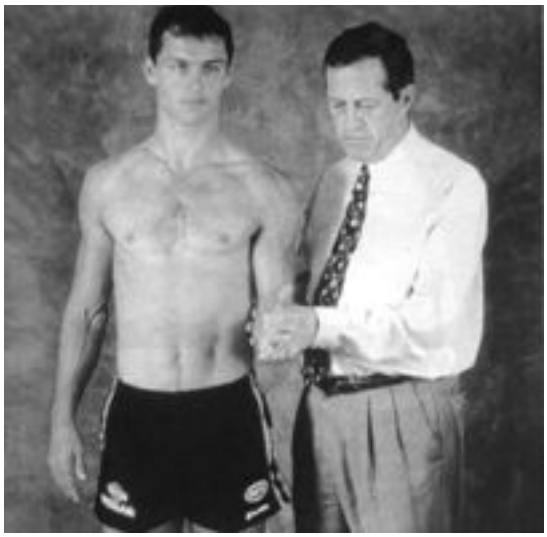
Chapter 14

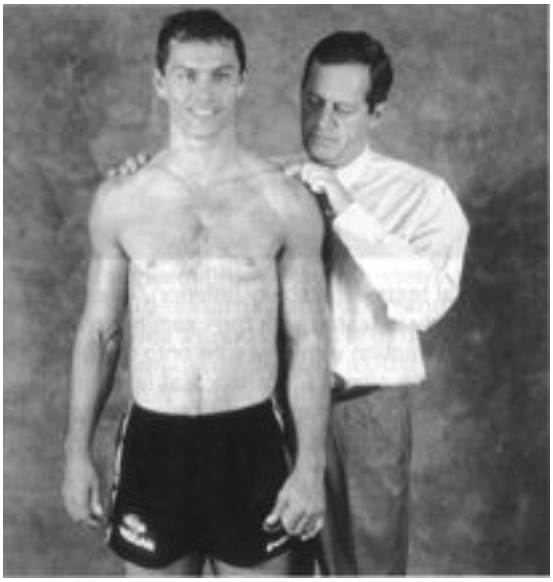
Shoulder Pain

with W. Ben Kibler

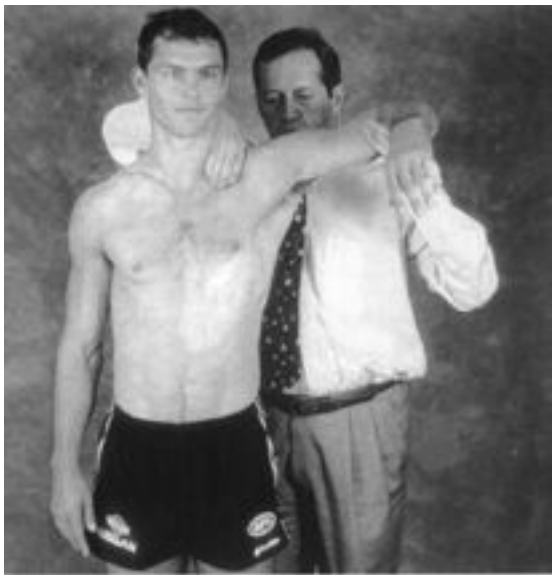
6. Special tests
   (a) impingement - Neer test (Fig. 14.2o)
   (b) impingement - Hawkins/Kennedy test (Fig. 14.2p)
   (c) instability - load and shift test (Fig 14.2q)
   (d) instability - apprehension (Fig. 14.2r)
   (e) instability - relocation test (Fig 14.2s)
   (f) anterior/posterior drawer (Fig 14.2t)
   (g) inferior - sulcus sign (Fig. 14.2u)
   (h) SLAP lesion - anterior slide (Fig 14.2v)
   (i) SLAP lesion - O'Brien test (Fig 14.2w)
   (j) SLAP lesion - crank test (Fig 14.2x)
   (k) neural tension - upper limb tension test (Chapter 6)
   (l) cervical spine (Chapter 12)



