

Findings and Outcome in Whiplash-Type Neck Distortions

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The authors assessed the clinical and imaging findings and late outcome in 50 patients with whiplash-type neck distortions.

Early symptoms are neck pain, stiffness, and sometimes radiating pain; later bizarre symptomatology poses intricate clinical and medicolegal problems.

Pathoanatomic studies indicate that soft tissue injuries may be overlooked.

Neck pain persisted in 24 patients. [24/50 = 48%]

Radiating pain developed within 6 weeks in 19 patients. [19/50 = 38%]

Follow-up surgery on the chronic patients showed a high incidence of discoligamentous injuries in whiplash-type distortions.

KEY POINTS FROM THIS STUDY:

- 1) "Patients with whiplash-type neck distortions inflicted in car collisions tend to develop progressive neck pain and stiffness during the first days after the accident."
- 2) "These symptoms can persist over years and may become bizarre and disabling and ensue cumbersome and costly insurance litigations."
- 3) "A significant increase in cervical spine injuries has been reported after the introduction of seat belts." [10 references]
- 4) "Most physicians are unaware of the potential severity of the injury, and only few patients are reassessed routinely for possible missed injuries after the initial examination."
- 5) "Emergency radiograms are usually normal and may contribute to the physician's perception of whiplash lesions as benign and self-limiting conditions."
- 6) "Abnormal mobility and early onset of degenerative changes are considered indirect signs of hidden or occult soft tissue lesions." **[Important]**
- 7) Patients who are injured in automobile collisions "typically complain of neck stiffness and pain in the neck musculature immediately after the accident and a minority of patients also have radiating pain. Symptoms worsen over time, not infrequently after an asymptomatic interval." **[Important]**

- 8) "Conventional radiograms are notoriously negative in whiplash-type injuries and a suspicion of a soft tissue lesion can only be inferred by indirect signs such as vertebral malalignment, ligament, or muscle insertion site avulsions or signs of segmental instability." **[Important]**
- 9) "Flexion-extension radiograms correctly showed segmental instability in patients with persistent neck pain and posterior soft tissue ruptures."
- 10) Traffic accident victims have multilevel facet joint hemarthrosis with joint capsule ruptures, and such hemarthroses and ruptures of the neck muscles in the vicinity of the facet joints are seen during surgery.
- 11) "Magnetic resonance studies 6 to 8 weeks after the injury did not show any of the posterior injuries although severe neck pain and abnormal posterior gaping on flexion-extension radiograms indicated posterior injuries that subsequently at surgery presented as fresh ruptures or scar tissue." **[Important]**
- 12) "Hyperextension or axial distraction injuries in adolescents differ from those in adults because the nonassimilated ring apophysis is more susceptible to injury than the disc itself." **[Important]**
- 13) "Traumatic cartilaginous endplate separations may explain why the two young patients with extensive posterior soft tissue injuries had normal disc signals on magnetic resonance imaging. Because the discs are structurally intact in these avulsion injuries, they may generate normal signals on magnetic resonance."
- 14) "Pain can originate both from the ganglion and the richly innervated annulus fibrosus and also from the facet joints causing both local and referred pain." **[Key]**
- 15) The most likely source of radicular symptoms is perineural *scarring*. **[Key]**
- 16) "Patients with neck distortions after traffic accidents should be mobilized early within the limits of pain to prevent scar transformation of hidden injuries."
- 17) "The injured spinal segments had become increasingly stiffer over 5 years, which may reflect healing of unrecognized soft tissue injuries." **[Important]**
- 18) "In patients with sequelae after a whiplash-type neck distortion trauma, a plethora of diffuse and even bizarre symptoms and signs from seemingly nonrelated organ systems have been reported. Traction injuries of the autonomic nerves surrounding the vertebral artery and tethering of the brainstem and post-concussion cerebral disorders have been suggested as possible causes for these symptoms, but their etiology still remains unknown."

CHIROPRACTICALLY IMPORTANT POINTS FROM THIS STUDY FROM DAN MURPHY

- Surgery on whiplash-injured patients 5 years after injury shows a high incidence of discoligamentous injuries.
- 48% of whiplash-injured patients have persistent pain at 5 years after injury.
- 38% of whiplash-injured patients will develop radiating pain within 6 weeks of injury.
- Whiplash-injured patients develop progressive neck pain and stiffness during the first days after the accident.
- Whiplash symptoms can persist for years, and may become bizarre and disabling.
- "A significant increase in cervical spine injuries has been reported after the introduction of seat belts."
- Initial x-rays and MRIs are generally non-revealing as to the source of a whiplash-injured patient's soft tissue injuries.
- Signs of hidden soft tissue injuries include abnormal joint mobility, early onset of degenerative changes, segmental instability on flexion-extension x-rays, and progressive segmental stiffness.
- The primary injury from whiplash mechanism is to the facet joints with hemarthroses.
- "Patients with neck distortions after traffic accidents should be mobilized early within the limits of pain to prevent scar transformation of hidden injuries."