Dynamic Chiropractic

Mild Brain Injury and/or Spinal Cord Compression Subluxation

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Spinal cord compression subluxations usually occur in a vehicle accident, when the head strikes the windshield, dashboard, steering wheel, headrest, door frame or window, and/or the head is struck by the explosion of the air bag. The spinal cord is thickest in the upper cervical region where it completely fills the spinal canal. The spinal cord is insensitive to pain and is often overlooked. If injured, it may become swollen, creating symptoms indistinguishable from mild brain injury.

Spinal Cord Compression Subluxation from Mild Brain Injury

Spinal cord compression subluxation will most often occur in the upper cervical region, which is freely movable, and the slightest displacement can result in impingement. For example, the skull articulates on the condyles of the occiput with the upper surfaces of the lateral masses of the atlas vertebra. In a whiplash-type injury, the head often is snapped backward toward the impact. Just as the condyles reach the limits of its articulation with the atlas, the head strikes the headrest, causing a pincher-type movement between the foramen magnum and the lateral masses compressing the spinal cord. The force of the impact of this injury may cause an occipitoatlantoaxial subluxation which may put mechanical pressure on the spinal cord. This traumatic joint lock may cause residual symptoms, creating confusion between a spinal cord compression subluxation and/or mild brain injury.

Mild Brain Injury

While the exterior skull is smooth, the inner surface contains ribbing, ridges and pronounced bony structures. The brain may be damaged by bouncing off the interior of the skull. Impact with the inner surface of the skull may cause bruising and swelling that often results in mild brain damage. This is often diagnosed as a brain concussion with post-concussion syndrome by the treating physician, who often assures the patient that a brain concussion is a reversible type of injury and that it will only be matter of time until they experience a complete medical recovery.

Brain Concussion

Traumatic brain concussion is divided into three divisions:

Grade I: When the trauma occurs, the injured person feels confusion and disorientation briefly, less than 15 minutes.

Grade II: When the trauma occurs, the injured person feels confusion and disorientation for more than 15 minutes.

Grade III: The injured person is unconscious. This is generally the most serious brain damage. The longer the person is unconscious, the greater the brain injury.

Post-Concussion Syndrome

Post-concussion syndrome presents with fatigue, headaches, dizziness, sensory dysfunction, reduced coordination, spasticity and sexual dysfunction; memory losses, slowed thinking and inability to express oneself, trouble organizing thoughts, difficulty selecting and recalling works, learning new information and retaining it; problems in concentrating, difficulty in perceiving, sequencing, judgment, communication, impaired writing and reading skills; anxiety, depression, loss of empathy, depressed motivation, emotional volatility and short temper, getting lost, confusion and agitation. Chronic fatigue syndrome is the most common diagnosis in two-thirds of these case, and minimal to moderate symptoms will vary dramatically.

Brain Injury

The human brain is an extraordinary organ. It consists of billions of microscopic fibers suspended in cerebrospinal fluid. When the brain is subjected to the forces of a whiplash injury, it often causes some fibers to become twisted and entangled. This may cause a disorganization of the nerve fibers and disorientation of that section of the brain. After injury, there often is a thickening of the protein and plaque forms. This is not readily seen on the MRI, but years later it may appear as a clear spot on the MRI in the area of brain injury.

Memory Malfunction

Memory consists of a few thousand brain cells firing in a particular, established pattern. Language is so complex that nouns are processed in one part of the brain and verbs in another. An area in the temporal lobe pulls together information about the names of objects, animals and people. Because the brain is compartmentalized, injuries to the brain may cause bizarre symptoms. For example, when prompted with Denver, the patient may respond with Colorado, but when asked to name a city in Colorado, the patient may go blank.

Philadelphia Head Injury Questionnaire

The Philadelphia Head Injury Questionnaire (PHIQ)[1] is a structured information and history-gathering instrument for use in detailing, organizing and documenting both the objective clinical findings secondary to all degrees of head trauma. The PHIQ is a very useful questionnaire, and your expertise will increase with use. It is a very essential tool if you treat auto accident victims.

Join the Team

Join with a team or form your own team of neuropsychologists, psychologists and neurologists. This is an exciting new area of diagnosing and treating head and neck trauma cases. The medical community generally speaking is not well-trained in neurobehavior. The physician often fails to diagnose the potentially chronic aspect of traumatic head injuries in the regular office visit. The neurosurgeon usually treats moderate and severe cases of brain and spinal cord injuries and may be too busy to give attention to the patient with these devastating problems of mild brain injury and spinal cord compression cases. The chiropractor already treats these patients with varied results, but when you are part of the team, you will find your results will improve.

Examination

Refer these head and neck patients to the members of your team for a neurologic examination, CT scan, MRI and EEG. When taking x-ray films, be sure to include the vertex and/or base posterior view with the Davis series. The vertex view will show the encroachment of the atlas into the foramen magnum. This can be very dramatic when presented in court.

Chiropractic Procedure

One of the most effective chiropractic procedures is the use of the thermocouple unit to detect spinal dermatome heat over the area where the vertebra is subluxated in the spine. Wherever the vertebral joint is locked, the nervous system is under pressure at that point and abnormal heat will be found. In head and neck injuries, this problem will often be detected at the occipitoatlantoaxial region. X-ray views are taken of the region and the subluxation visualized. The patient is placed facedown on the table and the Deerfield leg check is used to determine laterality of the occiput to the atlas.

Chiropractic Technique

This is followed by the gentle use of the Thompson technique of the occipital lift using the drop headpiece table or a Gonstead specific atlas adjustment in a seated position. If the atlas has side-slipped or rotated on the occiput, you may need to use a Palmer toggle recoil adjustment on a side posture drop headpiece table. Recheck with the Deerfield leg check to evaluate the results. The next day, check the spinal dermatome heat to determine the result of the chiropractic adjustment. This is a most effective chiropractic treatment for the release of spinal cord compression.

Chiropractic Results

One of the most important contributions in the treatment of head and neck injury cases is the upper cervical spinal adjustment by the chiropractic doctor. Compression of the spinal cord will result in disturbance of the function of the body below the area of subluxation. Symptoms often affecting the head above the subluxation may be due to compression of the nerves and blood vessels which supply the head, especially the vertebral arteries. Dramatic results often occur following the release of spinal cord compression to permit impulses to flow through the spinal cord thus allowing many symptoms of head and neck injury cases to subside.

Reference

1. Curry L., Richard Ivins R., Gowen T. Philadelphia Head Injury Questionnaire (PHIQ). The PHIQ is available through Western Psychological Services, 12031 Wilshire Boulevard, Los Angeles, CA 90025-1251.

Bibliography

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