

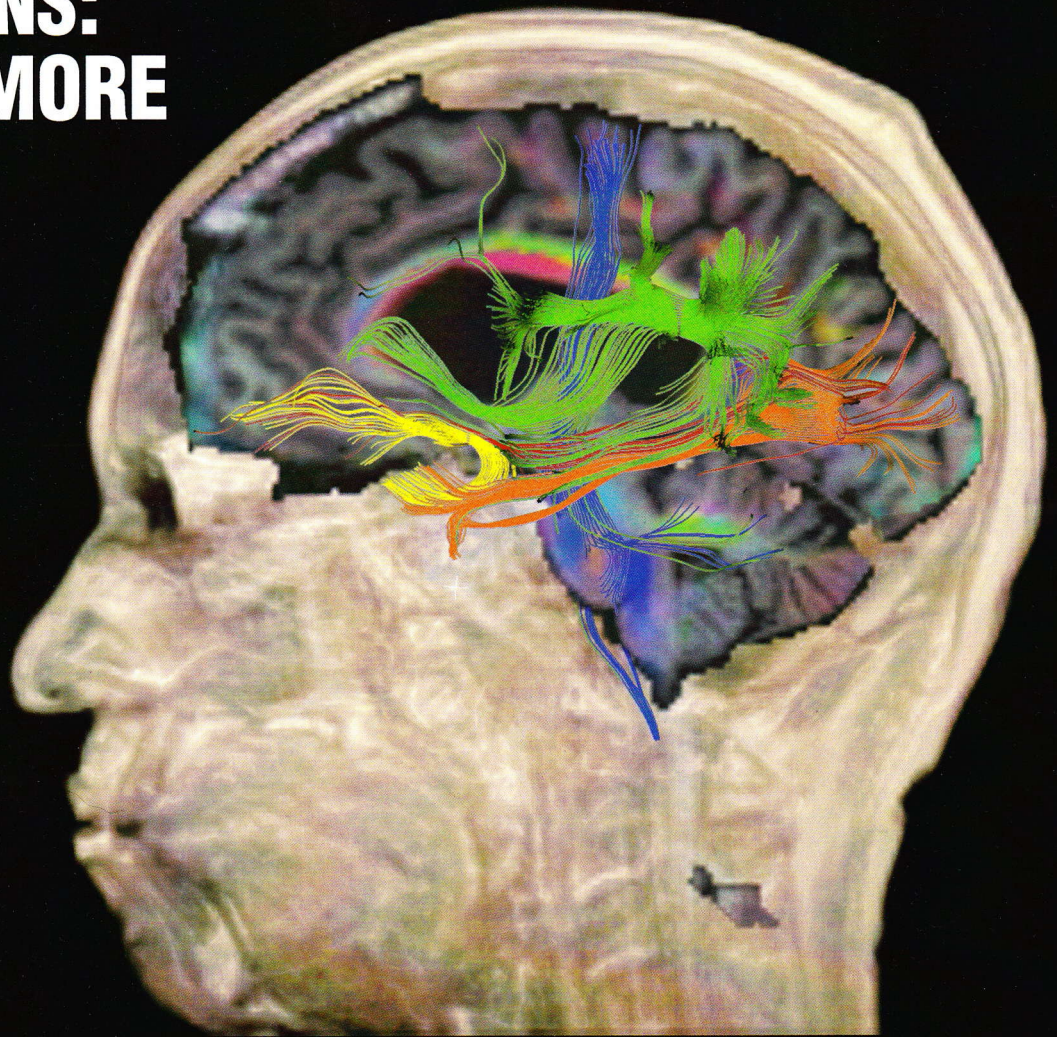
Medicine

JOURNAL OF THE MEDICAL ASSOCIATION OF ATLANTA

CONCUSSIONS: SILENT NO MORE

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- Vijay Agarwal, M.D.
- Jason W. Allen, M.D., Ph.D.
- Daniel Barrow, M.D.
- Jack Barrow
- Nelson Bennett, M.D.
- Gaye W. Cronin, OTD
- Helen B. Gelly, M.D., FUHM
- Kannan Narayana, M.D.
- Stewart Neill, M.D.
- David M. Schwartz, Ph.D., ABPdN, CIC
- Matthew H. Sweat, D.C., B.C.A.O.
- Roy W. Sweat, D.C., B.C.A.O.
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Spotlight:
Hyperbaric Medicine

Physician Burnout:
Small Tests of Change

Concussion: Silent No More

By Ramon M. Sanchez, M.D.

