brachial symptoms showed 207 had TOS and 108 did not. Ninety-four percent of TOS patients had at least 3 of the 4 following signs:

1) Exacerbation of symptoms with the arm elevated

2) Ulnar paresthesias

3) Brachial plexus tenderness

4) A positive "hands-up test." Of note, the Adson's test was not considered indicative of pathology.[87]

MRI with MRA can demonstrate the anatomy of the brachial plexus as well as vascular compression or occlusion.[26] Three-dimensional computerized scans can reveal dislocation of the first rib.[64] A cervical rotation lateral flexion test has been described to examine patients with TOS.[63] Intravascular ultrasound can be used in the evaluation of TOS.[12] The use of MRI has potential value in the diagnosis of TOS by revealing nervous or vascular distortion, radiographically invisible or clinically significant bands or ribs.[78] The axial rotation and simultaneous lateral flexion of the cervical spine can be used in the evaluation of thoracic outlet function. The test can illicit pain from the first thoracic transverse process bumping against a subluxated first rib.[61] Cineradiography can also demonstrate hypomobile first ribs and this can also be elicited by palpating the first rib just beneath the clavicles on an expiration and inspiration test.[60] A complex series of TOS abnormalities may be studied using digital subtraction angiography. Additionally, chest radiograph can detect fractures of the first rib through indirect signs, including extrapleural fluid collection, pleural effusion, and soft tissue mass.[44] Analgesic cervical disk puncture may assist in the diagnosis of TOS. In patients whose puncture is positive, symptoms remain unchanged after surgery while patients with a negative test had excellent postoperative results.[47] Doppler ultrasonography can be a valuable tool in studying TOS.[81] In the evaluation of TOS with arterial symptoms involving the subclavian artery, Doppler flow studies and arteriogram are useful; with venous involvement of the subclavian vein, venous flow studies and venogram are useful; with neurogenic symptoms involving the lower trunk of the brachial plexus electrodiagnostic tests are useful; and in symptomatic patients in general, use of the history and provocative tests on physical exam are useful, including the[91]

hyperabduction external rotation test, which evaluates the three main sites of compression in TOS. On physical exam, there are a number of tests which have been described to evaluate scalene entrapment, including the scalene-cramp test, scalene-relief test and finger-flexion test.[94]

Historically TOS and TOS with related conditions such as reflex sympathetic dystrophy have been associated with many precipitating causes. These causes include: trauma, like motor vehicle accidents[68,84] congenital anatomy such as supernumerary subclavius posticus, as a causative factor for Paget-von Schrotter syndrome,[2,29] masses such as costoclavicular, exuberant callous formation following clavicle fracture,[25] desmoid tumor,[30] ipsilateral subclavian steal and TOS syndromes can exist (as confirmed by arteriography and electrodiagnostic testing,[127] venous thrombosis,[17,31] effort thrombosis,[67,126] venous stenosis,[132,133] aneurysms of the subclavian artery[34] and association with cervical ribs and exertion[34] schwannoma of the C7 nerve root,[4] compression with double crush phenomena, (sometimes producing bilateral TOS), combination with bilateral radial tunnel syndrome[83,134] or the more common CTS,[134] pacemaker lead fracture,[114] anomalies of the first rib,[37] athletic injury[45] pseudoarthrosis[6] or associated with acute arterial obstruction, thrombus formation, aneurysm or embolism[42] and tumor of the first rib.[70]

Therefore there are numerous treatments, which have been tried over the years.[125,18] Studies of surgical treatments reveal that first rib resection with scalenectomy are curative for most TOS patients whose symptoms are caused by compression of the brachial plexus.[89] A review of 409 patients showed transaxillary rib resection in 380 patients (83%) and supraclavicular thoracic outlet decompression in 29 (7%). There were 8 complications of surgical interventions (1.9%). Seventy-eight percent of patients with symptoms of neurologic TOS in the follow up group improved, 21% had complete relief, and 32% had good relief, 25% had fair relief, and 22% showed no improvement.[43] Surgical decompression was more successful when TOS was traumatic or subacute.[117] A review of the literature and a survey of vascular surgeons reveals that primary subclavian/axillary vein thrombosis occurs mostly (approx 70%) following unusual exercise or dominant arm positioning in such patients, and most have severe symptoms and anticoagulant therapy is not affective. These patients can be considered for catheter directed thrombolysis. Other considerations include percutaneous translum inal angioplasty or stents. Removal of the first rib may have lost its popularity in the treatment of post thrombotic occlusion of subclavian segments as a lone approach in the absence of objective proof of positional collateral obstruction.

During a 28-year period 637 patients underwent 770 supraclavicular first rib resections and scalenectomies for TOS (92% were neurologic and 8% were vascular). Of the 8% that were vascular, 6% were venous and 2% were arterial. An excellent response was achieved in 59%, good result in 27%, fair in 13% and poor results in 1% (95 cases). Two percent required reoperation for recurrent TOS (12 patients).[39] Excellent and good results following different operations for TOS are close to 80% or 70% at five years. The results were very close for anterior and middle scalenectomy transaxillary first rib resection and combined supraclavicular scalenectomy and first rib resection. Reoperation improved results 15% for transaxillary rib resection and 17% for anterior and middle scalenectomy. When the initial surgery was combined rib resection and scalenectomy reoperation improved results only 3%. Work related injuries versus non-work-related auto accidents for example showed 13-15% better success rates in the latter group.[100] A strong determinant of success after first rib transaxillary resection was the length of the residual rib stump.[71] One study advocated a radical surgical approach combining scalenectomy and transaxillary first rib resection to minimize the recurrence rate and improve results.[14] Long term follow-up of TOS decompression patients revealed that with transaxillary rib resection patients thought to have neurogenic TOS that 47% of patients with a history of trauma returned to pre-illness activities versus 78% without trauma in the history. Seventy two percent of the trauma patients were satisfied versus 83% of the non-trauma patients.[33] One study refuted the need for combined supraclavicular and transaxillary approaches finding the transaxillary approach alone was satisfactory.[124]

With regard to deep vein thrombosis of the axillary-subclavian veins phlebography was helpful in suspected arm DVT. Primary DVT is treated with anticoagulants.[58] The technique of scalenotomy yielded 100% excellent results in one study of 119 patients.[28] First rib resection is considered the primary decompressive procedure. Good and satisfactory results were obtained in up to 89.7% of patients studied.[102,74]

Critiques of surgical treatments reveal the need for strict preoperative criteria in use of the preferred transaxillary approach when symptoms are found to disappear in only 47% of patients studied.[139] One study found TOS only rarely to be caused by osseous anomalies. The definition of TOS as a soft tissue disease, where the c-8 and t-1 roots or the proximal inferior trunk of the brachial plexus is compressed by fibromuscular anomalies is felt to be a clinical diagnosis. If surgery is recommended it

