

Osteopathic Cranial Lesions

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The last 2 years have seen the frequent appearance of the subject of this paper on the programs of many state societies and of local meetings. It has been the writer's privilege during the last 2 years to present the cranial concept in osteopathy before many of these organized groups. The writer has always welcomed this opportunity to paint a picture for the general practitioner of the work which a few are doing with varying success and which is available to all physicians who are willing to put in the necessary hours of study and application needed to make this form of therapy a strengthening factor in their armamentaria. Now it has become the writer's honor to attempt to fill the request of the Publications Committee of the Osteopathic Cranial Association by preparing this manuscript for the entire profession.

The story of the cranial concept in osteopathy goes back to 1898 and the American School of Osteopathy. A student of this school was spending an afternoon examining the specimens in the college museum. These specimens included a disarticulated skull. The temporal bones of this specimen caught the eye of the student and brought to his mind the similarity between the squamous portion and the gills of a fish. The margins of the bone appeared to this man to be constructed for mobility. This observation became the nucleus for the two principles around which the subject of osteopathic cranial lesions developed. The similarity to the fish reminded our student of respiration and the joint construction to him meant motion, an idea which was even more fantastic in that day than in our modern time. The student was William G. Sutherland, now of Saint Peter, Minnesota. Dr. Sutherland claims to have spent the next 10 years trying to forget the idea which he considered could not possibly be valid. The constant nagging thoughts continued, so, in desperation, Dr. Sutherland set out to disprove the idea.

The next 20 years saw many long hours of study with anatomy books and bones. Eventually a hypothesis was formulated concerning the production of cranial motion which involves what has become known as the *primary respiratory mechanism*, and a complete pattern of the movements of the cranial bones based upon the construction of the articulations themselves was worked out. The more recent years have been spent in continual study of this hypothesis and in the clinical application of the information obtained. The principles and technic also have been taught to interested physicians.

The application of these principles and lesion discussions presupposes that cranial motion exists. To my knowledge this motion has yet to be proved in the physiology laboratory in order that it may become recognized as a scientific fact. However, the physicians who have palpated this movement and have been able to recognize malalignments in position and loss of motion and then have been able to realign and mobilize these articulations no longer doubt that motion is present. Many patients will attest this premise also either because they too have felt motion in their own heads, or have been relieved of a malady by

normalization of these articulations, or both. The author dares to say that all who have studied this work, including the founder Dr. William G. Sutherland, have entered it with a great degree of skepticism. Most have spent the intervening time since their initial interest proving to themselves by clinical results that they are working on a sound foundation. Five years is about the greatest time that any have been using this form of therapy as taught by Dr. Sutherland.

To those who are interested in the subject of cranial mobility, the author suggests a review of the anatomy texts, not one but several, with special emphasis upon the sections dealing with the morphology of the articulating surfaces and the classification and construction of the joints themselves. The physician should study particularly the growth changes in relation to age, thus the significance of early ossification is seen. Some texts state that mobility is absent, others are non-committal, while occasionally one mentions motion. In this regard we should always remember the difference between dead and living tissue. All of us retain a mental picture of the hard dry bones found in the dissection laboratory and the specimens used by lecturers in the classroom. The living bone with its normal complement of fluids is like other tissues in that it is pliable and has the quality of resiliency.

The next question usually is: What moves the cranial bones? The answer to this question at the present involves the hypothesis of the *primary respiratory mechanism* as presented by Dr. Sutherland. The following discussion of this phase of the subject is my understanding of it. We are taught that life is inherent in the central nervous system. This system responds to that heritage by a rhythmical motility which results in a change in its own morphology, which change necessitates a displacement of cerebrospinal fluid thus giving us fluctuation. Fluctuation of the cerebrospinal fluid occurs within the ventricles of the brain and the cisterns of the subarachnoid space. The meninges covering the brain and containing the fluid must also move because of their relationships. The brain is not like a pea in a pod but has expanded in its development so that it contacts very firmly the total interior surfaces of the cranial bones.