As the invited guest editor for the October issue focused on neurology and neurosurgery, I had a chance to consider numerous topics for this Atlanta physicians teaching venture. With one of the hottest topics in our respective fields receiving so much attention and publicity in the past 18 years, I looked no further. A Hollywood movie starring actor Will Smith was even dedicated to this topic.

The movie, *Concussion*, shows the consequences of NFL-related repeated mild brain injury. As a practicing board-certified neurologist with subspecialties in epilepsy and headache/neurological pain management in Atlanta for more than 28 years and training in neurology/neurosurgery, I will share my experience with this underdiagnosed condition. It's a topic that so far has had a lack of reliable medical/neurological testing measures that can document mild traumatic brain injury.

I see two to four new concussion patients per week. Sadly most patients are untreated for their concussion. I recently diagnosed two post-NFL players with new onset seizures and one post-NFL player with chronic traumatic encephalopathy (CTE) and Parkinsonism. These NFL players had repeated concussions during their careers.

For years I worked with a hyperbaric oxygen therapy (HBOT) center designed to treat acute/subacute and chronic concussions using an Israeli HBOT protocol. I saw tremendous value of HBOT in treating concussions. My two youngest daughters, who each suffered concussions, remarkably improved after three or four treatments.

For these reasons, I asked some of the best specialists in Atlanta that I have been blessed to work with to write articles on mild traumatic brain injury/concussion.

We are honored to have contributions from Emory Chairman of Neurosurgery Dr. Daniel Barrow, his son Jack Barrow and Dr. Vijay Agarwal, a professor at the Albert Einstein College of Medicine in New York who is a Fellow of Dr. Barrow, with a superb leading article on concussion.

Dr. Brent Weinberg and Dr. Jason Allen, who both specialize in neuroradiology at Emory, will inform us on new MRI imaging strategies for mild traumatic brain injuries/concussion.

Dr. Stewart Neill, a neuropathologist at Emory, will discuss a new biomarker to confirm mild brain injury/concussion and the discovery of the tau protein elevations after concussions that maybe play a role in promoting degenerative disorders and that in an autopsy help define chronic traumatic encephalopathy CTE.

Dr. Kannan Narayana, an assistant professor of neuroophthalmology at the Emory Eye Center, will share current evaluations and eye tests being developed to use on sideline evaluations for sports medicine. Dr. Ronald Steenerson, otol-

I see two to four new concussion patients per week. Sadly most patients are untreated for their concussion.

ogy and neurology, and Gaye Cronin, OTD, with the Atlanta Ear Clinic, Northside Hospital share their rich experience with vestibular issues that are so common in concussions.

Dr. David Schwartz, a neuropsychologist with the Concussion Institute at Gwinnett Medical Center, shares evaluations for acute, subacute and chronic concussion with ImPACT, RightEye and the Berlin Guidelines of 2016. Dr. Helen Gelly, Emory St. Joseph's Hospital, introduces exciting data using HBOT treatments with observed improved clinical symptoms for mild traumatic brain injury/concussion and chronic presentations.

Dr. Nelson Ben Bennett, a psychiatrist at the Amen Clinic in Atlanta, shares unique approaches using brain SPECT scans to evaluate functional damage from traumatic brain injury as well as the neurochemicals, nutrients, hormones, growth-promoting factors and neuroprotective factors altered. He discusses major components to promote nervous system regeneration.

Finally, most of my patients evaluated with mild traumatic brain injury/concussion have some element of atlas malrotations on physical exam. This mild post-traumatic injury is "off the radar" for most physicians and is treatable without surgery or manual manipulations. Dr. Roy Sweat and Dr. Matthew Sweat of the Sweat Institute share their experience with atlas malrotations evaluation and treatment in concussion.

I thank and applaud all the amazing contributors above who participated in this teaching venture for Atlanta physicians. ■

GUEST EDITOR



Ramon M Sanchez M.D.

