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Diagnosing Acromioclavicular Joint Pain

Acromioclavicular joint (ACJ) pain is common in patients with shoulder pain. Arthritis degeneration is common and can limit elevation maneuvers. The most common means to confirm that ACJ degenerative findings (as present on imaging) are the reason for the shoulder pain include: direct palpation at the joint line, cross body maneuvers, and pain at end range elevation. The O’Brien (Active Compression) test is another mechanism to identify AC joint related pain and dysfunction. In the O’Brien test the patient will localize their symptomatic complaint as being more superficial as opposed to deep in the joint as with superior labral lesions.

A lesser known test to evaluate for the presence of symptom producing ACJ degeneration is the Paxinos test. To conduct this test the patient is comfortably seated with their hands in their lap. The examiner places their hand over the shoulder so that the thumb rests under the posterolateral aspect of the acromion and the index finger(s) are placed superior to the midpart of the ipsilateral clavicle. From this position the examiner exert a force in an anterosuperior direction on the acromion with the fingers are pushing in the opposite direction on the clavicle.

A positive test is defined by the reproduction of symptoms in the area of the acromioclavicular joint.

This test was evaluated for its diagnostic accuracy in a study by Walton J et al, in a paper published in the Journal of Bone and Joint Surgery in 2004. The reference standard for an acromioclavicular joint pathology was whether or not a lidocaine injection into the acromioclavicular joint decreased their symptomatic complaint by at least 50% within 10 minutes.

Paxinos Test

New Test for Cubital Tunnel Syndrome

A few years ago I wrote about a new test to identify cubital tunnel syndrome in a previous issue that had impressive diagnostic accuracy. A recent study in the Journal of Shoulder and Elbow Surgery describes another test with similar clinical utility. It’s a variation of a provocative maneuver (prolonged elbow flexion concurrent with wrist extension) that has long been advocated as a means to put tension on the ulnar nerve as it passes through the cubital tunnel.

Cubital tunnel syndrome is the second most common peripheral entrapment neuropathy of the upper extremity (behind carpal tunnel syndrome). The sensitivity of holding the elbow in prolonged flexion is about 75% at one minute and increases to 86-93% if this posture is maintained for up to 3 minutes. It has been hypothesized that positioning the shoulder in abduction and internal rotation will further stretch the nerve and possibly decrease the time it would take for the classic paraesthesia symptoms to appear. This study aimed to compare the provocation accuracy of three different sustained postures to see which position had the highest degree of specificity and sensitivity.

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Volume 7, Issue 2
March 2012
A meniscal cyst is an outpouching of joint fluid caused by a tear within the meniscus and represents 1-10% of all meniscal pathologies. They are most often seen near the lateral meniscus and highly associated with horizontal cleavage tears.

The etiology of meniscal cysts can be from either a traumatic or degenerative origin. Regardless of its origin the cyst is formed by the influx of synovial fluid through the microscopic or gross tears in the cartilage.

Meniscal cysts present in a manner similar to more traditional meniscal tears. Pain to palpation over the joint line where the cyst is located and notable swelling is common. Periodically, the outpouching, if visually present, may be effected by flexion and extension of the knee.

Usually meniscal cysts do not respond to conservative rehabilitation. Management typically requires an arthroscopic solution. While meniscal cysts can be drained with a needle in a physician’s office, they are prone to recurrence. This is because the tear that led to the cyst has been left untreated. Surgeons will arthroscopically decompress the cyst and then treat the meniscal pathology with an excision or repair. This method of management reduces the likelihood for recurrence.

Another variant of typical meniscal injury is the discoid meniscus as picture above. These are congenital in nature and look a thick pancake sitting on top of the tibial plateau. Again, these tend to be more common on the lateral side. They are easily recognized on MRI because they don’t have the typical “bow-tie” appearance in a sagittal plane view perspective. If symptomatic these usually are treated arthroscopically as well.