Referring again to the description and examination of the bones themselves, we note that they are marked by grooves and ridges which have been produced by the contact of the brain and are respectively fitted to its gyri and sulci. With such an intimate relation it would be impossible for the brain to change its morphology without carrying with it the bones which are in relation to it. Thus we find the *primary respiratory mechanism* as it applies to the cranial concept consists of: (1) the central nervous system (brain and cord), (2) the cerebrospinal fluid, (3) the meninges, (4) the articular mobility of the cranial bones and (5) the articular mobility of the sacrum between the ilia. This last named function involving the sacrum brings in another phase—the craniosacral mechanism—to be considered in any discussion of osteopathic cranial lesions. The sacrum is attached to the occiput through the fibrous tube of spinal dura.

For further elaboration, the writer again refers to the anatomy books and study of the attachments of the dura mater.

Variations from the normal in this cranosacral mechanism are discussed as lesions. It is not within the scope of this paper to attempt a definition of the osteopathic lesion. Undoubtedly each member of the profession has his own definition by which he works. Most will agree that all definitions include malalignments with restrictions of motion, loss of motion in neutral positions, and occasionally a hypermobility of a part. These same ideas of malalignment, loss of motion or both are applicable to the cranosacral mechanism. Thus a discussion of cranial lesions is the same as a discussion of vertebral lesions except for location.

The production of cranial lesions is accomplished in several ways. One classification in current use includes three major headings. They are: (1) Prenatal, (2) natal, and (3) postnatal. Under the prenatal heading we find such conditions as tumors of the uterus exerting undue pressure on a part of the skull, multiple pregnancies, structural abnormalities of the maternal pelvis or spine, and early fixation of the fetal head in the maternal pelvis. The natal division includes all of the known causes of birth injuries. The postnatal group should be further divided into: Secondary lesions produced by spinal malalignment, reflex lesions produced by visceral dysfunction, and traumatic lesions. This latter group is undoubtedly the most frequent cause of the problems met by the cranial technician. The trauma may be the result of surgery on the skull, such as mastoidectomy, turbinectomy, submucous resection, and dental extractions, or, most frequently, blows directed to the skull. These blows include the common ones such as falls, auto accidents, fights, etc., and, in addition, those forces directed through the spinal column upon falling in a sitting posture or jumping several feet and landing stiff-legged.

The recognition of cranial lesions is based upon the same procedures that are daily utilized in the recognition of vertebral lesions. These procedures carry the same prerequisite of a thorough knowledge of the normal mechanism. Observation of the skull will reveal changes to the physician familiar with the normal and with the possible lesion patterns. Palpation of the skull like palpation of the spine should have two purposes: First, that of recognizing changes in position, and second, recognizing the changes in mobility at the various articulations.

When the cranial lesion is recognized, the problem that remains is that of correction. Here we find the major variance with common practices in spinal technic. Instead of using the thrust that is so prevalent in most procedures, attempt is made to utilize the forces of the *primary respiratory mechanism*. This force can often be exaggerated by the voluntary control of respiration on the part of the patient. The crying or squirming of the infant is just as effective. The common technic used is exaggeration of the lesion to the point of articular release and then cooperation of the patient through respiratory effort. Many will recognize the exaggeration principle as that attributed to Dr. Andrew Taylor Still. Many technicians use this same method on vertebral lesions, that is, they exaggerate the lesion then apply a corrective thrust.

The study of cranial technic has altered the method of vertebral correction for many physicians.

They now use the *exaggeration principle* and are substituting respiratory effort on the part of the patient for their previous practice of thrust. Some types of cranial lesions, such as those due to compression, demand a direct action method which will separate the jammed or compressed articulating surfaces. Another method often necessary on children is that called *moulding*.

The question that usually follows such a discussion concerns the age of patients who may be treated. A patient may be newborn or very old and still receive benefit from cranial manipulation. Of course their problems must be the result of cranial lesions. Some of the most relatively mobile skulls which the author has had the privilege of examining have been those of individuals over 75 years old. It is the contention of some that the elderly person in good health must have a good structural mechanism free of lesions. This fact is familiar to every osteopathic physician who has examined the spines of such persons. The same factors maintaining the mobile spine will maintain a mobile skull.