Dr. Sanchez attended Tulane University as a scholar and graduated from the University of Miami in 1976. He attended the University of Miami's med school and performed his residency at Jackson Memorial/ U of Miami Med School Hospitals in General Surgery, Neurosurgery and Neurology as well as Thomas Jefferson Medical School Hospitals for Neurology. He had a fellowship at the University of Miami Med School in Epilepsy/EEG/Neurophysiology/Neuro-pharmacology. He later served as a Commander in the U.S. Navy and was Director of the EEG/Neuro Lab/ Headache-Pain/ Sleep/Ob Neuro-Clinics at San Diego, California Naval Hospital. He was named a Diplomate for the American Board of Psychiatry and Neurology in 1990 and the American Academy of Pain Management in 1990. He has worked in Atlanta at the private practice Peachtree Neurology Associates since 1990 and is affiliated with Emory-St. Joseph Hospital/ Atlanta Northside Hospital.

ATLAS CHIROPRACTIC ORTHOGONALITY

By Roy W Sweat, D.C., B.C.A.O., Matthew H. Sweat, BA., DC.,BCAO.; Dennis Fiorini, D.C., B.C.A.O.; Jeff Finnigan, D.C., B.C.A.O.

The brain and spinal cord are the most protected organs in the body and completely surrounded by bone.

The ribs help protect the lungs and some of the internal organs.

The ocular ridge helps protect the eyes and they are not surrounded by bone.

The brain and spinal cord are protected with cerebral spinal fluid (CSF).

The CSF keeps the brain from hitting inside of the skull.

Severe traumas can shock the brain against the skull and can cause post concussion syndromes (PCS).

These symptoms are brain fog, memory loss, disorientation, aphasia, extreme fatigue, insomnia and inability to concentrate.

Chronic Traumatic Encephalopathy (CTE) is a progressive degenerative disease of the brain found in people with a history of repetitive brain trauma (often athletes), including symptomatic concussions.

These severe head traumas can cause misalignments of the cranium, atlas and axis articulations.

The normal biomechanics of the cranium, the atlas and the cervical spine in the frontal dimension, z axis, the cranium should be vertical 90 degrees to the atlas. The atlas should be level. The cervical spine should be vertical and 90 degrees to the atlas.

These three structures should be orthogonal.

The occiput, atlas, axis and cervical spine are diarthryodial (freely movable joints that have a synovial membrane that secretes synovial fluid).

There are no vertebral foramen (interosseous locks) and no intervertebral discs in the occiput, atlas axis articulations.

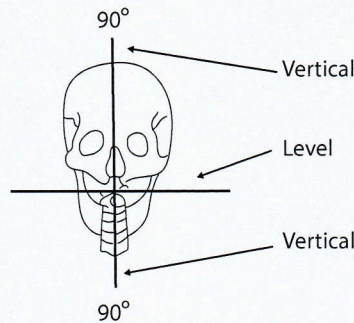
This makes the occipital, atlas and axis very vulnerable to trauma. ^{Figure 2}

These traumas are of epidemic proportions in this country.

In the Atlas Orthogonal Chiropractic Program our goal is to bring back the body's center of gravity properly over the center of the feet.

Neurological disorders may be brought on by these traumatic events. Concussion cases usually respond well as well as other neurological disorders.

Orthogonal, Figure 1



The Frontal Dimension

- On the Z-axis in their normal position:
1. The cranium should be vertical.
 2. The atlas should be level
 3. The cervical spine should be vertical.

The head should sit straight on the neck. When the atlas is out of alignment the cranium cannot be vertical. When the atlas is out of alignment the cervical spine cannot be vertical.

The remaining vertebrae down to L5-S1 are classified as symphysis (less movement and no synovial fluid). These spinal articulations can only move 5 to 7 degrees. The spinal cord descends through the foramen magnum, the atlas and the axis. ^{Figure 3}

Cervical Spine Anatomy

When these three rings are out of alignment they can cause problems with irritation and compression on the spinal cord.

The three rings:

1. Ring of the Foramen Magnum
2. Ring of the Atlas
3. Ring of the Axis

All three should be level and symmetrical.

When the atlas is out of alignment it can cause a tethering of the spinal cord and can change the shape of the spinal cord and the brain.

When you tether the tongue of the balloon it changes the whole shape of the balloon.

This can cause problems with the cerebral spinal fluid in post concussion syndromes (PCS).

On the frontal dimension, z axis, the axis spinous should be in the middle of the odontoid in its normal position.

