

A Case Study in Soft Tissue Treatment: Chronic Upper Cervical Joint Dysfunction Secondary to Severe Hyperextension Injury.

Joseph Cimino

R.G., a 23-year-old college student, entered my office and gave the following history:

In late March 1988, he was driving down a main street, at about 35 mph. A vehicle which had slowed, apparently to wait for him to pass before turning, suddenly turned left in front of him, when he was approximately 15 feet away.

The ensuing accident left R.G. with his four upper incisors broken, a result of his face striking the windshield. He received multiple facial lacerations and broke his right wrist. He strained his left shoulder and felt soreness in the right shoulder.

Following the accident he was taken to the hospital for examination. He had his right wrist x-rayed for a fracture, and had the glass fragments removed from his face. There was essentially no treatment directed to his cervical or shoulder injuries.

Later that day and the next, he had a "very sore neck and muscles in back."

Almost four months later, in late July of 1988, the patient began care with a chiropractic physician for his untreated neck pain. He had limited relief with this care.

Early in January of 1989, R.G. entered my office. He presented me with the following complaints:

1. Neck pain and the inability to rotate his head as far as before the accident, with a sharp pain limiting this motion.
2. Mid-scapular and left shoulder pain and discomfort, with a tingling feeling noticed down the left arm, as well as an awkward sensation of the left shoulder's position; the left shoulder was "hanging differently" than the right shoulder.

Upon examination, the most significant findings were:

Right and left lateral flexion: 35° 30° (45°)

Right and left rotation: 55° 40° (70°)

Premature loss of upper cervical range of motion limited by deep, intense pain with muscular pain in right suboccipital muscles, greater than that of the left suboccipital muscles.

CO/1/2 -- Loss of left rotation and right rotation; left greater than the right, with sharp and intense pain at the limit of motion.

Abnormal cervical biomechanics demonstrated on a flexion/extension radiographic study, in January 1989. (All previous and recent films were interpreted by Dr. Susan Yazvac, D.C., D.A.C.B.R.)

Slight winging of left scapula associated with a weak left serratus anterior. Adaptive shortening: left pectoralis minor and major, trapezius, levator scapula, and suboccipital muscles.

Posturally: Head held in slight left lateral flexion, high left shoulder, and a slight dextroscoliosis of upper thoracic spine; apex T5, slight levoscoliosis lumbar spine.

My diagnosis was: Chronic, moderate upper cervical hyperextension injury with marked restriction and concomitant abnormal biomechanical motion of cervical spine. Chronic mid-thoracic and costovertebral joint syndrome with attendant chronic myotendinous strain. Adaptive shortening: left lateral levator scapuli, trapezius, pectoralis minor, and suboccipital muscles.

Treatment had consisted of:

Chiropractic manipulation to the lower cervical, thoracic, and costovertebral joint restrictions.

Mobilization (low velocity, medium/high amplitude push) of upper cervical joints, C0, C1, C2, as well as of the left shoulder.

Soft tissue treatment: Therapeutic muscle stretching for adaptive shortened/spasmed muscles, strengthening appropriate for weakened muscles.

Following six months of treatment the patient had recovered full right and left rotation, with very slight pain at the end of left rotation. This pain was most likely due to scar tissue/shortening within the alar ligaments, which control much of the rotation and lateral flexion that occurs between C0-C2.

Through mobilization and therapeutic muscle stretching, the pain and loss of range of motion experienced by R.G. had been essentially resolved. Soft tissue treatment and rehabilitative exercises for the left shoulder resolved the discomfort and his positional sense of it "not being quite right."

Ligamentous and myofascial injury requires time and proper rehabilitation to become pain free and healthy tissue, although it is never quite as strong as undamaged tissue. Considering the extent of the injuries sustained by R.G., and the inadequate care he received following the accident, it was not surprising that it has taken so long to see progress with the residual symptoms.

The proper application of soft tissue therapy, in this case a combination of therapeutic muscle stretching and mobilization, can often make significant differences in the ultimate resolution of your patient's injuries.

*Joseph A. Cimino, D.C.
Portland, Oregon*

JANUARY 1991