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should be directed to these anomalies and not to the first rib. Transaxillary rib resection carries serious complications, most frequently brachial plexus injury.[88] Removal of the first rib is not recommended when thorough removal of the scalene musculature and other myofascial anomalies via the supraclavicular approach can be performed for patients with neurogenic TOS requiring operative intervention.[11,97] Of the 4 operations studied to address recurrence of TOS, transaxillary rib resection, supraclavicular first rib resection with neurolysis, scalenectomy with neurolysis and brachial plexus neurolysis complications included temporary plexus injury (0.7%), temporary phrenic nerve palsy (3.7%), and permanent phrenic nerve palsy (1.4%). The combined primary success rate of all 4 operations for recurrence was 84% in the first 3 months, 59% at 1 to 2 years, 50% at 3-5 years, and 41 % at 10-15 years. There was no difference between operations for recurrence and better results were obtained when recurrence was due to trauma vice spontaneous and without neck injury involved.[99] Transection of the phrenic nerve may occur during decompression of the thoracic outlet.[35]

Other treatment approaches have included stretching of muscles, mobilizing the first rib and clavicle and improving posture and muscle tone.[82] For vascular TOS, thrombolysis, anticoagulation, surgical decompression, and endovascular procedures can act synergistically to improve the results of therapy.[15,122,98,99,50,80,3] Not all patients with primary axillary subclavian vein thrombosis require surgical intervention as some do well with a period of observation and oral anticoagulation.[56] A patient with subclavian vein thrombosis can be treated successfully by transluminal angioplasty.[9] Dorsal sympathectomy has been used in patients with TOS using video assisted thoracic surgical methods.[123] Supraclavicular brachial plexus neurolysis without first rib resection for post-traumatic TOS has been used as well with the suggestion that brachial plexus compression best describes the pathology.[21]

Treatment failures have been reviewed: 77 patients with 84 operated limbs were followed at an average of six years, status post first rib resection for TOS 50% were totally asymptomatic after surgery, and remained asymptomatic for 6 months. In long term follow up, 11 limbs had the same symptoms as before the operation. Results suggest that monotonous deskwork is an important factor in recurrence[62] 13 of 100 patients treated for TOS with first rib resection developed "snapping scapula syndrome." [136] Other complications of first rib resection included winging of the scapula.[135] A review of 100 patients with TOS treated with first rib resection, including many with double crush syndrome, revealed 90% good and excellent results.[53] indications for reoperation include persistent pain, ulnar nerve conduction velocity of 60m/sec or less with normal being 72 to 82 m/sec and failure of appropriate physical therapy. Reoperation involved neurolysis, dorsal sympathectomy and decompression.[121] In this author's experience a conduction velocity of 60m/sec would not be a reliable indicator of significant pathology. Abnormal kinesiology contributes to the reoccurrence of TOS even after resection of the first rib.[62] Reappraisal by experienced surgeons has lead to a reevaluation of the indications for surgical intervention. Complications involving the brachial plexus and the subclavian vessels have resulted in widespread litigation.[64,65]

Osteopathic Treatment: Activation of the scalenius can restore movement of the first rib.[60] The use of osteopathic manipulative treatment can be of use in the treatment of TOS.[23,54,38,112] Vigorous stretching and myofascial release manipulation can be used to treat TOS.[111] TOS involves more than just neurovascular compression. A variety of osteopathic somatic findings can be treated with a variety of OMM treatments.[113] TOS may be treated successfully with myofascial release and self-stretching exercises.[112]

Conclusion

Certain conclusions have been reached in the past study of TOS (Dale 1975). Elevation of the first rib is addressed in the training of every osteopathic medical student. The sequellae of an elevated first rib can range from asymptomatic to discomfort to the cause of thoracic outlet syndrome. This case study is an example of a confirmed diagnosis of first rib somatic dysfunction treated and relieved without surgery through osteopathic principles and practice. Allopathic and osteopathic physicians worked the patient up and by the evidence accumulated were able to localize and verify the source of the patients problem. Had osteopathic manipulation not been an option, the patient was next to undergo removal of the right first rib by the allopathic vascular surgeon who referred the patient for manipulation. The patient instead returned to full duty without the need for surgery.

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The Still Technique

Applications of a Rediscovered Technique of Andrew Taylor Still, MD

July 23-25, 2004

Lewisburg, West Virginia

Richard L. Van Buskirk, DO, PhD, FAAO
Program Chair and **author of *The Still Technique Manual: Applications of a Rediscovered Technique of Andrew Taylor Still, MD***

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

Course Description: Level II

Innovative approach using combined (indirect-direct) techniques in the treatment of common clinical somatic dysfunction.

***Prerequisites*:** Functional Anatomy; One Level I course or equivalent

Learning Objectives:

By the end of this course the attendee will know:

- the history of the Still technique, its loss and recovery;
- the underlying method;
- segmental diagnostic techniques that are shared by this technique with HVLA and muscle energy techniques as well as those unique to the Still technique, and
- specific applications of the technique to the cervical, thoracic, and lumbar spine, ribs, pelvis, extremities, muscles, and tendons.

Program Time Table:

Friday, July 23 ..... 8:00 am – 5:30 pm
Saturday, July 24 ..... 8:00 am – 5:30 pm
Sunday, July 25 ..... 8:00 am –12:30 noon
(Friday & Saturday include (2) 15 minute breaks and a (1) hour lunch; Sunday includes a 30 minute break.)

Course Location:

West Virginia School of Osteopathic Medicine
400 N. Lee Street, Lewisburg, WV 24901

***Hotel Accommodations*:** located near WVSOM

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The Neuroendocrine-Immune Complex Illustrated in the Work of Dr. Frank Chapman