The inferior facet of atlas lateral mass and the superior axis facets have the greatest range of motion of all the spinal articulations.

The axis spinous can rotate 47 degrees to the right or to the left. ^{Figure 5}

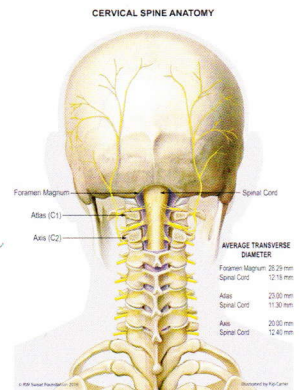


Figure 4

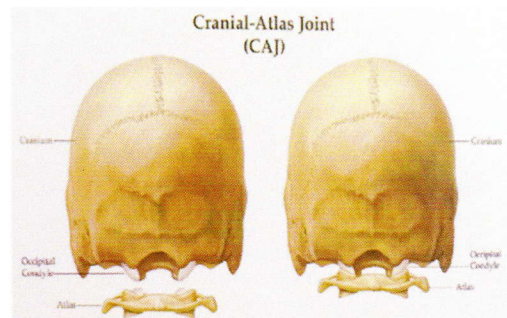


Figure 2

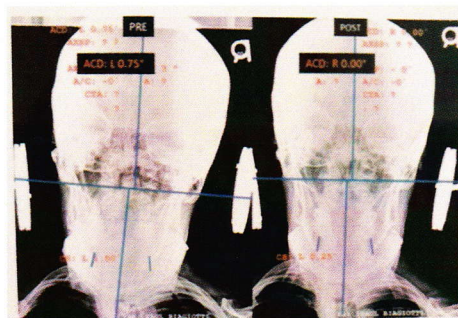


Figure 3

White III & Panjabi

"The extensive amount (47 degrees) of axial (y-axis) rotation at C2 can sometimes cause clinical problems with the vertebral

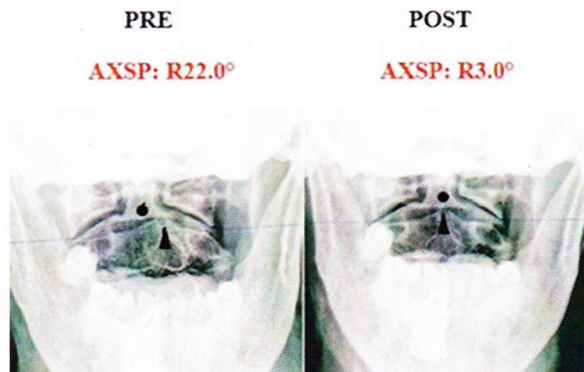


Figure 5

artery. Symptoms of vertigo, nausea, tinnitus and visual disturbances may occur from occlusion of the vertebral artery associated with axial rotation of the atlas.”⁸

Salmon Afsharpour

“Eleven out of twelve cranial nerve nuclei have their blood supply from the vertebral artery. The only one that does not is the olfactory nerve (CN1). It receives its blood supply from the internal carotid artery.”⁹

Keith L. Moore

“Sometimes when the neck is hyperextended while the head is turned to one side, the ganglion of the second cervical nerve on the opposite side is compressed between the posterior arches of the atlas and the axis. (Figure 5-48). This may be followed by prolonged headaches in the occipital region so severe that they may result in suicidal tendencies.”¹⁰

Eugene T. Patronis, Jr. Ph.D

“A mechanical impulse is imparted to the metal stylus by means of a spring-loaded plunger. The strength of this impulse is determined by the initial degree of compression given to the plunger spring. The impulse imparted to the stylus by the plunger excites a compressional wave in the stylus. The velocity of this wave in the stylus material is determined by the square root of the ratio of the Young’s modulus to the density of the stylus material. At the patient-stylus interface, dependent on the impedance match, a portion of this wave energy is transmitted into the patient and a portion is reflected back to the plunger.”¹¹

