Shoulder Instability

By Warren Hammer, MS, DC, DABCO

One of the main reasons rotator cuff tendinitis does not respond is because of shoulder instability. Shoulder instability may vary from the minimal occult type to recurrent shoulder dislocation and subluxation. This article deals with the minimal type of instability. The cuff muscles, ligaments, and capsule are the main stabilizers of the shoulder, and unless we attend to the instability factor, treatment of the tendinitis will not be effective. While friction massage, exercise, and modalities may realign and improve the pathological tissue, the presence of instability in the shoulder will act as a predisposition to recurrent tendinitis. Anterior instability, which is the most common type, can result in continued traction stress to the cuff muscles and tendons. Eventually, the inflammatory process is initiated.

We test for minimal occult instability by way of a passive examination, especially passive lateral rotation and use of the relocation test. Instability represents an extrinsic stress to the cuff that eventually results in an impingement to the cuff tissue. Fue et al., states that the medical treatment of subacromial injections and acromioplasty will fail if instability is the main cause of the impingement. They recommend non-operative treatment including rotator cuff strengthening exercises and prevention of instability.

Kronberg et al., did EMG studies on patients with instability versus normal patients. They discussed that with instability our muscles immediately attempt to compensate by increasing their activity or even act out of phase. The supraspinatus which compresses (stabilizes) the head of the humerus increases its activity in the unstable shoulder during all shoulder movements except flexion. The other chief muscular stabilizers, the infraspinatus and subscapularis also showed increased activity. They found that the subscapularis which is an internal rotator and protector of the anterior part of the shoulder showed increased activity during internal rotation and decreased activity during external rotation. Glousman et al., found decreased activity in the subscapularis in pitchers with unstable shoulders. It is felt that in normal patients, when the subscapularis is lengthened, proprioception leads to reflexed increased muscle activity and shortens the muscle length. In patients with joint laxity, the subscapularis, due to its increased resting fiber length, may not have the same proprioceptive response and allow further overstretching during external rotation.
While it would appear that subscapularis strengthening would improve most by internal rotation, a recent EMG analysis of glenohumeral muscles\(^5\) indicates that exercising the shoulder with elevation of the arm in the scapular plane, with the arm internally rotated, military press, flexion and abduction had greater impact than internal rotation exercises.

References


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Editor’s Note:

Dr. Hammer will conduct his next soft tissue seminar on October 12-13, 1991, in Rochester, New York. You may call 1-800-327-2289 to register.
Dr. Hammer’s new book, Functional Soft Tissue Examination and Treatment by Manual Methods: The Extremities, is now available. Please see the Preferred Reading and Viewing list on page xx, Part T-126 to order your copy.

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