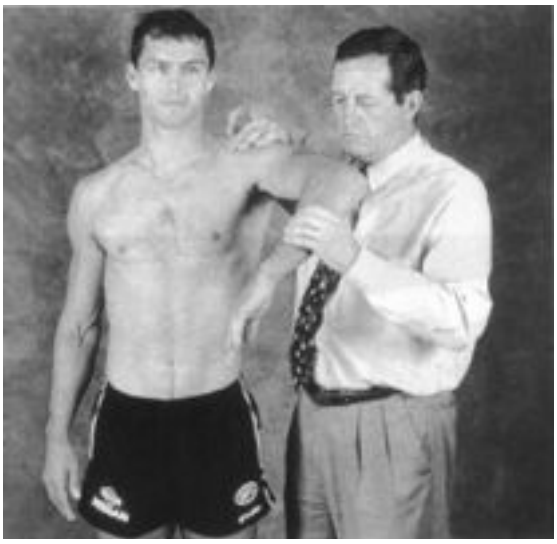
(m) Resisted movements - Yergason's test. Elbow flexed to 90 degrees and the forearm pronated. Examiner holds the patient's wrist to resist active supination. Pain in the bicipital groove is a positive test for biceps injury



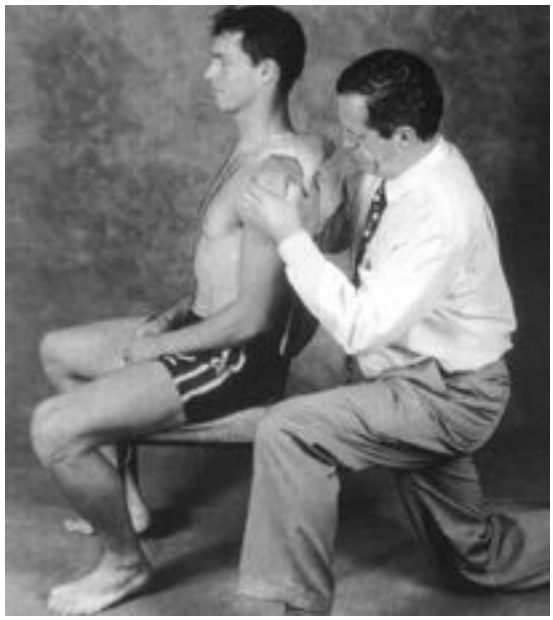
(n) Palpation. AC joint



(o) Special test - Impingement (Neer test). Forced elevation of the humerus while holding the other hand on the top of the shoulder girdle.



(p) Special test - Impingement (Hawkins/Kennedy test). Shoulder is placed in 90¡ of forward flexion and then forcibly internally rotating the shoulder.

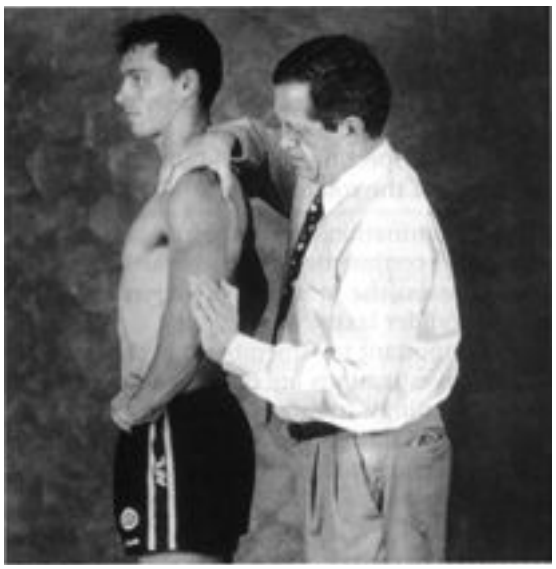


(q) Special test - Instability (Load and shift test). The right humeral head is grasped with the right hand, while the left hand stabilizes the scapuls. The right hand then loads the joint to ensure concentric reduction, and then applies anterior and posterior shearing forces. The direction and translation can be graded using a scale of 0 to 3.