The relation of care between children and adults is also interesting. The child of a few years suffering from a birth injury will demand more time for normalization by many months than an adult with a traumatic injury. The difference lies in the fact that the adult's cranium was once normal and when the lesion is released will tend to return to the original normal alignment. The child's head has been growing in an abnormal position and must be carefully treated over a long enough period to remould the structures to a relatively more normal relation. This often consumes several years although the frequency of treatment may not be more than one or two a month. Those who have studied this subject and have successfully applied the information to their practices find new and greater strength in their manipulative armamentarium.

I shall mention briefly a few possibilities for the application of cranial technic. Its use should start in the nursery. The hospitals which have utilized cranial manipulation have reduced their infant mortality rate and are not bothered so frequently with vomiting infants and those unable to suckle. One or two treatments at this age are frequently adequate. The children with the birth injuries that become evident by failure to talk, the development of spasticity, convulsions, ataxias, etc., are found many times to respond to cranial manipulation. Of course we must keep in mind constantly that some of these conditions result from definite degenerative changes due to meningeal tears, hemorrhages, maldevelopment and the like. These will not respond to cranial treatment any more than to any other care.

As the years pass the growing child often develops conditions which are the result of trauma a few months or even years previously. The earlier treatment is instituted the more rapid will be the results. Among adults, headache is an extremely common problem. The idiopathic group, including migraine, usually results from cranial lesions. When headache is due to such lesions the response to cranial manipulation is usually one of relief. There are reports of help in a few mental problems and many report endocrine balancing by normalizing pituitary function. The problems of eye, ear, nose and throat practice are markedly reduced by the help given to visual disturb-

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ances, sinusitis, hay fever, and the associated diseases. Certain types of asthmatic and bronchial problems are purely cranial in origin. The same is true for some cardiac functional problems. Digestive disturbances initiated through the vagus nerve are amenable to cranial manipulation. This includes some biliary dysfunctions as well. There have been a few reports concerning skin lesions of nervous origin relieved by cranial therapy.

Many of these things sound fantastic, but when one studies the effects of the nervous system on tissue function and visualizes again the outflow of that control he soon realizes that a normal central nervous system, particularly a normal brain, is necessary to normal body function. Man is a functional unit and a disturbance in any part will affect all other parts.

In summarizing this dissertation, the writer reiterates that cranial therapy is the application to the skull of principles established by Dr. Andrew Taylor Still. This application has been made by Dr. William G. Sutherland. The discussion of cranial lesions as

to production, recognition, and correction is comparable to similar discussion of vertebral lesions. This study is based upon normal anatomy and physiology and is designed to augment the physician's knowledge and ability in his care of disease processes. The advancement of the cranial concept has been injured by some of its exponents through their claims of being able to cure all phases of some disease groups in which only certain divisions are known to be amenable to any type of treatment. These things are unfortunate. It is the sincere hope of all using cranial manipulation that the profession will investigate the concept before criticizing those using or teaching it. We all realize the probability of errors among the facts. We also know that statistics and research are necessary to establish beyond question the premise from which we work. These things are in process. Within the next few years statistical and research reports will be available to the osteopathic profession.

These things have been written with the hope of broadening the understanding of the monumental contribution made to the osteopathic profession by Dr. William G. Sutherland.

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Editor's note

The pages appearing in this "Special reprints" section have been electronically scanned from the original journals in which they appeared. Consequently, the scanning process at a density to enhance readability has picked up such artifacts as "bleed-through" type from reverse pages and other "blemishes" that existed in the original paper on which the text was printed. Even the yellowing of the original pages has caused some darkening of the margins. JAOA regrets these anomalies and hopes that readers will overlook them and concentrate on the content of these works published in the osteopathic medical profession's early history.

For interest sake, concluding pages of articles may contain "newsy" items of the original date.

Gilbert E. D'Alonzo, DO, September 2000