Dynamic Chiropractic

MUSCULOSKELETAL PAIN

Musculoskeletal Sonography: A Case Report on the Shoulder

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Pain in and around the shoulder is a common problem seen in one of 10 patients in a physical medicine practice.[1] The shoulder is a universal joint in function and mobility. It is also an unstable joint, susceptible to injury and dislocation because of the shallow depth of the glenoid fossa and the bulbous humeral head.

This case report presents a classic injury to the "critical zone" of the rotator cuff: the anterolateral supraspinatus tendon.[2] Diagnostic ultrasonography was utilized to detect a tear of the rotator cuff.

History

A 35-year-old self-employed office worker was the driver in a rear impact auto accident. At the time of the accident, she had the seat belt and shoulder strap fastened.

The patient complained of pain in the entire left shoulder region. She had remained functional on a limited basis for eight weeks posttrauma.

Clinical exam indicated soft tissue pathology by positive orthopedic examination. Radiographs were negative for fracture or dislocations of the glenohumeral, acromioclavicular, or sternoclavicular joints.

Diagnostic Ultrasonography

The ultrasound examination was performed with a 7.5 mHZ linear array probe. Sixteen transverse and longitudinal images were obtained on each shoulder. It is standard procedure in musculoskeletal sonography to do bilateral scans of the extremities for proper comparison.

[SCAN Fig. 1: Transverse view of the supraspinatus tendon. Asterisks (*) indicate the margins of the tendon tear. The caret (^) indicates joint effusion due to fibrous interruption.]

Findings

The ultrasound images showed a primary finding of a partial thickness tear of the left supraspinatus tendon by examining the anterior and middle portions of the cuff (see Figure 1). Examination of the posterior rotator cuff revealed an effusion of the subdeltoid bursa with small internal calcifications. Inflammatory changes indicating tendinitis were seen involving the left biceps and subscapularis tendons. Tenosynovitis was not indicated because the ultrasound images did not visualize the tendon sheath separate from the tendon itself. The supraspinatus tear is in the area knows as the "critical zone." The ultrasound findings were comprehensive and instantaneously useful to the physician in determining treatment or referral protocols.

The tears of the supraspinatus and infraspinatus tendons were ranked as Grade II tears.[3] There are

four suggested diagnostic criteria for rotator cuff tears. The tears seen in this case show a "localized non-visualization or focal non-visualization" of the tendon fibers. This is a highly reliable finding.

Discussion

Musculoskeletal sonography is a highly developed imaging modality. The accuracy of ultrasonography to evaluate the soft tissues of the shoulder and other musculoskeletal structures have been repeatedly compared to other imaging modalities such as MR.[3,4,5] Sonography of the musculoskeletal system is a highly researched and advanced practice of imaging the muscles, ligaments, cartilages and joints of the body.[6] This case deals with a recent and easily attributable trauma. However, the less conspicuous pathology from degenerative changes and repeated micro-trauma are also pathologic entities in need of extensive evaluation when seen in the physical medicine environment. Left undiagnosed and untreated these problems lead to rupture of the rotator cuff.

Musculoskeletal sonography is a noninvasive and cost-effective imaging modality. Its increased availability and reliable results has prompted increased frequency of utilization.[7]

By implementing musculoskeletal sonography into a regular evaluation of the shoulder, the physician is providing a comprehensive exam of this region for many precarious and troublesome pathologies.

Musculoskeletal ultrasonography is the imaging modality of choice for soft tissue diagnosis. The chiropractic doctor is well suited by training to make this technology an integral part of the practice regimen. It's safe, easy and accurate.

References

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