THE UPPER CERVICAL
MONOGRAPH

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How to Adjust the Atlas Subluxation Complex

(Con't from Vol. 1, No. 3.)

In the last issue of the MONOGRAPH we discussed the structuring of the Atlas Subluxation Complex (ASC) adjustment, the Horizontal Resultant (HR), the Notch-Transverse Resultant (N-TR), parallel forces, and direction and force in the adjustment. In this issue we will discuss the first of the Eight Phases, the Approach Phase. It is suggested that the last issue be reviewed.

The adjustor who desires to perfect himself in this art must not minimize the importance of any phase, any step, any of the reflex acts, axes of motion, or other entity. They are all indispensable. The tendency to omit, or ignore, some aspect of the adjustic act has resulted many times in failure to efficiently reduce the misalignment factors of the ASC.

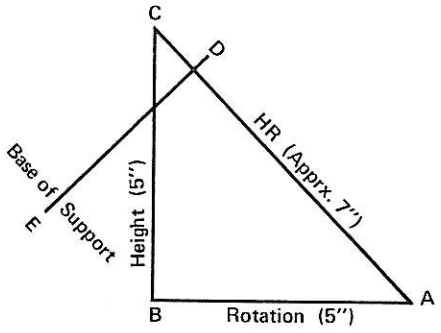
ANTERIORS

The APPROACH PHASE will be considered only as it relates to anterior rotations of the atlas: Those subluxations in which the atlas vertebra has rotated anterior on the side of its lateral movement into the right or left frontal (lateral) plane. Posterior rotations in which the atlas vertebra has rotated posterior on the side of atlas laterality will be approached differently as to stance and will be considered later.

OBJECTIVES OF THE APPROACH PHASE

The purpose of the APPROACH PHASE is to establish the base of support (stance) for any given subluxation. The base of support will be differently placed for different subluxations. As explained in Vol. 1., No. 3. (q.v.), the HR is the hypotenuse of a right triangle, horizontally considered, which represents the force vectors of height and rotation. It will, therefore, vary in length and in direction according to the degree of atlas rotation and the sum total of the height vector. The adjustor must position his base of support consistently and accurately to each HR.

The schema below will illustrate how the adjustor determines his base of support for any given ASC. We will use a H5A5 listing. (Scale: Approx. 6/16 to 1 inch): Line DE not drawn to scale)



Point A is the transverse process location. Line CA is the HR. AB represents the rotation vector, and BC, the height vector. Point D is referred to as the "settleback point" and is located 1 inch from point C, the distal end of the HR. Line DE is drawn from point D and at right angles to the HR; it is the "center of base line."

The distance of the base of support from the HR will vary with different adjustors, according to their build and flexibility. The width of the base of support will approximate the distance from one acetabulum to the other; its length wll be determined by the A-P spread of his feet which, in turn, is decided by the length of the HR: The longer the HR, the greater will be the A-P spread of the adjustor's feet.

Positioning the adjustor's feet in relation to line DE will be discussed under the Steps of the APPROACH PHASE, and elaborated upon in the second phase, the SETTLEBACK PHASE. The rule to note now is that the "settleback point" is always one inch from the distal end of the HR,

Cont. on Page 7...

Profiles in Chiropractic

Editor's Note: This is the second in the series PROFILES IN CHIROPRACTIC in which NUCCA presents a brief review of the lives of nationally known chiropractors, something of their thinking, and philosophy of professional practice and life. In this issue, the MONOGRAPH presents Dr. James R. Coder, Lancaster, Pennsylvania.

Dr. Coder states: "I just became 81 years of age and I learned something: Age is just mind over matter and, if you don't mind, it doesn't matter. I just can't quit; this is the best part of my life. The more the work improves, the more I am inspired. I am going stronger than ever - - - 81 years old - - - and, believe me, life is worth-while."

Inspiration is the word that, perhaps, best describes this well-known chiropractor. It is the type of inspiration that continuously renews itself because its source is in his daily work. He is stimulated by his innate desire to achieve as high a degree of skill as one can possibly attain in the reduction of the subluxation. His love of accuracy, his attainment of specificity; in short, his craftsmanship, urge him to greater efforts in the pursuit of his professional career.

"I became a chiropractor," Dr. Coder recalls, "because of my wife's health problem. For years she suffered from anemia, and there was little the medics could do for her. An atlas adjustment restored her to health."

Continued on Page 3 . . . .

Editorial

On September 21, 1973 the Directive Board of the National Upper Cervical Chiropractic Association, Inc. (NUCCA) adopted a resolution. The intent of this resolution is to call attention to the orthodox premise of chiropractic practice, defined by chiropractic authorities as the correction, restoration toward normal, or replacement of displacements (misalignments) of subluxated vertebrae by the act of the adjustment as a prequisite to normalizing nerve function.