Questions you would like addressed in a future issue can be sent to mulliganpt@tx.rr.com
Cubital Tunnel Testing continued -

The study included 52 patients with cubital tunnel syndrome confirmed by nerve conduction studies and 123 asymptomatic subjects. All subjects were exposed to three postures for 5 seconds and positive tests were defined as the presence of symptoms or discomfort in the ulnar nerve distribution. The 3 positions evaluated are pictured below. A - maximal elbow and wrist flexion, B - 90° shoulder abduction, maximal shoulder internal rotation in a plane just anterior to the coronal plane, C - Maximal elbow flexion, forearm supination, and wrist extension in the abducted and internally rotated position of the shoulder.

The specificity for all the tests was nearly perfect (98-100%) indicating these positions are all capable of reproducing the chief complaint of the condition. However, the sensitivity was much better for the position that included all elements of the provocative maneuver - maximal elbow flexion, forearm supination, and wrist extension in the abducted and internally rotated position of the shoulder. The sensitivity of the traditional elbow flexion/wrist extension position could only rule out 25% of the subjects with the condition indicating this is a poor screening tool. Conversely, the combination position had a sensitivity of 87%. The combination position has a calculated positive likelihood ratio of 43 and a negative likelihood ratio of 0.13. These values indicate that the test can shift the probability of the condition by a significant margin if the test produces either a positive or negative result.

The true clinical value of this new provocative position resides in the brevity of the test. According to this study the condition of this ulnar neuropathy can be identified in as little as 5 seconds. Of course this diagnostic maneuver needs to be independently verified in future studies but for now may be a good clinical indicator to add the Tinel's test, digital compression, and scratch collapse tests that have been proposed as indicators of the pathology.
Clinical Orthopedic Residency Education Series: An Advanced Manual Therapy Education Track

Please consider joining us for one of our advanced manual therapy courses this year. The next two programs are scheduled for April and June. In April the topic will be orthopedic management of the cervicothoracic spine and temporomandibular joint. In June we’ll turn our attention to the management of the upper extremity (including the shoulder, elbow, wrist, and hand). These courses are designed to provide a comprehensive and evidence-based review of orthopedic physical therapy based on the APTA’s definition of advanced specialty practice. If you’d like a mechanism by which to prepare for the OCS exam or would simply benefit from advanced coursework with expert colleagues, we hope you’ll consider attending. These courses are taught by the orthopedic faculty at UT Southwestern. All of the material is based on current evidence with over 50% of the on-site course work devoted to lab demonstration and practice. For more information on the 2012 advanced clinical orthopedic education series please visit our website at www.continuing-ed.cc/residencycourse.htm. The courses are designed as a series but attendance at singular courses is allowed on a space available basis.

Featured Home Study Program
Bicipital Tendonitis

A comprehensive review article was recently published in the Journal of Shoulder and Elbow Surgery on disorders of the long head of the biceps. A treatment algorithm included in the article serves as a helpful guideline in the management of the condition. The algorithm begins with the physical exam complimented by appropriate imaging. Acute tears of the subscapularis and/or symptomatic bicep tendon subluxations are immediate surgical indications. Bicipital tendonitis (which is often present with other shoulder pathologies) is initially managed with physical therapy and NSAIDs for 6-12 weeks. Failure to improve would cause consideration for a corticosteroid injection. Only if the injection does not provide relief should surgery be indicated. If the biceps is frayed and torn < 50%, the area is arthroscopically debrided. If the tendon is completely torn then a decision regarding releasing it (tenotomy) or repairing it (tenodesis) must be made. Generally, those under 40 that still have a functional expectation would be repaired while older patients with lower functional demands would simply have the tendon clipped. While releasing the tendon causes notable cosmetic changes in the biceps it usually alleviates the patient’s pain complaint.

If you’d like more information on how to manage other shoulder impingement conditions we have a TPTA approved home study that should shed light on the current concepts regarding the appropriate rehabilitative management of humeral head fractures. This inservice can be read and/or viewed free of charge. A post-test for CEU credit is available at http://www.continuing-ed.cc/homestudy.htm for a reasonable fee.