

Physical Examination of the Shoulder

Joseph J. King, MD, Thomas W. Wright, MD

This article summarizes the overall assessment of the shoulder joint and seeks to help direct clinicians to diagnose shoulder pathology using standard and specific physical examinations. The history and standard examination can prompt the examiner to focus on specific tests to further evaluate the shoulder and limit the differential diagnoses. An appropriate and directed shoulder physical examination allows the clinician to focus on further diagnostic strategies and treatment options for the patient. (*J Hand Surg Am.* 2014;39(10):2103–2112. Copyright © 2014 by the American Society for Surgery of the Hand. All rights reserved.)

Key words Physical examination, shoulder.

THE ANATOMIC AND FUNCTIONAL complexity of the shoulder joint creates challenges for the clinician in diagnosing its pathologic conditions. Physical examination of the shoulder is an important adjunct to the patient's history, which helps focus the decision-making process and guides appropriate treatment. The patient's history allows the physician to direct the physical examination because not every physical examination test is necessary for every patient. Important aspects of the history include the onset and timing of symptoms, inciting event, location of pain, aggravating and alleviating factors, patient's occupation, and prior attempted treatments. After an adequate history is obtained, the clinician should perform a standard shoulder physical examination. Further specific assessment can be performed as necessary, such as testing for impingement syndrome, instability testing, biceps pathology, and scapulothoracic pathology.

Pain referral patterns are important to understand for clinicians treating patients with shoulder pain to reach the definitive diagnosis. Pain from rotator cuff or subacromial pathology is often referred to the lateral

arm.¹ Intra-articular glenohumeral joint pathology is often referred to the posterior shoulder or periscapular region. This can be partially explained by periscapular muscle fatigue or strain resulting from a compensatory increase in scapular motion with glenohumeral joint pathology.¹ Acromioclavicular joint pathology can cause referred pain medially often to the superomedial scapula, base of the neck, or medial clavicle.¹

STANDARD SHOULDER PHYSICAL EXAMINATION

The first step in physical examination of the shoulder is observation. Visualization of the entire shoulder girdle compared with the contralateral side is critical. Physical examination of the shoulder should always be performed with the shirt removed (chest covered in females) to allow adequate visualization. Bony deformity, asymmetry, swelling, and muscle atrophy can be noted during this portion of the examination and can help direct the shoulder physical examination.

Palpation of the entire shoulder girdle is the next step in the physical examination. Specific anatomy that should be palpated for tenderness include the acromioclavicular joint, the entire humeral head (anterior, lateral, and posterior), bicipital groove, anterior acromion, periscapular region, pectoralis major tendon, trapezius muscle, and Erb point (anterior to the trapezius in the posterior triangle of the neck). Specific consistent areas of tenderness are important to discern and narrow the differential diagnosis to help focus the remainder of the shoulder examination.

Glenohumeral range of motion should be evaluated on every patient with shoulder complaints. Evaluation

From the Department of Orthopaedic Surgery and Rehabilitation, University of Florida, Gainesville, FL.

Received for publication March 6, 2014; accepted in revised form April 6, 2014.

No benefits in any form have been received or will be received related directly or indirectly to the subject of this article.

Corresponding author: Thomas W. Wright, MD, Department of Orthopaedic Surgery and Rehabilitation, University of Florida, 3450 Hull Road, Third Floor, Room 3341, Gainesville, FL 32607; e-mail: wrightw@ortho.ufl.edu.

0363-5023/14/3910-0041\$36.00/0
<http://dx.doi.org/10.1016/j.jhssa.2014.04.024>

of both active and passive range of motion of the shoulder will help to rule out certain diagnoses and focus the remainder of the examination. For patients with substantial pain, it is helpful to assess the range of motion in the supine position. Typically, forward elevation as well as external rotation and internal rotation with the arm at the side should be evaluated. This should always be compared with the contralateral side because shoulder range of motion can vary widely in individuals.

Patients without fractures or soft tissue injury after trauma, who have limited range of motion both actively and passively (especially with rotation) compared with the opposite side, have either adhesive capsulitis or glenohumeral arthritis. Adhesive capsulitis typically is associated with excessive pain at the terminal aspects of range of motion whereas glenohumeral arthritis has pain in midrange of motion. Radiographs can help discern between adhesive capsulitis and glenohumeral arthritis. Rotator cuff pathology should be considered in patients with limited active range of motion but normal or near normal passive range of motion.

It is important to evaluate motor testing of the rotator cuff in patients with shoulder pathology. Muscle strength testing of internal (subscapularis) and external rotation (infraspinatus) should be performed with the arm at the side in neutral rotation and the elbow flexed to 90°. Muscle strength should be compared with the contralateral side. Supraspinatus muscle strength can be tested using the Jobe test.² The Jobe supraspinatus test is performed with the shoulder in 90° flexion in the scapular plane (scaption) with the elbow extended. A downward pressure is then applied to the patient's arm against resistance (Fig. 1). This test can be performed on both sides simultaneously to compare the strength of the affected side with the contralateral side. A decrease in strength suggests the presence of a rotator cuff tear or tendonitis. Pain provoked by this test without weakness suggests tendonitis or partial rotator cuff tear. The external rotation lag test can also be used to examine infraspinatus function. This test is performed with the patient's shoulder placed in maximal passive external rotation with the arm at the side and the elbow flexed 90° by the examiner. The examiner then asks the patient to hold the arm in the externally rotated position and removes the passive external rotation force on the patient's arm. If the arm drifts into internal rotation, this is a positive test suggestive of a complete infraspinatus tear.

Rotator cuff weakness can also be caused by peripheral nerve problems. Isolated infraspinatus weakness or atrophy and shoulder girdle pain suggest compression of the suprascapular nerve at the spino-glenoid notch. Supraspinatus and infraspinatus weakness



FIGURE 1: Bilateral simultaneous Jobe supraspinatus test.

or atrophy with shoulder girdle pain may be the result of suprascapular nerve entrapment at the suprascapular notch. Atrophy of the infraspinatus can be present and is visualized as a deep infraspinatus fossa. If nerve entrapments are suspected, magnetic resonance imaging to rule out a space-occupying lesion and/or electrodiagnostic studies may be helpful in confirming the diagnosis.

DIFFERENTIAL INJECTIONS

The role for differential injections should be highlighted as a useful adjunct to the shoulder physical examination. In patients with multiple possible etiologies of pain or those who have diffuse pain without a clear specific etiology, differential staged injections with an anesthetic with or without a corticosteroid can help elucidate the diagnosis.¹ Specific areas that can be injected include the subacromial space, glenohumeral joint, acromioclavicular joint, and biceps tendon sheath. The use of ultrasound can help improve the accuracy of needle placement and effectiveness of these injections. Pain improvement or amelioration of pain after an injection can help the clinician guide treatment.

SUBSCAPULARIS MUSCLE PATHOLOGY

If there is a suspicion of subscapularis muscle pathology with strength or range of motion testing, several tests can help clarify the subscapularis pathology. The lift-off test³ is performed with the patient's arm fully internally rotated with the hand on the back. The patient is then asked to lift the wrist off the back (Fig. 2). If the patient cannot lift the wrist off the back using the shoulder for rotation, the lift-off test is considered positive. The lift-off test best evaluates

Download English Version:

<https://daneshyari.com/en/article/4067070>

Download Persian Version:

<https://daneshyari.com/article/4067070>

[Daneshyari.com](https://daneshyari.com)