All chiropractic authorities seem in agreement that (1) there is abnormal movement of a subluxed vertebra, and (2) that through some pressure --, interference --, or irritation producing mechanism the vertebral subluxation is capable of causing malfunction and/or some pathological states in the human organism. D.D. Palmer (1910), for example, defined a subluxation as a condition caused when a vertebra moved out of its normal relationships; a partial or incomplete separation. (1)

The NUCCA resolution is concerned with the reduction or correction aspect of the subluxation -- the adjustment. Here, again, the authorities seem to agree that the word adjustment implies correction. But from this point forward, there seems to be a nebulous area, and one is impelled to ask: correction of what? Nerve detriment, caused by the subluxation? or the misalignment factors of the subluxation? Can nerve detriment, or interference, be corrected without correcting the misalignment factors when that detriment, or interference, is caused by the misalignment factors?

D.D. Palmer wrote of being the "first to replace displaced vertebrae by using the spinous and transverse processes as levers ---" (2) Obviously, Palmer felt that the two -- nerve detriment and vertebral displacement -- are inseparable; to correct the first, one needed to correct the second. Who among us can, or will, support the proposition that the opposite is true?

All of which brings us directly to the intent of the NUCCA resolution. What of those chiropracic techniques of adjusting that are taught in chiropractic colleges, and elsewhere, that violate relevant mechanical principles, particularly when applied to the cervical spine? Are these not questionable procedures if they are in violation of relevant mechanical principles? Do they not present a clear danger to the public -- and to the profession? It is NUCCA's experience that they do.

Because of this experience and because of its concern, NUCCA drew up the resolution, adopted it, and sent copies of it, accompanied by a letter, to twelve chiropractic colleges in the United States and Canada, and to the National Chiropractic Organizations. In the accompanying letter NUCCA asked consideration and adoption of the resolution, and notification of any remedial action that would be taken.

At this writing -- six months later -- four chiropractic colleges have replied. Eight colleges have not replied. None of the national organizations have replied.

We append to these comments a letter, written by a patient; an example of what we are concerned about:

Dear Dr. Gregory:

The purpose of this letter is to set forth my recent experiences, during your illness, with another chiropractor. What I want to know is why some chiropractors are allowed to do harm.

As you know, my history of illness is a long one. I always remember doing a lot of coughing when I was in school. I know I had pneumonia when I was 5 years old, and a bad case of whooping cough later on.

I had x-ray treatments on a portion of my right lung when I was 10 years old. The x-ray treatments apparently caused the right lower lobe to disappear.

In 1965 I had a bronchoscopy, and my lungs were drained. This was when I was first told that I had bronchiectasis.

In June 1972, I started having pain in my lungs. Another bronchosopy and gram were performed at a hospital in Sandusky, Ohio. This time I was told that the lower lobe of my left lung would have to be removed. Two days before the operation was scheduled I told my husband that I wanted another doctor's opinion. He took me to a specialist in Cleveland, Ohio.

When the specialist looked at my x-rays he said he thought he would operate on both lungs, not just one; however, he had me admitted to the hospital for more tests. Afterwards he said that when both lungs are so bad it is impossible to operate. I would, he said, have to rely on medication instead. I was to take tetracycline and inhale saline. After trying the medication for five months, I gave up. I was feeling worse every day.

Some relatives called me and told me about you. You X-rayed me, and I received by first adjustment on December 5, 1972. Under your care I improved continually and was able to return to work full time.

Due to the fact that you were having some health problems which might require your closing your office, I wrote to the Palmer College of Chiropractic in July of 1973, asking the College to supply me with the names of some reference doctors in case you closed your office. The College sent assurances that the services of their alumni should be satisfactory, and supplied me with names in my area.

When, about October 1973, you became very ill and had to close your office, I sought the services of a Palmer Graduate. His first adjustment was on December 5, 1973. It was a very hard karate-like chop on the left side of my neck. Two days later, he told me he was going to work on the right side of my neck. I questioned him about this because your adjustment had been on the left side, and you had explained to me that my atlas vertebra was misaligned far to the left. This doctor, however, said this often happens, and I let him proceed thinking that he knew what he was doing. I had eight adjustments from him in December, every time I felt worse. No longer could I lie in bed and be comfortable. No matter how I turned my neck hurt. Worse yet, I had terrible pains and pressure in the middle of my chest. Then, I began having trouble focusing my eyes. I was also coughing up less.

When you returned to work in January, I couldn't get back fast enough. You checked me and found that the nerve pressure in my neck was greatly increased, and you x-rayed me before adjusting me. These x-rays showed that my neck was misaligned worse than it had ever been. It was apparent to even my husband and me. You adjusted me in accordance with what the X-rays disclosed, and within the week I started feeling better again.

My experiences have made me wonder whether there is a rationale to chiropractic. When two, or more, doctors take X-rays of the same patient, why do they arrive at different conclusions as to

Cont. on page 6 . . . . . .

"Profiles in Chiropractic" cont. from front page . . . . . .

Dr. Coder entered the Palmer School of Chiropractic in 1925. Prior to his decision to become a chiropractor, he attended business college. In 1912 he enlisted in the U.S. Marines, serving his country in Cuba, Mexico, and Haiti. He was discharged in 1915. From 1917 to 1919, he served in England and France during the first World War. It was in France that Dr. Coder met and married his charming wife, Jeanette.