Lu and Ebraheim

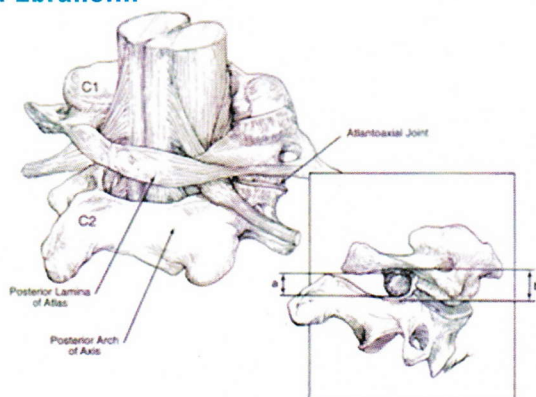


Figure 7. Reproduced with permission Wolters Kluwer

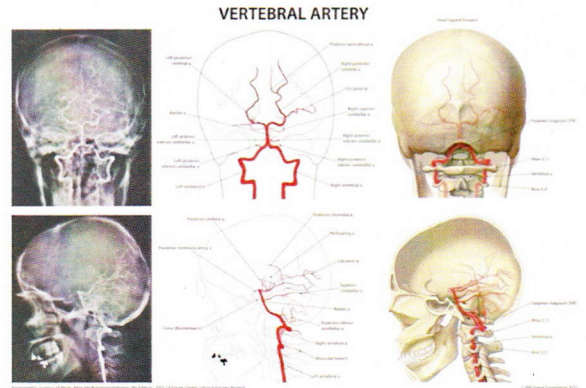


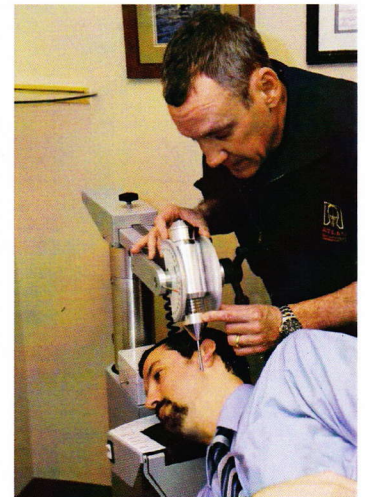
Figure 6

“When my Atlas is out, my brain is very confused, and I can’t concentrate. I feel fuzzy and can’t think!

When my Atlas is in, everything is Clear!”Glenn

Conclusion

Most all authorities agree that the occiput, atlas and axis area is the most vulnerable area to injury and misalignments in this area are the most pathogenic. These three areas should remain patent or open. The vertebral artery and the CSF-Cerebral Spinal Fluid can be affected in traumatic head and neck injuries. Patients often report improvement of the PCS Post Concussion Syndrome type symptoms. These traumas are of epidemic proportions. In the Atlas Orthogonal Chiropractic Program our goal is to bring back the body’s center of gravity properly over the center of the feet. Neurological disorders may be brought on by these traumatic events. Concussion cases usually respond well and other neurological disorders. ■



Atlas Orthogonal Adjusting Instrument

US Patent Number 4,461,286
Figure 8 Sweat Institute Gentle Moderate Force No manipulation

References

1. Sweat Institute for Atlas Orthogonal Chiropractic Orthogonality -Figure 1
2. Sweat Institute for Atlas Orthogonal Chiropractic Orthogonality -Figure 2
3. Sweat Institute for Atlas Orthogonal Chiropractic Orthogonality -Figure 3
4. Sweat Institute for Atlas Orthogonal Chiropractic Orthogonality -Figure 4
5. Sweat Institute for Atlas Orthogonal Chiropractic Orthogonality -Figure 5
6. Sweat Institute for Atlas Orthogonal Chiropractic Orthogonality -Figure 6
7. Lu, Jike, and Nabil A. Ebraheim. "Anatomic Considerations of C2 Nerve Root Ganglion." Spine 23.6 (1998): 649-52 Print. Figure 7
8. White, Augusta A., III and Manohar M. Panjabi. Clinical Biomechanics of the Spine. Philadelphia: J.B. Lippincott Company, 1978. Page 65 .
9. Afsharpour, Salmon Dr., Ph.D.-Neuroscience, Life University
10. Moore, Keith L., Clinically Oriented Anatomy, Baltimore, MD. Williams & Wilkins, 1985 Second Edition., Page 595
11. Patronis, Eugene T. Jr., Ph.D.Professor at school of Physics ,Georgia Institute of Technology
12. Sweat Institute for Atlas Orthogonal Chiropractic Orthogonality -Figure 8