

A New Functional Shoulder Test

Warren Hammer, MS, DC, DABCO

At the last soft tissue seminar aboard the Pacific Princess Cruise in the Caribbean, a 55-year-old doctor presented with a very interesting shoulder problem.

He stated that during the course of his working day his shoulder pain steadily increased. He also stated that he had shoulder pain during the night while sleeping on the shoulder. He said that x-rays taken last year revealed sclerosis at the greater tuberosity and some degeneration at the acromioclavicular joint.

The positive findings of a functional examination of the shoulder revealed pain on resistive shoulder abduction and minimal instability when tested in a posterior to anterior stress compared to the opposite shoulder. Stressing the humeral head in a posterior to anterior direction with the arm in abduction (90 degrees), and external rotation (apprehension test) created pain in the anterior capsule compared to the opposite side. Upon questioning, the doctor stated that he injured his shoulder years ago. It is important to realize that a shoulder that reveals anterior instability can, with overuse, exert a traction affect on the rotator cuff muscle/tendon causing pain and possible weakness. The cuff muscles function to compress and depress the humeral head against the glenoid. With instability, in this case excessive anterior humeral translation, the rotator cuff muscles are forced to overwork to maintain humeral stability. Over a period of time, excessive occult or overt anterior translation of the humeral head will eventually fatigue the rotator muscles and create strain and eventual tendinitis.

A new test has recently been devised¹ which determines if instability is etiologically related to tendinitis of the rotator cuff muscles. After the supine apprehension test is performed, with the patient in the apprehension position (abduction 90 degrees, external rotation and slight extension), the examiner reduces the anterior instability position by pushing proximal humerus posterior. At this point, if increasing external rotation is less painful (relieving anterior instability), then you can conclude that the anterior instability is probably primary and the supraspinatus tendinitis (painful resisted abduction) is secondary. While friction massage and modalities on the supraspinatus might relieve the tendinitis, ultimate cure of the problem necessitates increasing the strength and stability of the rotator cuff musculature.

In this case, the passive static tissue (glenoid labrum), capsule or glenohumeral ligaments may be elongated causing a stress on the dynamic stabilizers (rotator cuff muscles).

The doctor was told to have his supraspinatus treated by friction massage to realign scar tissue and improve extensibility of the tendon. He was also told to build up the rotator cuff muscles to improve the stabilization of the humeral head in the glenoid. Exercises should not be performed in extreme external rotation or at 90 degrees shoulder abduction in order to reduce the stress on the anterior capsule and subacromial space. Of course, if the instability is excessive and the patient depends on his shoulder for work or athletics, surgery may be necessary.

This case was interesting in that it demonstrated a weakness in inert tissue (capsule etc.) that eventually affected the contractile tissues (supraspinatus tenoperiosteal insertion). The use of the

shoulder reduction test helps us to determine if shoulder instability is related to the causes of shoulder impingement.

References

1. Jobe, F.W.; Kvitne, R.S. Shoulder Pain in the Overhand Or Throwing Athlete: The Relationship of Anterior Instability and Rotator Cuff Impingement. *Orth Rev* 1989; 18:963-975.

JANUARY 1990