"I was born in Aberdeen, Washington in 1893", recalls Dr. Coder, "where I lived with my parents, one brother and three sisters. I am the last to survive. My father had a timber claim in the vicinity, but he sold out and went to Alaska during the gold-strike. Before going, he shipped the family back to Pennsylvania where he and mother originally came from. I was raised in Brockway, Pennsylvania."

After receiving his degree in chiropractic, Dr. Coder returned to Pennsylvania, which at that time had no chiropractic board of examiners. He was arrested three times for practicing, but he was never convicted because of the favorable evidence given in his behalf by his patients. Dr. Coder applied for a drugless therapy license, under which he could legally practice, and was required to take two years more of physics, chemistry, biology, and related subjects in order to qualify for examination for a drugless therapist's license at the Unversity of Pennsylvania.

In 1932, after studying the upper cervical procedures practiced in the B.J. Palmer Chiropractic Clinic, Dr. Coder adopted upper cervical methods, and has practiced this system exclusively ever since. With this system he has been successful in cases of amnesia, Bell's palsy, rheumatic and arthritic conditions, chronic poliomyelitis, epilepsy, chronic hiccup, arm and leg paralyses, vertebral disc problems, sciatic neuritis, bursitis, multiple sclerosis, inoperable brain tumor, and St. Vitus' dance. "I could go on for hours listing cases I've handled," Dr. Coder stated. I've even x-rayed and adjusted the atlases of some 40 dogs with paralysed hind quarters and gotten fine results."

"During my years of practice, I've sent 52 students to chiropractic colleges. One of these was my son-in-law, a First Lieutenant in the Navy at the time he became ill. He called me and came to my office for examination and adjustment, stayed a few days with me, recuperated, and decided to study chiropractic after his discharge from the Navy. He came back, completed his college -- he had been a pre-medical student -- and then entered the Plamer College of Chiropractic. He now practices in Pennsylvania. This year his son will graduate from the Palmer College.

Dr. Coder is a strong supporter of chiropractic, has served on several committees of national organizations, held many positions including president and vice-president of state organizations; and worked arduously for legistalive recognition of chiropractic in Pennsylvania. He was a state organizer of the ABC lay groups, and for ten years lectured on chiropractic throughout Pennsylvania, New York, Delaware, and Maryland. Often he presented patients to lay groups that he had adjusted successfully. Dr. Coder is a constant contributor to the research program of the National Upper Cervical Chiropractic Research Association, Inc. (NUCCRA). He has served NUCCA as a member of the Advisory Committee.

Always seeking improvement in his science and art, Dr. Coder started attending the Grostic Procedure Seminars in upper cervical analysis and adjusting in 1948. Impressed by the techniques taught, he continued attendance for several years.

"It was at the Grostic seminars that I met Dr. R. Gregory, and learned of his part in the development of atlas techniques. After Dr. Grostic's untimely death, Dr. Gregory continued the seminars by demand, and he continued to improve the work. In 1966, Dr. Gregory formed the National Upper Cervical Chiropractic Association in conjunction with a few chiropractors. He has turned over to this non-profit organization all income from his personal seminars. In 1971, the Directors of NUCCA formed a research organization, the National Upper Cervical Chiropractic Research Association, Inc. (NUCCRA), also non-profit and listed with the federal government as a scientific organization. This is a research organization to which donors may make tax-deductible contributions. I whole-heartedly support these organizations. Few know that Dr. Gregory works day and night, researching, developing better systems, making the techniques more effective, teaching his methods to other chiropractors so that people will not have to travel hundreds of miles to obtain a satisfactory atlas adjustment. The NUCCA-NUCCRA organizations are 'tops'."

Dr. Coder is a life-long church member, a Mason, and a member of the Veterans' organizations. His favorite recreation is golf.

"I will never be rich," says Dr. Coder, "except in the practice experinces I've had over the past fifty years, and the happy thoughts I now have about the thousands of patients I've attended. My wife, Jeanette, who works with me shares these experiences. It is a great satisfaction to me that my son, George, chose chiropractic for his life's work and practices with me. He is now a director in the NUCCA-NUCCRA organizations."

Analytical Instruments

Film analysing instruments are available to doctors using specific methods of upper cervical analysis. These are a grid-type instrument, designed in two colors, red and green, to facilitate analysis and to insure accuracy. The grid arrangement further aids in determining the axis body center relationship to the odontoid center in cases where abnormality exists, and in aligning the appropriate instruments more precisely to the atlas laterality, thereby making easier and more accurate all comparisons between various structures and establishing relationships between reference points.

These instruments have been utilized and tested by several competent film analysers. A complete set of instruments is being sold at the introductory price of $45.00.