John D. Capobianco, DO, FAAO

Abstract

Chapman's reflexes represent a classic modality of treatment in osteopathic medicine. First developed by its namesake, a comprehensive work delineating the author's work was furthered by his wife, Dr. Ada Hinckley Chapman, her brother, Dr. Charles Owens and Dr. W.F. Link as outlined in *An Endocrine Interpretation of Chapman's Reflexes* (AEICR) in 1937. Implicit in the title, this work includes the "pelvic-thyroid cycle"[1], which later evolved into the "pelvic-thyroid-adrenal syndrome" (PTAS) and greatly influenced the work of Drs. Beryl Arbuckle[2], William Gardner Sutherland[3], Harold Magoun Sr.[4], Fred Mitchell, Sr. and Jr.[5], and Robert Fulford. Numerous references will be cited to the endocrine, lymphatic, autonomic and musculoskeletal systems in Chapman's work. The relationship of the tripartite theory of the pelvic-thyroid-adrenal cycle and the neuroendocrine immune complex (NEIC) will be discussed. The NEIC may be defined as a "bi-directional communication and serves to tie the neuroendocrine and immune systems into one, very complex, multifunctional network for defense of the homeostatic processes"[6]. An example of a bi-directional mechanism is the stress of illness illustrated by the hypothalamic-pituitary-adrenal (HPA) axis. Corticotropin releasing hormone (CRH) in the hypothalamus activates adrenal corticotropin releasing hormone (ACTH) in the anterior pituitary, which in turns stimulates the release of cortisol from the adrenal cortex. Cortisol inhibits the release of ACTH from the anterior pituitary. Another demonstration of the bi-directional nature of the NEIC is the production of ACTH and CRF from immunocytes, which both stimulate the adrenal gland and also down-regulate the immune response.[7] The principles of the NEIC may support the scientific basis of Chapman's reflexes. The work of Dr. Chapman utilizes the concept of homeostatic mechanisms by uniting physiologic reflexes with one of the most important and accessible organs for the osteopathic physician, the musculoskeletal system.

Key Words

Chapman's Reflexes, Neuroendocrine-Immune Complex (NEIC), Pelvic-Thyroid Cycle, Pelvic -Thyroid-Adrenal Syndrome (PTAS), An Endocrine Interpretation of Chapman's Refiexes, (AEICR).

Background

Frank Chapman entered the American School of Osteopathy in 1897. As a student of Andrew Taylor Still, his work was certainly influenced by the unrecognized potential of the lymphatic system. Dr. Chapman expounded upon the work of A.T. Still and developed a schema for diagnosis and treatment that, in hindsight, can be considered "viscerosomatic" and "somatoviseral" in nature. The most obvious, outward manifestations of the above are "gangliform contractions" which can be considered neuro-lymphatic myofascial expressions of (and opportunities for treating) systemic disorders. "Neuro" denotes the sympathetic arm of the autonomic nervous system. "Lymphatic" relates to immunity and it's submission to unbridled sympathetic impulses. "Myofascial" speaks to the palpable tissue texture reactions situated mostly in the intercostal regions anteriorly and spinal region posteriorly, but may extend onto the extremities. Recognition and knowledge of the endocrine system were essential to the totality of the involuntary mechanisms of the human body according to Chapman. In the Owens treatise, *An Endocrine Interpretation of Chapman's Reflexes* (AEICR) there is a strong emphasis on the importance of the endocrine system consisting of the "broad ligament, uterus, gonads, thyroid and adrenals".[8] Further, Chapman emphasizes the correction of "bony lesions", specifically the pelvis (and its accompanying gonads, the ovaries and testes) via the innominates. The co-authors of the Chapman manuscript advised the "fundamental importance of the sacroiliac lesion as probably the most potent predisposing factor in bodily ills… {and}… cognizance of the newer knowledge of the endocrine system…by means of Chapman's reflexes…"[9]. This tripartite system, more aptly called the "neuroendo- ➔

crine-immune" system, forms the basis of Dr. Frank Chapman's work. To the astute observer, however, one would add the musculoskeletal system as the organ that binds this mass network of the multi-directional interaction of molecular messengers involved in the neuroendocrine immune complex. According to Robert G. Thorpe, DO, FAAO, "We can give lungs, blood vessels, heart, liver, intestines, glands, and skin to a brain in a jar and it will give orders to them all the result of which would be a jelly-like quivering. The organ needed to act and interact with the environment is the musculoskeletal organ, the organ of behavior. Without it, our brain-mind is nothing. With it, our brain-mind is a person"[10]. In summary, Dr. Frank Chapman had charted a therapeutic modality based upon the interconnectedness and potential of human physiology and anatomy.

Methods

Chapman's reflexes are manifested by gangliform contractions, which may best be defined as hypercongestions within fascia due to lymph stasis secondary to visceral dysfunction. This represents a viscerosomatic reflex. In *An Endocrine Interpretation of Chapman's Reflexes* this somatic dysfunction has been described as feeling like a nodule ranging in size from a "BB" pellet to a pea that is innervated and mediated by the sympathetic nerve fibers. There are three components to a "receptor organ" or Chapman's gangliform contraction. The first is neurological represented by a reflex mediated by sympathetic fibers. The lymphatic capillary and valves are innervated by the sympathetics. Sympatheticotonia may lead to constriction of the lymphatic vessel. Second is lymphatic as demonstrated by congestion due to sympatheticotonia, which leads to tissue stasis and accumulation of pro-inflammatory substances and increased firing of nociceptors. Thirdly, is the myofascial element. It is through the enveloping layers of fascia surrounding the musculature that the nerves, including autonomics, vessels, including the venules, arterioles and lymphatics, and immunocytes traverse.

What follows is the treatment sequence for the pelvic-thyroid-adrenal syndrome (PTAS) that this author has extracted from AEICR and the work of Dr. Arbuckle. It begins with the diagnosis and treatment of the pelvis, the keystone or foundation of the spine and basis for eventual correction of the neuro-endocrine immune complex (NEIC). Chapman's organ reflexes are diagnosed anteriorly and then posteriorly. The anterior reflexes tend to be along or between the ribs, following the intercostal sympathetic nerve fibers. The posterior reflex is less discrete than the "receptor organ" noted anteriorly but more like the rubbery feel of a classic viscerosomatic reflex, which is 1ocated between the spinous and transverse processes of two vertebrae respectively. The gangliform reflexes are treated anteriorly with a rotatory or circular motion lasting anywhere from 5 to 120 seconds. The therapeutic end point is a softening of the gangliform contraction. If a posterior reflex persists, further treatment is warranted. It is of interest to note that contrary to the original text, AEICR, the more recent teaching of Chapman's reflexes rely almost exclusively on the anterior ribs and spinal region for diagnosis and treatment respectively. What follows is a schematic for treating the PTA axis:

1. **Diagnosis and treatment of the pelvis:**
   - Patient supine, operator at side.
   - Operator places pads of fingers on Poupart's (inguinal) ligament.
   - The side that is more tense is the side of innominate dysfunction.
   - The operator may compare with standing flexion test.
2. **Treatment of innominate dysfunction:**
   - Patient in sidelying position on uninvolved side.
   - Operator behind patient.
   - Operator places inferior arm between legs.
   - Operator places superior arm over PSIS portion of the innominate.
   - Derotate pelvis clockwise for a right posterior innominate.
   - Derotate pelvis counterclockwise for a right anterior innominate.
   - The same principle of treatment applies to the left innominate.
   - [Note the similarity in patient positioning with muscle energy treatment.[11]]
   - Treatment of sacrum may also involve osteopathy in the cranial field.[12]
3. **The lateral thigh (the tensor fascia lata and the iliotibial band):**
   - Reflects one somatosomatic and three viscerosomatic reflexes
     - Sciatic nerve ("sciatica"). This is a somatosomatic reflex.
     - Broad ligament.
     - Prostate.
     - Large intestine.

