New diagnostic approach can improve treatment of whiplash injuries. Functional magnetic resonance tomography makes visualization of the injuries possible

[Article in Swedish]


Bergholm U, Johansson BH.

FROM THE ABSTRACT:

Patients suffering from chronic pain and dysfunction after acceleration/deceleration trauma to the cervical spine often present reliability problems.

This is partly due to inadequate possibilities of diagnosing of the soft tissue structures in this area.

A new diagnostic method--functional magnetic resonance imaging (fMRI) has made it possible to detect injuries in ligaments and capsules at the craniocervical junction.

Not only do these structures stabilize the head during rotation movements, but they also contain receptors of the central nervous system, and thus have the most important function in position perception (i.e. proprioception) and movement control.

The late onset of symptoms in this patient group can now be explained by the functional stenosis of the spinal cord and brainstem due to scar formation around the dens of the axis after injury.

Modern neurophysiology can now explain the background of the generalized and complex picture of chronic pain and muscular and cognitive dysfunction.

This new knowledge has prepared the way for more specific therapy in patients suffering from craniocervical instability symptoms and pain from disks and facet joints in the cervical spine after whiplash trauma.

COMMENTS FROM DAN MURPHY

1) Sadly, this article is in Swedish, and only the abstract is in English.

2) Functional MRI scans can detect injuries in ligaments and capsules at the craniocervical junction.
3) The ligaments and capsules of the craniocervical junction stabilize the head during rotation movements. Consequently, injury to these upper cervical structures would compromise this stability. This is very important in terms of chronicity and important to upper cervical chiropractic.

4) The ligaments and capsules of the craniocervical junction contain afferent proprioceptors that control central nervous system, position perception and movement control. Again, this is also important in terms of chronicity and to upper cervical chiropractic management of this adverse mechanical afferent input with spinal adjusting. Importantly the authors also suggest that the altered upper cervical mechanical afferent input into the central nervous system is related to cognitive dysfunction.

5) The late onset of symptoms in chronic whiplash patient groups can be explained by the functional stenosis of the spinal cord and brainstem due to scar formation around the dens of the axis after injury. This comment uses the concept of post-traumatic FIBROSIS OF REPAIR resulting in space compromise of the upper cervical spinal cord and possible lower brain stem. This would argue for the benefits of specific upper cervical chiropractic techniques that attempt to restore optimal alignment of the upper cervical spine / occiput relationship. Conceptually, such optimally improved alignment would reduce the space compromise and altered neurological function.

6) The authors note that management of these problems would require “more specific therapy in patients suffering from craniocervical instability.” I believe that such therapy would have to include improvement of alignment, and improvement in joint mechanoreception. To me, this argues that they need chiropractic.