Sold separately, the cost of each instrument is as follows:

Cephalometer (skull divider) . . . $20.00

Relatoscope (for determining atlas, odontoid and spinous relationships) $20.00

Circumscale $15.00
(condyle and axis superior articulating surfaces)

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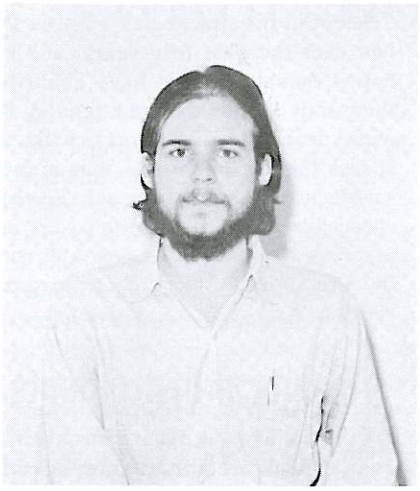
Facilitated States in the Atlas Subluxation Complex

by Richard Sittinger



EDITOR'S NOTE: The MONOGRAPH publishes this article, submitted by a student at the Logan College of Chiropractic, because it believes that the article is a worthy effort, and that expression and credit should, therefore, be given. Publication, however, does not constitute an endorsement by NUCCA.

The article is in five parts. Space limitations required condensation of Parts I and II, much of which is background material. Mr. Sittinger's thesis is found in Part III which is printed in its entirety, as is Part IV (Discussion). Part V (Future Research Plans) is omitted.

PART 1: INTRODUCTION

Sittinger refers to B.J. Palmer's presentation (in or about 1930) of a new concept: Palmer's system of upper cervical analysis and adjusting. Sittinger states the belief held that misalignment of the upper cervical vertebrae led to (1) pressure within the (spinal) cord, thus causing (2) a back flow of energy (electro-chemical potential) into the adjacent cranial vault through the Medulla Oblongata giving rise to pressure or hyper-electricity therein; (3) impingement of the first nerve trunks, two members of the Cranial group, and (4) a resultant decrease both quantitatively and qualitatively of the caudal flow of impulse responsible for maintenance of (by stimulation or inhibition) the vital organs and their supportive tissues.

This hypothesis, according to Sittinger, fails to take into account, at least directly, many of the diffuse effects of upper cervical subluxation, clinically observed.

"Clarity," states Sittinger, "to a significant degree has been forthcoming in the excellent work of Dr. Ralph Gregory. Appreciation has been made therein of the more distal influences of atlas alignment upon organismic integrity and the concept of the Atlas Subluxation Complex (ASC) has been formulated. In Gregory's words: 'The term Atlas Subluxation Complex is a neologism intended to denote the far-reaching and detrimental effects of the Atlas subluxation upon the spinal column. The term embraces the mechanical and neurological phenomena observed over many years of attempting to correlate the production of the Atlas subluxation with bodily disorders and the results of the reduction of the Atlas subluxation on bodily disorders.

'By definition the term includes the Atlas vertebra in all its planes of misalignment, its relation to the occiput and subjacent vertebrae, and pelvis, inclusive of the excursions of the latter structures into any or all of the bodily orientation planes and resulting in, or capable of resulting in, concomitant detriment to the susceptible neurological components.' (1)

"None can deny the efficacy of this (ASC) formulation and both roentgenologic and laboratory studies (2-3) recall its validity. It does represent a decided advancement beyond Palmer and provides a more realistic, though more complex, picture of the syndrome with which we are dealing."

Sittinger believes that two more steps must occur before "one clear and concise concept" emerges: "First, the notion that (a) misalignment of the atlas and/or its subjacent partner, axis, serve to create pressure on the enveloped spinal cord or (b) that there is impingement of the last few Cranial nerves, C1 and C2, or others at the intervertebral foramen of axis or its complement atlas must be left aside throughout this discussion --- be they valid or otherwise (and there is no evidence to indicate that they are, experimentally). We here are not so concerned with the local or discrete phenomena observable in atlas lesion. Our center of reference is a complex of change -- different even from that described by Gregory -- in which the paraspinal musculature acts as an intermediary in producing pathology, which may or may not accompany, or be accompanied by, the 'local' or typical problems which have long been postulated."

"What we are talking about," states Sittinger, "is a complex or syndrome -- meaning many and diverse elements of alteration, especially and primarily neurologic, which result from those processes of ACCOMMODATION which innately proceed from displacement of the first cervical vertebra."

"Herein lies the second of the steps indicated earlier: A LOGICAL and DEMONSTRABLE MODEL for the pre-pathologic disposition of the entire organism will be presented in which our most current awareness of structural change in the ASC will be correlated with that of neurologic change associated with these sorts of deviations."

PART II: MUSCULO-SKELETAL CONSIDERATIONS

In prefacing this section, Sittinger compares the instability of the vertebrae of the spinal column outside the human organism with the vertebral segments in vivo, and refers to the two systems: Statics (ligamentous tissue) and Dynamics (muscular tissue), both of which provide support in the living organism.