Note: The lower gastrointestinal and pelvic organs and the lower extremities share the same sympathetic innervation, derived from the cell bodies of the twelfth thoracic to second lumbar spinal regions. The one that is pertinent to Chapman's pelvic-thyroid syndrome are the broad ligament and uterine reflexes.

- Anteriorly, the reflex for the broad ligament can be found from below the greater trochanter on the lateral thigh to slightly above the knee ioint. Posteriorly, the reflex can be found along the iliolumbar ligament.

4. **The Uterus:**
   - Anteriorly, at the junction of the pubic ramus and the ischium. Posteriorly, along the iliolumbar ligament.

5. **The Pelvic (ovary-testes) - Thyroid-Adrenal Syndrome: Specific points**
   - Thyroid: Anteriorly, at the second intercostal space. Posteriorly, between the spinous and transverse process of T2.
   - Adrenal: Anteriorly, about 2.5" above & 1" lateral to umbilicus. This is in the region of the superior mesenteric ganglion. Posteriorly, between the spinous and transverse processes of T11 and T12.
   - Ovary/Testes: Anteriorly, on the upper to lower border of pubes. Posteriorly, between the spinous and transverse processes of T9 and T10.

The PTAS: An Introduction to Chapman's Concept of the NEIC

The coauthors of AEICR state that Chapman presented his work on the endocrine system as early as 1927.[13] Perhaps the earliest recognition of the neuroendocrine-immune connection was modeled after his pelvic-thyroid cycle. These systems, the endocrine and the musculoskeletal, served as "a positive entity not hitherto described in either medical or osteopathic literature, so far as the writer is aware."[14] Indeed, Chapman recognized a link of the endocrine and immune functions early on when describing the thyroid gland bearing an "important relation to the immunity of the body to disease infections."[15] The pelvic-thyroid syndrome addresses the interrelationships of the structure of the pelvis (which houses the testes and ovaries and the resultant testosterone, estrogen and progesterone function) and their influence on the thyroid and adrenal glands. As far as this author can determine, it was Dr. Beryl Arbuckle who added the word "adrenal" in the pelvic-thyroid-adrenal syndrome. As was stated earlier, Chapman and certainly his interpreters understood the importance of the adrenal gland as both a humoral and immune modulator. In her article entitled "Reflexes," which appeared in the *Academy of Applied Osteopathy Yearbook* (1947), Dr. Beryl Arbuckle cites the anatomic proximity of the hypogastric and aortic plexus (not to mention the ganglion impar, which terminates to the far reaches of the coccyx) and thoracolumbar sympathetic outflow tracts to endocrine organs and further to the higher centers of the pituitary.[16] This makes for a complex and not completely understood interaction of the neuroendocrine-immune system. For example, thyrotropin and thyroxin stimulates natural killer cells and produces T-cells respectively.[17] Stress, or the musculoskeletal ready state, is mediated by the sympathetic nervous system and promotes the release of cortisol from the adrenal glands, which also modulate immunocytes.[18] Although a half a century older, the concept of the pelvic-thyroid-adrenal system goes beyond newer, more current notions of the neuroendocrine-immune system by addressing the great interface between man's external (i.e., stress and a subsequent altering of adrenal function) and internal (i.e., metabolism or thyroid function) environment. The musculoskeletal organs role is expressed by the importance of treating the pelvic (the innominate and sacrum) region. Dr. Chapman closely followed the principles taught by his teacher, Dr. A.T. Still, because they bridged the gap between altered physiology and structure. It involves not only the latter element, but also the union of this anatomy with related function that is one of osteopathy's greatest gifts to the basic sciences and our patients.

Research

Chapman's reflexes and their clinical application to the NEIC have been used extensively by those in the osteopathic profession. Scientific research in the field of Chapman's reflexes has not been conducted as thoroughly. Although the actual receptor organ has not been demonstrated histologically, an important study of the use of Chapman's reflexes as they relate to the neuroendocrine arm of the NEIC has been described by Mannino. This study is highlighted in the Drs. Kuchera textbook, *Osteopathic Considerations in Systemic Dysfunction*.[19] In his study, Mannino treated the posterior adrenal Chapman's reflexes (between the eleventh and twelfth thoracic vertebrae) in 45 males, 24-32 years of age, for 2 minutes with rotatory stimulation. The results were a statistically significant decrease of serum aldosterone within 36 hours.[20] Interestingly, Mannino notes that there was no osteopathic correction of the pelvis, a necessity according to the AEICR. The neurological component of this treatment addressed the "positive feedback" of catecholamine release from the adrenal medulla, which is anatomically indistinct to a sympathetic ganglion. The aspect that addresses the endocrine system is the lowering of serum aldosterone. A component of the renin-angiotensin-aldosterone axis, which is vital for blood salt retention and vasoconstriction, it is a marker of generalized vascular tone for blood pressure. Although this would seem to comprise only two-thirds of the NEIC, upon further examination, an immune response may be postulated because aldosterone is a steroid messenger molecule, like cortisol, that suppresses T-cell colony formation in contrast to other agents such as bradykinin, glucagon and luteinizing hor- ➔

mone.[21] The immune system not only is influenced but also effects aldosterone as evidenced by its increase in response to histamine that is secreted by basophils and mononuclear (mast) cells.[22] It should be noted that histamine is a potent vasodilator, creating edema during the inflammatory response. The hypothesis that using Chapman's reflex manipulative treatment to decrease serum aldosterone in order to improve the immune function seems to be supported by scientific research. Numerous references to enhanced immunity from osteopathic treatment can be found in DiGiovanna and Schiowitz's (Eds.) *An Osteopathic Approach to Diagnosis and Treatment*[23] and various journal articles.[24,25] It is the osteopathic physician's role to complete the basic scientific research-clinical outcomes circuit and publish more scientific and case studies on Chapman's reflexes. In the "Osteopathic Treatment of Nephrotic Syndrome," use of Chapman's reflex points in the thoracolumbar region were part of an overall manipulative protocol in a young African American female with IgA nephropathy that was refractory to the standard pharmocological agents. The outcome of this case study resulted in the patient having a substantial diuresis and decrease in a generalized edema, thusly avoiding the use of cytotoxic drugs.[26]

The NEIC- A Specific Analysis of a Tripartite System

Neurological:

The sympathetic response to stress, perceived or real, stimulates the hypothalamus, which activates the HPA axis and may ultimately suppress the function of immunocytes if the initial response is allowed to continue. Cortisol, a circulating byproduct of stress, not only will decrease the function of the body's immune cells but may also cause atrophy of lymphatic nodes.[27] The lymphatics are innervated by sympathetic fibers that serve to constrict lymphatic vessels. Initially, the effect is to propel the lymphatic fluid containing antigens proximally into the central circulation for eventual excretion. Excess sympathetic stimulation, however, can lead to lymphatic stasis and a generalized decrease in the immune response. Furthermore, the effects of the adrenergic nervous system permeates the cells of all the organs in the body. According to Dr. Still in his autobiography: "To know all of a bone in its entirety would close both ends of eternity."[28] Sympathetic activation of the bone increases proliferation of immunocytes.[29] Dr. Chapman saw the body's largest immune organ, the spleen, as second only to the thyroid when it came to immunity. Sympathetic tone to the spleen encourages arteriolar constriction and release of blood and immunocytes into the general circulation.[30] The thymus produces T-cells, the cell mediated response. Activation of sympathetic firing from the cervical and upper thoracic regions may increase thymocyte cell differentiation.[31] Thymosins can limit interleukins via a feedback cycle to the HPA axis. Likewise, thymosin output is influenced by thyroid hormone.[32] This would serve to highlight one more aspect of the role of the thyroid in immunity. The medullary portion of the adrenal should be noted for its capacity to secrete epinephrine and norepinephrine independent of sympathetic stimulation. Catecholamines affect every cell in the body. Sympathetic fibers, however, do not innervate all the cells of the body. The messenger molecules that are produced by the adrenal medulla last 5-10 times longer than the autonomic activation of sympathetic neurons.[33] It is a testament to Chapman that he not only recognized function of adrenal gland as part of the nervous system but also included it in the overall treatment protocol. With all this mention of the autonomic nervous system one may ask: What about the parasympathetics? Drs. Kuchera state that there is no meaningful parasympathetic innervations to the thyroid, adrenal or gonads. Why? One might speculate that the primitive endocrine substances not only behaved dually as intracellular mediator molecules that controlled the internal milieu, but also acted as a sympathetic, protective mechanism from external stimuli. Thusly, "the endocrine and vegetative nervous systems became supplementary to each other."[34] From Pottenger's quote, one may hypothesize that the survival of an amoeba may be dependent upon this primitive sympathetic-endocrine system. However, the added calming effect of the parasympathetic system is necessary for the Homo Sapiens to pause, conceptualize during that pause, and evolve.

Endocrine:

For the purposes of this paper, we have sufficiently covered the HPA axis. In the acute stage, it serves to contain inflammation. During long-term situations, such as chronic illness, it will maintain this "flight or fight" response, perpetuating the autonomia and resultant immunosuppression. It is time to focus on a few other key endocrine organs that are emphasized as important in the AEICR. Firstly, the thyroid gland that serves to produce thyroxine, is a potent immuno-modulator that stimulates lymphocyte function and natural killer cells, augments immunoglobulin synthesis, stimulates the thymus gland and plays an important role in nerve conduction.[35] Thymosin from the thymus gland facilitates the function of the thyroid hormones.[36] This extra-cranial master gland, itself under control from the hypothalamus and pituitary via the hypothalamic-pituitary-thyroid (HPT) axis, influences other bodily humors, immune and nerve cells, which serve to sup-

port Chapman's statement that the thyroid was an immune gland.

The sex hormones, in particular estrogen and testosterone, are secreted from the gonads and are not coincidently, housed in the bony pelvis. Testosterone is also secreted from the zona reticularis of the adrenal gland. Both the pelvis (and its steroid contents) and the adrenals are important in the overall schema of Chapman's pelvic (adrenal) thyroid cycle. For example, estrogen augments the function of immunocytes.[37] Estrogen receptors have been found on the human thymus gland and estrogen can suppress glucocorticoids, all of which may serve to explain why females may have a higher prevalence of autoimmune disorders.[38] Testosterone affects the immune system by checking the production of interleukin 6 in monocytes and has been used to suppress excess B-cell activity in the blood samples of patients with systemic lupus erythematosus.[39]

Immune:

The cells of the immune system secrete neuroendocrine substances. Lymphocytes produce thyrotropin (TSH),[40] in addition to CRF and ACTH. Interleukins behave as growth factors for thymosin.[41] The lymphatic structures that house the cells and substances of immunity are themselves innervated by sympathetic nerve fibers. Dr. Still admonished that: "Finer nerves dwell with the lymphatics than even with the eye."[42] A study by Dowling[43] showed an increase in lymphocytes in the blood of subjects treated with osteopathic manipulation within one hour as compared to controls. Whether by gross mechanical stimulation of the lymphatic vessels or reflex treatment to turn down sympathetic facilitation in order to increase flow capacity of the lymphatic fluids, it is this liberation of the immune cells via lymphatic pump and Chapman's reflexes, which normalizes the inflammatory response that begins to complete the NEIC triad.

Musculoskeletal:
(Completing the Quadra)

As stated earlier, messenger molecules bouncing around in test tubes are not the same as those interacting in the dynamic milieu of a patient. Dr. Chapman and his interpreters emphasized the role of the pelvis, not only as Arbuckle demonstrated via the ganglion impar's connection to the higher centers of the brain and organs, but also realizing that the pelvis houses the gonads, which produce active immune substances. Dr. Still saw the function of the pelvis not only in terms of endocrinology but also the connection of the coccyx to what is presumably the terminus of the sympathetic nervous system, the ganglion impar. He postulated the outcome if someone fell onto his/her buttocks: "The wedge-formed sacrum between the two innominate bones would be driven downward toward the ischii one-fourth, one-half, or one whole inch. What effect would it have on the shape of the coccyx, the coccygeal ligaments being fastened to the innominate? Would it not leave the coccyx bent in and upward? What effect would it have on the sacral nerves? The whole *glandular* system?" [author's emphasis][44] A.T. Still's teachings serve as the intellectual basis for Dr. Chapman's pelvic-thyroid cycle; the NEIC interlocked to the musculoskeletal organ.

Case Study

The purpose of the following case study is to demonstrate the usefulness of Chapman's reflexes in everyday clinical practice in a patient who presented with an acute illness, subclinical hypothyroidism and somatic findings consistant with an altered neuroendocrine-immune complex.

