Resolution Of An Acute Rotator Cuff Strain With Biofeedback/TENS And Soft Tissue Mobilization
Category: Shoulder – Powerlifting

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HISTORY: A 56-year-old competitive middleweight powerlifter reported with marked pain and loss of ROM in his left shoulder. The patient performed rotator cuff exercises on a machine he was not accustomed and felt stiffness and fatigue in the shoulder afterwards. Two days later, the patient performed heavy bench presses and developed left shoulder pain. The patient did not experience a "tearing sensation" or a "pop sensation". The patient had left shoulder pain at night only if he slept on his left shoulder. **PHYSICAL EXAMINATION:** Active range of motion (AROM) was 10 deg flexion and abduction and 20 deg lateral rotation in the neutral position. Manual muscle tests of the supraspinatus and infraspinatus were difficult to assess secondary to pain. The patient's pain was 8/10 with active motion and 2/10 at rest. The pain was global in the shoulder. The morphology of the long head of the biceps was normal. 2+ to 3+ tenderness to palpation was noted over the greater tuberosity and biceps tendon, infraspinatus and upper trapezius and supraspinatus. **DIFFERENTIAL DIAGNOSES**: 1) rotator cuff tear; 2) acute subacromial impingement; 3) acute rotator cuff strain. **TESTS**: None. It was discussed with the patient that in light of his night pain occurring only when he sleeps on the involved side, and the manual muscle tests not being weak but rather being painful, the may have an acute strain of the rotator cuff and subacromial impingement, and an MR scan would be withheld unless the patient failed to improve. **FINAL DIAGNOSIS**: 1) Acute rotator cuff strain 2) Acute subacromial impingement **TREATMENT**: The treatment plan included a new form of electric stimulation known as the InterX 5000®, soft tissue mobilization and cryotherapy. The InterX 5000® is classified as biofeedback and TENS by the FDA and research suggests it may be central nervous system mediated. A Visual Analog Scale (VAS) was used to monitor the patient's pain. The patient received 5 treatments over 14 days and utilized cryotherapy at home twice per day. **OUTCOME**: The patient responded well to the treatment plan. The VAS average pain was "8" on day 1, and "2" on day 14. The patient was able to fully flex and abduct his shoulder after five treatments. At this point, the patient began progressive rotator cuff strengthening with sidelying abduction, sidelying lateral rotation, and sidelying horizontal extension. The patient began using an empty bar to bench press four weeks after the injury. The rapid return to function supports the diagnosis of an acute rotator cuff strain. **DISCUSSION:** The patient responded more quickly and completely than anticipated. The combination of the soft tissue mobilization and the InterX 5000® should be further investigated in the treatment of acute strains.

Poster presentation
Chiropractic Sports Sciences Symposium
San Francisco, CA April 2006