He cites the importance of the "central role" of the muscles in (1) production of diffuse spinal distortion following abnormal excursions of the atlas, and (2) in the concomitant neuropathology which effects are more deviant though not so clinically apparent. An interesting analogy is made between adjacent and contiguous spinal musculature and the "domino effect." Dominoes placed in a line and threaded one to another will be under the influence of the domino at either end if either end domino is pulled. "The muscles," states Sittinger, "which surround and articulate with the human spine must be

seen to act in a parallel fashion." The muscles form "one single chain" of tissue from occiput to pelvis. This proposition is supported by a quote from Gray's Anatomy: "...consist of a complex, serially arranged group of muscles extending from the pelvis to the skull which may be looked upon as a single muscle functionally." (4).
Reference is then had to Coggins for a detailed discussion of this phenomena. (5).

"The point is," states Sittinger, "there is no single muscle here which is not under the direct influence of its 'continuation' above. Thus it is obvious that unilateral contracture of the local muscles of the upper cervical spine will be accompanied by contraction, ipsilaterally, of the small intersegmental musculature. These extend between all of the segments and, thus, contracture of all will follow from contracture of those at the most superior aspect. This, in turn, facilitates contracture of larger, intersectional musculature. In motion, or due to unilateral weakness, chemical, physical, or other trauma, these too, since they remain facilitated and 'ready to go' have a tendency to contract, applying cephalic pressure to the remaining vertebral segments, ribs, and pelvis."

This tendency, according to Sittinger, is compounded by the skull, positioned on top of the spinal column, it being the most mobile and unstable because of its weight, mass, and lack of superior articulation. It is directly influenced by the position of the atlas, its sole support, states Sittinger. Thus the co-active influences of the atlas and the concomitant cranial misalignment give rise to ipsilateral strain of the musculature, locally and dispersed, enhancing the possibility of massive contraction of the same. Sittinger continues on to say: "It is this 'domino effect' which appears responsible for the so-called 'short leg' which is seen universally in misalignment of the Atlas (6-7-8) as well as for the contorted spines which lie between the two."

Sittinger states that the above phenomena "surely gives rise to visceral pathology in time," due to the compact structure and the complications of structural imbalance.

PART III: NEUROLOGIC CONSIDERATIONS:

Facilitation and the pre-pathologic state.

The foregoing discussion functions as a background for what follows. Having established that the lesion (subluxation) of the atlas gives rise invariably to profound musculo-skeletal changes, easily observable (not a new concept), the third stage of our model (a new concept) may be discussed: This is the specific manner in which pathobehavioral activity of neural tissue derives from the lesion, and its place in the disease process.

Speaking of the osteopathic lesion (which approximates the subluxation), Dr. I.M. Korr stated: "the complex is not just that 'palpatable entity' that is usually referred to, but rather it is the surface manifestation of a complex maze of physiological and neurological stresses existing beneath the surface of the body." (9). Herein lies the "neurological component." The term "complex" in Korr's usuage means a spinal-somatic pattern-activity resulting from a facilitated state, acting on somatic tissue and mediated via the spinal cord.

Facilitation can occur at any spinal segment. This is central to the present concern. It indicates that certain neurons responsible for sensory, motor, or reflex (autonomic) function become and remain in a chronic way "overly susceptible" to excitement or stimuli. These neurons will respond more easily to stimuli, and will respond in a more prolonged manner to the stimuli which they receive from normal (local) and augmented sources. (10). Thus the "reflex threshold, sensory threshold, and threshold for motor control in the spinal cord is lowered." (11) It is, therefore, logical to assume that all tissues, somatic and visceral, which are innervated from the segment(s) which has been lesioned are hypersensitized to either exogenous or endogenous stimuli.

Further, such facilitation creates far easier access to the central nervous system for afferent impulses, both somatic and/or visceral. Resultantly, efferent impulses (response) will be exaggerated in direct proportion to the degree of facilitation. For example, facilitation of somatic motor pathways produces prolonged muscle spasm and tension. Such increased muscle tone (hypertonicity) increases sensory input from the proprioceptors. In this way the already facilitated segment of the cord is even further enacted, increasing the irritability of its related (segmental) synapses. This is the route by which disturbed activity follows from primary facilitation of a single segment.

Denslow offers a working definition of this phenomenon. He states that the pattern represents "...the local or regionally discrete component of a reflexly organized and sustained response to stresses, irritations, and excessive demands placed upon specific tissues or organs by the environment and by the total activities, responses, and adaptions of the individual." (12)

Some difficulty may be encountered in perceiving the manner in which this physiological reaction (state of facilitation) can be directly or specifically related to the ASC as it has been previously described. Such a correlation will follow but it must be preceded by a more detailed examination of the mechanism of facilitation and its mode of onset.

It must be recalled that impulses reaching the spinal cord from cutaneous, and other extra-cordal sources, can be either excitatory or inhibitory in nature, depending upon the rate of impulse. That is to say, a deviation in either direction from the "homeostatic normal," be it an increase or decrease in impulse (speed or number), will determine whether stimulation or inhibition will occur as the organism strives for balance. In turn, activity within tissue (organs and cells) takes place in direct proportion to both the number of efferent impulses traveling to tissue via dermatomally related cord segments, and the number of efferent fibers which are designated for such specific transmission.