A 57-year-old white female presented with a 4-day history of sore throat, aphonia, productive cough, discharge from the corners of the eyes for which she is "taking some drops," and malaise. Her history was significant for a borderline high thyroid stimulating hormone (TSH) at 5.0 MCIU (normal = .4-4.0) She denied fever or chills or loss of appetite. She is G3P3, denied gynecological surgery and was taking no other medications. Her vitals were: temperature at 98.1°F; blood pressure-110/72; respirations-12; pulse-82. The patient appeared toxic and pale. Laboratory findings were significant for hemoglobin of 11.6. Pulse oximeter on room air was 98%. Rapid enzyme test for streptococcus was negative. Examination revealed reddened anterior pharyngeal pillars, but no exudates in either the throat or eyes. No lymph nodes or thyroid nodules were palpated. The heart rate and rhythm were regular without any murmurs. Lungs were clear to auscultation and percussion. The abdomen was soft, non-tender with bowel sounds noted in all quadrants. Rectal examination revealed hardened feces but was without masses, fissures, or hemorrhoids. Guaiac for occult blood was negative. Osteopathic findings revealed a hyoid shifted to the left. Gangliform contractions were palpated on the second intercostal space, the left being more prominent and more lateral, extending to the upper border of the second rib. The soft tissue overlying the transverse processes of the second and third thoracic vertebrae were noted to have a "rubbery" feel. A mildly tender gangliform contraction was noted in the left periumbilical region, about two inches superiorly and laterally to the rectus abdominus muscle. The right innominate was rotated anteriorly on the right with a corresponding right sacroiliac joint restriction. The assessment follows:

One: Upper respiratory tract infection, with laryngitis probably second-

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ary to a adenovirus.

Two: Acute anemia, probably secondary to viremia.

Three: Cough, secondary to posterior pharyugeal drip and upper respiratory infection.

Four: Somatic dysfunction of the cranial (hyoid), rib, thoracic, abdomen, and pelvic regions.

The treatment plan included direct myofascial release to the hyoid, trachea and anterior cervical fascia. Chapman's reflexes were treated by a rotatory motion in the second intercostal space, left second rib area and the left periumbilical region. Scapular lift and a rotatory motion were given to the upper thoracic segmental dysfunctions. Muscle energy and sacroiliac joint gapping were performed on the innominate and sacrum. Followup occurred in 48 hours at which time the patient's temperature had returned to her baseline of 96.7°F, and her hemoglobin had risen to 12.4. She did not appear to have her previous pallor. This author's experience is that patients who are hypothyroid do not mount a detectable temperature spike in the beginnings of an illness and this may explain why this patient did not have even a low-grade temperature increase upon presentation. A marked decrease in the pharyngeal erythema along with normal and clear thoracic organ sounds were recorded. The patient reported feeling better and regaining her speech the night of the treatment. The patient reported only minimal cough and no sore throat, and some left upper back pain, which was of a longstanding nature. She returned to work the next day and resumed her exercise program in 48 hours.

The osteopathic approach to this patient included the pelvic-thyroid-adrenal connection that was used by Chapman and those who were influenced by him. The author sought to defacilitate the sympathetic input from the intercostal nerves back to the spine. Korr described the spinal cord as a potential "neurologic lens,"[45] not only a relay station, but a processor, amplifier, and transmitter of neuronal disharmony, creating a lowered threshold for synaptic firing. The goal of the treatment was to decrease arteriolar, venous and lymphatic endothelial constriction in the affected organs, in this instance the thyroid, adrenal and oropharyngeal organs, which as was discussed, can enhance immunocytes if stimulated (the thyroid) or immunosuppress lymphocytes if chronically over stimulated (the adrenal cortex). More, the tonsils and adenoids produce B-cells and act as the first immune gland that foreign organisms encounter as they enter the mouth. The anterior cervical fascia is key for lymphatic drainage from the oropharynx. The correction of the pelvis, which includes the innominates and sacrum, cannot be overemphasized due to its proximity to the ganglion impar and the organs of reproduction which produce steroid sex hormones, themselves immuno-modulators. In this instance, the patient with a history of a borderline endocrinopathy presented with an acute infectious process and anemia. The treatment sought to maximize the homeostatic mechanisms of the neuroendocrine-immune system with osteopathic manipulative treatment. The clinical outcome was favorable, rapid, cost effective, and without adverse side effects.

Conclusion

The concept of the neuroendocrine-immune complex interfacing with the musculoskeletal system was at the very least developed by Dr. Frank Chapman over 70 years ago with the concept of the pelvic-thyroid cycle. His ideas followed closely to those of osteopathy's founder, Dr. A.T. Still, who was quite specific regarding the neurological and endocrine ("glandular") connection to the innominates and sacrum. The genius of the work of Dr. Chapman is the recognition of the role of the endocrine system as a companion to the neurological reflexes, lymphatics and the musculoskeletal system. Although the term "pelvic-thyroid cycle" was expanded to include the adrenal glands, the principle of reflex treatment outlined in AEICR has been part of the osteopathic profession for the better part of our heritage. Viscerosomatic and somatovisceral reflexes have been encoded in the primate genome for millions of years. Hopefully, the work of Dr. Frank Chapman will be more fully understood through research and shared case studies. Chapman's model of the pelvic-thyroid cycle, which in name only has been changed to the neuroendocrine-immune complex has benefited osteopathic patients for nearly three quarters of a century. The purpose of this paper was to reintroduce Chapman's work and present relevant scientific information so reflex treatment and the musculoskeletal neuroendocrine-immune model will continue to expand beyond the curricula to be applied to the practice of osteopathy.

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Acknowledgements

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Addendum:

A Teaching Model for a Regional Approach to Chapman's reflexes.

This section is based upon my personal observations as an osteopathic educator over the last ten years.

Call it a mixed blessing of sorts, but it is a reality that our osteopathic students are facing an ever increasing explosion of technological data. Further, they are also presented with many manipulative modalities that involve rote memorization of specific "points" and positions for treatment. Our osteopathic forebearer's taught perhaps more principle than technique; students were expected to utilize theory to formulate a plan of treatment. However, we expect from our students a level of recall that may not necessarily translate into future osteopathic expertise and may actually discourage many of our students from the concept that osteopathy is a

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philosophy of medicine. The purpose of this addendum is to provide a simplified format for the nearly one hundred Chapman's reflex points' It is based upon the fact that individual structures within each system share common sympathetic nervous innervation. For example, the facial sinuses are similar in histology and sympathetic flow as the pharynx, mastoid air cells, nasopharynx, conjunctiva and the like. The Chapman points for these structures are located from the clavicle to second rib anteriorly and the upper cervical spine posteriorly, each specific gangliform contraction being not more than centimeters from one another. The implication being that treatment for any given substructure within a system, in this instance the "HEENT" region, can be more generalized by assessing a given area and thus easier to learn due to the common origin of the sympathetic cell bodies. The cell bodies for the sympathetics of the head, ears, eyes, neck and throat system are found in the T1-4 area but they transmit fibers into the superior cervical ganglion (approximately C2—which may be the reason for viscerosomatic changes located in the upper cervical spine—a region traditionally reserved for parasympathetic findings) and anteriorly along the intercostal nerves. For any given HEENT problem, then, the curricula should emphasize diagnosis and treatment of the upper rib and cervical regions. The following represents a schematic for the following systems: head, ears, eyes, neck and throat, (HEENT), heart and lungs, (Chest), upper gastrointestinal (UGI), lower gastrointestinal and genitourinary (LGI/GU) and neurological (NEURO). A discussion of the endocrine reflex points can be found in the above thesis, "The Neuroendocrine Immune Complex Illustrated in the Work of Dr. Frank Chapman". As put forth in the text: *An Endocrine Interpretation of Chapman's Reflexes* a partial list of common clinical conditions will precede each system. It is easier to recall a specific Chapman reflex point if the student is provided with a clinical correlation for that particular dysfunction.

