

Tidbits on Soft Tissue

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The following article deals with a variety of additional information that may be added to the Soft Tissue (ST) course. While this information may be more pertinent to the doctors and students who have taken the course, I am sure that the casual reader will find it useful.

1. Passive shoulder horizontal adduction is one of the functional tests used to elicit pain in the acromioclavicular joint. This test compresses the anterior aspect of the A-C joint. Another test can also be used to compress the posterior portion of the A-C joint. Test the patient by passively internally rotating, extending, and adducting the arm.
2. A positive drop arm test due to a rotator cuff tear is rare in the young athlete. It is more common in the older, degenerative tears.¹
3. Rotator cuff tendinitis becomes painful with activity while the classic symptom of rotator cuff tear is nocturnal and rest pain.¹
4. Another classic sign of cuff tear is atrophy of the supraspinatus and/or infraspinatus. The atrophy may also occur in a more rare condition, suprascapular neuritis.
5. Stretching is not usually recommended in the treatment of shoulder instability, but anterior shoulder instability may be associated with tightness of the posterior deltoid, posterior capsule, and rhomboids. These tissues may require stretching because a tight posterior deltoid can push the head of the humerus too far forward in the glenoid when it contracts.¹ The posterior capsule may be stretched by having the patient horizontally adduct his arm across the chest and use the other hand on the elbow to create the stretch. The posterior deltoid and rhomboids may be stretched by having the patient fully abduct one arm 180 degrees, with the forearm behind the head and stretch by grasping the elbow with the opposite hand and pulling across to the contralateral side.

Recent EMG studies² regarding the shoulder muscles may relate to functional testing and rehabilitation of the shoulder. We realize that in coronal abduction of the shoulder, the prime movers are the anterior and middle deltoid and supraspinatus muscles. The supraspinatus (compresses) along with the infraspinatus and subscapularis muscles also act to depress the head of the humerus in the glenoid, while the deltoid elevates the arm. These muscles are known as dynamic stabilizers and must be strengthened, especially if there is associated shoulder instability. Another muscle that must not be forgotten is the latissimus dorsi which is also a shoulder dynamic stabilizer which expresses peak activity at 150 degrees of coronal abduction. This muscle, along with the infraspinatus which also peaks in coronal abduction at 150 degrees, is important in pressing the humeral head into the glenoid fossa. The latissimus dorsi may be strengthened by chin-ups.

As far as muscle testing is concerned regarding maximum EMG activity; the infraspinatus shows more activity in external rotation and the subscapularis shows more activity in internal rotation, while in the

neutral testing position (arm at the side) than at 45 degrees or 90 degrees of abduction.

Please do not forget to compare passive and contractile tissue of each extremity before arriving at a conclusion as to the source of the pain. Knowledge of the principle type of tissue responsible for the pain (capsule, ligament, muscle, tendon, joint) is essential for proper management of the condition.

References

1. Jobe, F.W., Bradley, J.P. "The Diagnosis and Non-operative Treatment of Shoulder Injuries in Athletes." Clin Sports Med 1989; 8(3): 419-437.
2. Kronberg, M., Nemeth, G., Brostrom, L.A. "Muscle Activity and Coordination in the Normal Shoulder: an electromyographic study." Clin Orth and Rel Res 1990; 257, pp 76-86.

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Editor's Note:

Dr. Warren Hammer and Dr. John C. Lowe will be featured speakers at the British Chiropractic Association's Annual Conference in Torqua, England, on October 19 and 20. They will be addressing the convention on the subject of soft tissue injuries, diagnosis, therapies, and treatment. If you will be in England at that time in October, be sure and attend. For further information, please call the British Chiropractic Association: Premier House, 10 Greycoat Place, London, SW1P 1SB. Telephone 01-222-8866.

Dr. Hammer's new book, Functions of Soft Tissue Examination and Treatment by Manual Methods: Extremities, will soon be available. Please see the Preferred Reading and Viewing list on page xx to order your copy in advance.

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