Hypertonic muscles involve a state of facilitation both within their spindle apparatus and their end organ, which extends into the cord segment to which they are physiologically related.

Evidence of a hypertonicity (tonic contraction) of all or most ipsilateral musculature can be clinically demonstrated by the presence of a "short leg" associated with the Atlas Subluxation Complex. Such hypertonicity indicates, in light of the foregoing, a state of facilitation of many or all of the cord segments on the side of the lesion (ASC). Thus is presented a first glimpse of the pre-pathologic picture inherent in the ASC. What, then, differentiates the ASC from a local vertebral lesion in its capacity to produce a "universal" ipsilateral facilitation?

Two phenomena (established principles of neurophysiology) must be taken into account here, because they directly influence or control the activities of the efferent fibers which we have been discussing. These two phenomena are CONVERGENCE and DIVERGENCE. (12).

Cont. on Page 6 . . . . .

"Editorial" continued from page 2

what to do for the patient, what adjustment should be given, and how it should be given? Left is left, what justification is there for going to the opposite side of the neck? Aren't X-rays taken for the purpose of showing the misalignments of the vertebrae so that they can be replaced? How can a doctor adjust on one side today, and another on the next visit, with no X-ray in between to guide him? You explained to me after the first X-ray you took of me that an adjustment had to be given according to the X-ray findings. What, then, is the reason for making the misalignments worse? If this type of thing has happened to me, it has happened to others.

This has been a terrible experience for me, but after talking to you, and taking into consideration the fact that I am again getting better since returning to you, I am content to let the matter rest and not pursue it further. I did, however, want to express myself. Perhaps you can use this letter somehow to help correct these situations. If so, I give permission to use it in any way you desire.

Sincerely,

Jean A. Sample

References:

1. Palmer, Daniel David: Science, Art and Philosophy of Chiropractic, Portland Printing House Company, 1910, Page 490.
2. Ibid. Page 11.

"Facilitated States in the Atlas Subluxation Complex," cont. from page 4 . . . . .

DIVERGENCE implies reciprocity. It means that every neuron is influenced by, or is capable of influencing, almost every other neuron in the organism. This happens most obviously throughout the meshwork of so-called internuncial cells found in the substantia gelatinosa, and in the more central portions of the dorsal columns of the spinal cord. (13). Such associational fibers extend from the terminal end of afferent fibers (both somatic and visceral) directly to a point of synapse at the cell bodies of the intermediolateral cord portion either ipsilaterally or to the same portion of the opposite side via the fibers of the anterior commissure. Others ascend or descend for a few segments through the fasciculus proprius. Some fibers extend even as far as the cortical centers of motor activity. (13. Ibid).

These all give rise to specific efferent activities which can be delineated as (1) Somato-somatic reflexes, (2) Somato-visceral reflexes, (3) Viscero-somatic reflexes, and (4) Viscero-Visceral reflexes. In the case of Somato-somatic reflexes, secondary associational fibers influence (through the anterior horn cells) efferent fibers which are eventually distributed to segmentally related skeletal muscles, glands, vessels, and skin.Somato-visceral reflexes involve fibers responsive to the visceral structures (smooth and cardiac muscle). This illustrates clearly the effect from the mechanism of divergence here involved. In the facilitated state inherent to the action termed the "domino effect," which proceeds as an element of the more gross structural change in the ASC, all of these reflex patterns become established over the entire cord. A prolongation will, then, result in diffuse disturbance (the word "diffuse" being of special significance) to function of visceral and somatic tissues.

The term CONVERGENCE implies the "meeting" or approximation of many presynaptic fibers upon the synapse of each efferent neuron. Because of this process, activity of the anterior horn cells occurs, representing (1) controls from such structures as the Cortex, Basal Ganglia, Cerebellum, etc., effecting equilibrium, voluntary action, and locomotion (to name a few); (2) Proprioceptive cells, which lie deep within muscles and tendons; (3) visceral and somatic fibers mediating sense of touch, pain, pressure, sight, and hearing.

If it is recalled that these impulses can be either excitatory or inhibitory, the point is emphasized that in the equilibrious or normal state, a balance between the two is achieved by a constant shift from one to the other as necessitated by activity. In the facilitated state, however, the normal "shift" does not happen, and when prolonged in such a fashion as is inherent in the ASC in its full-spine or "domino effect," activity such as hyper- or hypotonicity of skeletal and smooth muscles, variations in glandular function, and trophic changes in supportive and visceral tissue will result." (14).