HEENT: Conjunctivitis, otitis, pharyngitis, laryngitis, tonsillitis, hay fever and sinusitis:

Anteriorly: Clavicle to second rib.

Posteriorly: Suboccipital musculature, intertransverse spaces of C1 and C2.

CHEST: Asthma, bronchitis, pneumonia, and the myocardium, particularly myocarditis:

Anteriorly: Second through fourth ribs and intercostal spaces.

Posteriorly: Between the spinous and transverse processes of T2-5.

UGI: Esophagitis, gastritis, pyloric stenosis, inflammatory or imiable bowel disease, hepatitis, gall bladder and splenic disease and pancreatitis/diabetes:

Anteriorly: Second through eleventh ribs and intercostal spaces and sternum.

Posteriorly: Between the spinous and transverse processes of T2-12.

LGI/GU: Appendicitis, diverticulitis, constipation, hemorrhoids, prostatitis, urethritis, renal disease and stones, cystitis, vaginismus, inflammation of the fallopian tube and seminal vesicles, and uterine fibroma:

Anteriorly: Periumbilical, pubes, ischium, and lateral thigh (from immediately below the greater trochanter to above the knee).

Posteriorly: Between the spinous and transverse processes of Tl2 to L2, including the paralumbar musculature and the iliolumbar ligament and sacroiliac joints.

NEURO: Neuritis of the upper extremity (the more modern correlate may include "carpal tunnel syndrome" or reflex sympathetic dystrophy), torticollis, sciatica, disorders of the "cerebrum and cerebellum" (such as a stroke, memory loss or disequilibrium) and "neuroasthenia" which is an antiquated term for what may be considered "chronic fatigue syndrome" or post-traumatic stress disorder:

Anteriorly: For brain and fatigue, upper anterior chest along the pectoralis major muscle and upper 4 ribs and the corocoid process. For neuralgia of the upper extremities, third and fourth ribs and intercostal spaces. For torticollis reflex points are found along the superior-medial portion of the humerus. In this instance, too, the shared sympathetic innervation of the cervical and upper extremity regions dictates the treatment points, theory leads the way to treatment. For sciatica or lumbosacral disk disease points are found on the lateral thigh.

Posteriorly: For brain and fatigue, intertransverse space of C1 and C2 and subscapular region. For neuralgia of the upper extremities, along the transverse processes of T2. As per our analysis of the upper extremities, lower limb neuralgia can be assessed and treated between the spinous and transverse processes of T11-L2, the origin of their sympathetic cell bodies. For torticollis, along the transverse processes of the middle to lower cervical spines. For sciatica or lumbosacral disk disease points are found along the iliosacral joint.

Summary: Diagnosis and treatment using Chapman's reflex treatment for disorders of the head and neck, chest, upper or lower gastrointestinal, genitourinary or neurologic system can be readily learned by understanding the unchanging laws of human anatomy and physiology, specifically the sympathetic arm of the autonomic nervous system. Clinical correlations may facilitate the remainder of the educational process.❐

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Book Review

Reviewer: Anthony G. Chila, DO, FAAO

A FULFORD TRILOGY

DR. FULFORD'S TOUCH of LIFE
Robert C. Fulford, DO with Gene Stone
Pocket Books, 1996; 193 pages; $20.00 (US), $27.00 (CAN)

ROBERT FULFORD, DO AND THE PHILOSOPHER PHYSICIAN
Zachary Comeaux, DO, FAAO
Eastland Press, Inc.; Seattle, WA, 2002; 204 pages, including Bibliography and Index; $24.95

ARE WE ON THE PATH?
The Collected Works of Robert C. Fulford, DO, FCA
The Cranial Academy, Inc.; Indianapolis, IN; 2003; 294 pages; $24.95

Doctor Fulford's Touch of Life was a sensation when released in 1996. Dedicated to Fulford's wife, Glenna, and written with Gene Stone, emphasis was given to the healing power of the natural life force. The introduction was written by Andrew Weil, MD, author of the landmark bestseller Spontaneous Healing. Among Weil's comments about Fulford's work:

"In this book readers will not only learn the personal history of a remarkable healer, they will also discover many practical secrets of health and vitality, from the importance of proper breathing to the value of simple stretching as a superior tonic for nerves and muscles. Now in his nineties, Bob Fulford embodies and exemplifies his own wisdom about health and healing. He has led a remarkably vigorous life and had a remarkably productive old age, with little need for medical interventions....His emphasis on vital energy and the healing power of nature-concepts that animated medical inquiry from the time of Hippocrates through the last century-is completely missing from medical education today....If medicine is to come back into alignment with the great healing traditions and satisfy the needs and desires of those who are sick, it must rediscover the truths that Bob Fulford expresses in these pages."

Five years after Fulford's passing in 1997, *Robert Fulford, DO and the Philosopher Physician* appeared. This volume offers the perspective of a colleague who cared for Fulford's wife during the last years of her life. This led to an ongoing relationship with Doctor Fulford in which visits to the author's office (Comeaux) were characterized by the asking of the question "Well, what are you thinking about this week?" The sharing of mutual treatments or collaborative work on Comeaux's patients were also part of this experience. Comeaux's purpose in writing indicates that:

"In preparing this book, I have tried to strike a balance between presenting the material as it was taught by Dr. Fulford, and elaborating upon it, based on his source materials themselves.

This book includes practical applications of techniques, and attention to an expanded sense of palpatory awareness and its use in treatment. Fulford's way of expressing all of this was not as abstract as mine. He was a very practical man; his thoughts were organized in a dissociated, eclectic, Zen-like manner. By contrast, I have tried to express the expansive worldview that he brought to the osteopathic treatment table in a more linear fashion. Some redundancy in the text will hopefully serve to reinforce the concentric nature of Fulford's thought in practice, emphasizing different nuances at different times, just as the same notes in music serve as the basis for a variety of melodies.

Dr. Fulford fought for what he believed, but in a gentle way. What is more, he also fought with himself over issues of intellectual pride and self-promotion. However, it was always with a reverence for the pursuit of truth, including

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scientific explanation, and for the broader role of participating in the divine creative process. He saw medicine as a practice of loving service, not one of control, wealth, or pride of accomplishment. He always saw himself as part of an evolving osteopathic community of understanding.