PART IV:DISCUSSION

We need to proceed no further to, at least, approximate understanding of the multifarious effects of subluxation in general and upper cervical subluxation (ASC) in particular. All that has been indicated in the foregoing is based upon what is known of physiology in the normal organism. Each of the processes described (contraction of paraspinal musculature, facilitation, divergence, convergence) is essential to the dynamism of homeostasis (stability in the normal body states). All things beneficial to life hold within themselves the capability for destruction, and the saying "everything in moderation" is not of recent vintage." Moderation, however, is not the case in that state which Gregory termed the Atlas Subluxation Complex; and in that state, each of the processes delineated above are "turned" in essence against the organism's survival effort. Not only is musculature (the great effector) incapacitated (at least ipsilaterally) but the "organizing" or "integrative" function of the very system which provides direction for it is impaired in its activity by their pathological or abnormal stance. The chiropractor, unlike the physician of another school, can appreciate that this effect cannot be localized and discrete, but proceeds in such a way as to introduce a state which we have called "pre-pathology" to the entire organism.

It is thus that the ASC comes to occupy a central role (which is not to say the only role) in the neuropathology whose end products are altered structure, deviant function, hence disease.

References for this article appear on the back page . . . . . .

"How to Adjust the Atlas Subluxation Complex" cont. from front page.

regardless of its length or direction; and that the "center of base line" is always drawn from point D, the settleback point, and at right angles to the HR.

The objective in establishing the base of support accurately is to assure control of the adjustor's rotary movements as he moves his spinal column as a lever from point D to point A and back to point D during the following adjustic phases. If, at the moment of his tricep's pull when he activates the adjustment, he is not accurately and properly positioned, he will fail to effectively reduce atlas laterality, spinous rotation, odontoid laterality, lower cervical rotations, and cervical kink. Therefore, accuracy in positioning the base of support cannot be stressed too greatly.

It is an axiom of ASC adjusting that the adjustor's rotary motions must be converted into linear motion at the time of his delivery of the adjustment. The adjustic force must be expressed along one single line - - - the N-T Resultant. The parallel forces of the adjustor must coincide exactly with the N-T Resultant. Any deviation of force from the N-T Resultant will lock the atlas vertebra and prevent reduction of the misalignment factors.

We might compare the accuracy required to establish the base of support with the draftsman's accuracy in determining the center point from which to draw a circle, the circumference of which must pass through two or more separate points. The adjustor's base of support center must be located at that exact position in relation to the HR that, as he circumrotates to the patient's transverse process, his spinal column, acting as a lever, rotates around the center of his base of support like the spokes of a wheel around the hub of the wheel.

REFLEXES

In past years it has been observed when the adjustor turned his feet medialward he obtained a more efficient action in the adjustic process because he was better balanced, more accurate in his timing, and performed without undue stress. It was further noted that this ease of motion and control was enhanced by having the adjustor "tuck in his chin" much in the manner assumed by military personnel when standing at attention. The act was recommended to protect the adjustor against possible whiplash to himself when delivering the adjustment.

Obviously certain postural reflexes were initiated by these acts. A search of the literature of Kinesiology disclosed the concept of "lock-actions." T. McClurg Anderson (1) defines a lock-action as "Putting a part (of the body) into a position which will automatically stabilize other parts of the body and lead to a more efficient action with the minimum of effort."

Anderson explains the effects on the erect body of "turning in the foot" as one of locking the knee and ankle joints. "When the foot is turned in," Anderson states, "direct pressure on the forefoot stimulates reflex contraction of the most responsive calf muscles. Gastrocnemius tends to bend the knee, so that quadriceps reflexly contracts to stabilize the joint. Rectus femoris tends to tilt the pelvis forward and is reflexly counteracted by abdominal, gluteal, and erector spinae muscles -- erector spinae stabilizing the upper trunk to allow rectus abdominus to check downward movement of the symphysis pubis. Thus pressure on the plantar surface of the forefoot stimulates a chain of muscular action over the whole body."

Anderson (2) coments on the "neck-lock-action, the "tucking-in of the chin." "Straightening the cervical (secondary) curve," he states, "automatically elevates the chest, stimulates retraction of the shoulders, stabilizes the whole spinal column and so establishes good balance and trunk stability for efficient action of both upper and lower limbs. The scaleni neck muscles, anterior common spinal ligament, and the pelvic psoas muscles tend to be stretched when the head is effectively elevated. The combined stabilizing action of these structures governs the character and efficiency of most movements performed in the erect position."

(Editor's Note: The head is considered as elevated when the chin is tucked in. This is not accomplished by merely looking down. The chin must be "tucked in" with conscious effort if the reflex is to be effectively activated).

Anderson continues his explanation of the neck lock-action by stating: "The action of the abdominal muscles in stabilizing the pelvis is facilitated by the influence of the scaleni muscles on the anterior chest wall. Efficient stabilization of the pelvis and lumbar spine depends upon tension in the anterior common ligament and upon gluteals, quadratus lumborum, and erector spinae muscles. Straightening of the spinal column brought about by the neck lock-action enables these structures to coordinate their stabilizing functions."