It is hoped that this book will fill a gap in the resources available to those of us who are trying to preserve, teach, and pass on the insights and methods of this wonderful man. None of us can ever truly speak for Dr. Fulford, or treat just as he would have with his own hands, heart, and mind. We can only learn from him to enrich our own paths."

Are We on the Path?, The Collected Works of Robert C. Fulford, DO, FCA has been released by the Cranial Academy, Inc. In his last will and testament, Dr. Fulford dedicated his speeches and papers to the Cranial Academy, for the benefit of the organization and its members. This volume was edited by Theresa A. Cisler, DO, recently installed as President of the Cranial Academy. An excellent biographical sketch was prepared by Harold D. Goodman, DO. The reader can quickly grasp the essential features of Dr. Fulford's views by reading in his 1987 Thomas L. Northup Lecture, entitled Are We on the Path?:

"Osteopathy is a philosophy. Philosophy is a particular system of principles for the conduct of life. Philosophy is mind that creates all things. Mind centers all things. Mind is the invisible cause. Ideas are all in mind.

Osteopathy is an art. Art is the skill or power of performing certain action. Art is the Universal Energy of mind-desire, thinking mind-desire to create. Thinking mind is the only energy of the Universe.

Osteopathy is a science. Science is systematized knowledge of nature and the physical. It is matter which is the effect of cause and motion. It has no stability. It is the visible world which is observed by our senses. It is manifested in motion by the polarizing forces of motion.

Osteopathy is a science of medicine, which means a healing art. It is a system of therapeutics founded on all fundamental physical, chemical and biological sciences. It bases its treatment of all abnormal conditions of the body on natural law and vital principles governing life. The natural law is, 'there shall be a balanced rhythmic interchange between opposite pairs, namely, the adjustment of all the vital forces of the body.' The vital force is love. Love can have but one motion, to give out from itself in order to find unity. The greatest urge in nature is unity.

The osteopathic profession is like a seed. It first had to establish its roots in the soil-society. It then had to crack the soil open-recognition by governments. The stem of the seed is out of the soil. Now it is time to mature and exhibit the bloom of osteopathy as it stands preeminently above all else. Dr. Thomas L. Northup had the divine awareness of osteopathy. He, more than any other person, is responsible for the present position of the American Academy as a potent force in the destiny of the osteopathic profession. What is the destiny of osteopathy?

Osteopathy is the medicine of the twenty-first century. Its philosophy, art and science will be based on health promotion, prevention and a natural approach to patients. Patients will be regarded not as disease processes or problems, but as people needing assistance in balancing the physical, emotional, mental and spiritual dimensions. This is our responsibility. Are we ready to accept the challenge of the new age!"

With these three volumes as resources, the student of osteopathy can very satisfactorily mine the thought of this beloved practitioner and teacher. Doing so will challenge and reward the effort by continuing the walk along the path of unfolding horizons envisioned by Andrew Taylor Still. Doctor Fulford was one in the listing of stellar individuals who walked Still's path. How many of the present generation of osteopathic practitioners are ready to accept his challenge?

Elsewhere in Print

Krawiec, CJ, Denegar, CR, Hertel, J, Salvaterra, GF, Buckley, WE
Manual Therapy. Volume 8, Number 4, November 2003; 207-213

Static innominate asymmetry and leg length discrepancy in asymptomatic collegiate athletes

Summary. **The objectives of the study were to assess: (1) static innominate asymmetry in the sagittal plane, (2) leg length discrepancy (LLD), and (3) the relationship between static innominate rotation and LLD in asymptomatic collegiate athletes. The study was an observational study by design which took place in a University athletic training research laboratory. The participants were twenty-four male and 20 female asymptomatic intercollegiate athletes who volunteered to take part in the study. Static innominate asymmetry was assessed with a caliper/inclinometer tool and LLD was measured with a tape measure using standard clinical methods. Results showed that forty-two subjects (95%) demonstrated some degree of static innominate asymmetry. In 32 subjects (73%), the right innominate was more anteriorly rotated than the left. Nearly all subjects were determined to have unequal leg lengths with a majority, 30 subjects (68%), showing a slightly longer left leg. Weak correlations (r = 0.33 - 0.44) were identified between static innominate asymmetry and LLD. In conclusion static innominate asymmetry and LLD are common among asymptomatic college athletes. This information provides clinicians with normative data of common clinical measures in a physically active population.**

The authors of this paper provide a contribution to measuring and quantifying pelvic asymmetries in an symptomatic population. From the Introduction, "Alignment and motion in the pelvic region is particularly complex making clinical assessment difficult. The bony pelvis is comprised of the right and left innominate bones, which are each composed of the fused segments of the ilium, ischium and pubis. The motion between the sacrum and the innominate bones exists such that motion ipsilaterally is dependent on and relative to motion and position contralaterally (Bemis & Daniel 1995). Clinical assessment of innominate position and motion is subsequently made by describing motion or position of one side in relation to the other (Beal 1982; Erhard & Bowling 1977; Cibulka et al. 1988; Crowell et al. 1994; Bemis & Daniel 1995).

The literature contains very little documentation of the incidence of specific innominate asymmetries as determined under controlled investigation. This is in large part due to the difficulty in assessing pelvic asymmetry, arising from the low reliability of common clinical tests and the lack of a gold standard objective measure (Potter & Rothstein 1985; Cummings & Crowell 1988; Dreyfuss et al. 1994). The most common pelvic asymmetry that has been studied is that of innominate rotation in the sagittal plane (Beal 1982; Cibulka et al. 1988; Crowell et al. 1994; Bemis & Daniel 1995). However, research related to the symmetry between the innominates in healthy and symptomatic populations is limited.

Leg length discrepancy (LLD) has long been implicated as an etiological factor of pain and dysfunction throughout the lower quarter (Beal 1977; 1982; Woerman & Binder 1984; Gogia & Braatz 1986; Aspergren et al. 1987; Danbert 1988; Schuit et al. 1989; Beattie et al. 1990; Don Tigny 1990; Hoyle et al. 1991; Mannello 1992; Cummings et al. 1993; Gross et al. 1998). Pelvic asymmetry and LLD are interrelated because the innominates will typically adapt in either an anteriorly or posteriorly rotated position in order to lengthen or shorten the extremity relative to the contralateral side (Kuchera & Kuchera 1997). The extent of the relationship between LLD and pelvic asymmetry has been investigated and described in the literature (Pitkin & Pheasant 1936; Cumings et al. 1993), however, the natural occurrence of this relationship has not been previously documented in a healthy athletic population."

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