EFFECTS OF NON-USE OF REFLEXES

When an adjustor is observed struggling to maintain his balance, to obtain ease of motion and control of his body throughout the phases of the adjustment, it is a clear sign that he has not initiated the neck-lock reflex or the foot-lock plantar reflex, or both. Frequently, in concentrating on some aspect of the adjustment complex, the adjustor may lose either or both of the lock actions. Therefore, the adjustor should constantly keep them in mind during the steps of the phases of the adjustment.

These reflexes work together and they complement each other. All of the acts of the adjustment are beneficially influenced by them. The pelvis, for example, must be maintained throughout the adjustment as a first class lever. It must be controlled and stabilized from its A-P aspect as well as its lateral aspects. Failure to so maintain the pelvis will introduce rotary motion into the parallel forces.

If both reflexes are not initiated, or are lost during the process of setting up the phases of the adjustment, the clockwise and counter-clockwise movements of the adjustor can not be balanced. These movements, if not balanced out, tend to destroy the necessary synergic action of the musculature, the maintenance, of the spinal column and pelvis as mechanical levers, and the tendency is for the spinal vertebrae to rotate in the transverse plane. Failure to lock the pelvis and lumbar spine in the acts of the adjustment lessens the alignment accuracy of the parallel forces.

INITIATING THE REFLEXES

The plantar reflex (foot lock-action) is activated by the simple act of "turning in the foot." Turning the feet medialward exerts the necessary pressure on the plantar surfaces of the feet. The axis of motion is always at the heel and the foot is left entirely in contact with the surface upon which it rests. The proportionate weight of the body is distributed along the entire surface of the foot.

Securing the neck lock-action has been sufficiently described above.

These reflex actions not only protect the adjustor but serve to protect the

Cont. on page 8 . . . .

"How to Adjust the Atlas Subluxation Complex," cont. from page 7 . . . . . .

patient. An adjustor will apply undue force in delivering the adjustment if he is under muscular stress. Undue, and unnecessary force, offsets efficient motion; it prevents reduction of the misalignment factors.

LOCATING THE BASE OF SUPPORT

For purposes of explanation, we will assume a patient with an atlas that has misaligned (subluxated) into the left frontal (lateral) plane of motion, and requires a Height vector of 5 inches and an Anterior vector of 5 inches to correct the misalignment factors of the ASC. This is a H5A5, and would be adjusted according to the schema (q.v.) presented above.

The patient is placed on his right side on a side-posture table and properly positioned. The adjustor locates the patient's left transverse process, measures from it straight out along the patient's face a distance of five inches. In so doing, he is measuring the rotation (A5). From the distal end of this measurement, the adjustor measures five inches up the patient's head (H5). This measurement is at right angles to the rotaton vector measurement. The adjustor has now established lines AB and BC. From point C to point A will approximate 7 inches. This is the HR in this case (hypotenuse) along which the adjustic force must travel when considered from a horizontal plane.

The adjustor then measures from point C one inch toward point A. This is point D, the settleback point. From point D, and at right angles to the HR, the adjustor establishes his center of base line, DE.

Point C should be temporarily marked in some manner. Line DE should be indicated on the adjusting platform by a piece of string until the adjustor becomes familiar with the procedure.

STEPS OF THE APPROACH PHASE

The adjustor, having located his base of support, will proceed in accordance with the eight descriptive steps of the APPROACH PHASE. We will discuss these steps in chronological order.

1. Using a loose knee action, the adjustor positions himself with a foot placed each side of line DE. The width between his feet approximates the distance from one acetabulum to the other acetabulum. Each foot is equidistant from the line DE. The feet are placed obliquely to the HR.

2. The inside foot (nearest the patient's body) is pivoted from the heel inward until it is parallel with line DE, or at right angles to the HR.

3. The adjustor's outside foot is advanced forward. This is done with the same action used in walking. In so doing the adjustor must take care not to rotate his pelvis anterior on the side of the outside foot. In other words, a line drawn through the adjustor's pelvis from acetabulum to acetabulum (pelvic lever) must remain nearly parallel to the HR. There will be a "dropping" of the pelvis on the side of the outside foot as the adjustor steps forward, as in walking; this action is advisable, however.

4. After placing the outside foot in the desired forward position, the adjustor pivots it from the heel medialward approximating a 40 degree angle to the HR. (This angulation of the outside foot will serve as a stabilization factor in the PELVIC LEVER PHASE.)

5. The plantar reflex (foot lock-action) is now activated by the pivoting medialward from the heels in steps 2 and 4.

6. The adjustor now "tucks in his chin" thereby activating the neck lock-action.

7. The adjustor now checks his weight distribution to see if he is balanced between the heels and balls of his feet. At this point there should be slightly more body weight on the outside foot.

8. The adjustor should sense his balanced position, be at complete ease. He is now ready for the second phase, the SETTLEBACK PHASE.

COMMENT

The adjustor should observe the following rule whenever he practices his adjustment on a device made for that purpose, such as a coordinator. Always practice to a listing. That is to say, that the value of practice is greatly enhanced by measuring out hypothetical rotation and height vectors and aligning the body, parallel forces, to a pre-determined N-T Resultant.

(continued)

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12. See Guyton for a complete discussion.

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