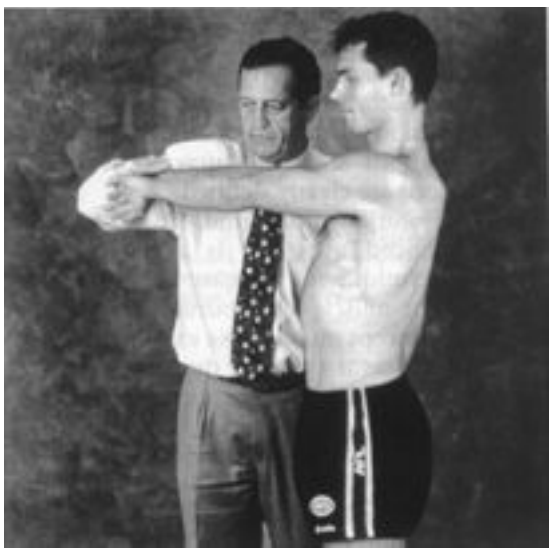
(r) Special tests - Instability (Apprehension test). This is performed with the humerus in 90¡ of abduction, 90¡ elbow flexion and external rotation of the shoulder. The examiner exerts gentle pressure into progressive external rotation. A positive test is when the patient feels a sensation of impending dislocation.

(s) Special tests - Instability (Apprehension and Relocation test). With the patient supine the arm is taken into abduction and external rotation. The test can be augmented by pushing the humeral head anteriorly from behind. The relocation test is performed by pushing posteriorly on the upper part of the humerus. The relocation test is positive if the apprehension or pain is relieved.

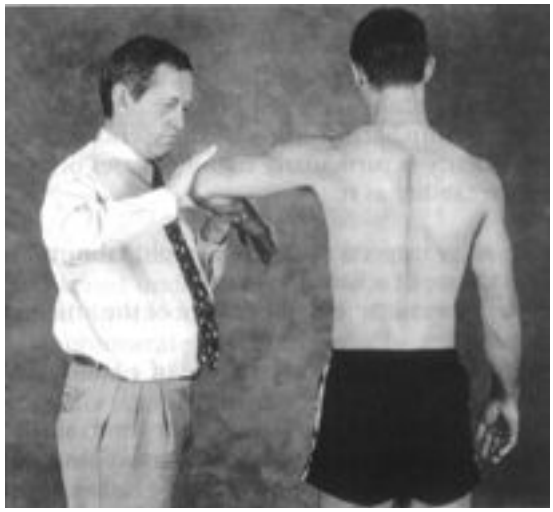
(t) Special test - Instability (inferior). Inferior instability is tested with the examiner placing inferior traction with pressure onto the shoulder joint at the elbow. A positive test is when the humeral head in translated inferiorly such that a visible sulcus appears between the acromion and the humeral head (the 'sulcus sign').



(u) Special test - SLAP lesion(Anterior slide). Patient stands with hands on hips. One of the examiner's hands is placed over the shouler and the other hand behind the elbow. A force is then applied anteriorly and superiorly, and the patient is asked to push back against the force. The test is positive if pain is localised to the anterosuperior aspect of the shoulder, if there is a pop or a click in that region, or if the maneuver reproduces that patient's symptoms.



(v) Special test - SLAP lesion (O'Brien test). The patient's shoulder is held in 90 degrees of forward flexion, 30 to 45 degrees of horizontal adduction and maximal internal rotation. The examiner grabs the patient's wrist and resists the patient's attempt to horizontally adduct and forward flex the shoulder.



(w) Special test - SLAP lesion (Crank test). The patient's shoulder is abducted 90 degrees and slowly internally rotated while a gentle axial load is applied through the glenohumeral joint. The test is considered positive if the patient reports pain, catching, or grinding in the shoulder.

Investigations

Plain X-rays are important in the diagnosis of shoulder abnormalities. Routine views (AP with internal and external rotation and axillary lateral) provide a good overview of the region. In cases of trauma, an adequate axillary view may not be possible and it is mandatory to obtain a true lateral film to exclude dislocation.

Special views have been described to evaluate instability and impingement. Supraspinatus outlet views and down-tilted acromial films are obtained to evaluate impingement. In cases of instability, special views such as the West Point view or the Stryker notch view are used to better detect Bankart and Hill Sachs' lesions.

In the past, double contrast arthrography was used extensively to evaluate instability and rotator cuff damage, but only complete cuff tears were reliably detected by this method. Today, far more detailed anatomical information is obtained when arthrography is combined with CT of the shoulder (CT arthrogram) or MR (see below). This examination gives excellent detail of capsular attachments and of the labrum. Small avulsion fractures of the glenoid rim (Bankart lesion) and the humeral head (Hill Sachs' lesion) are clearly defined.

High resolution ultrasound, in the hands of an experienced operator, is a reliable non-invasive technique for imaging the rotator cuff and adjacent muscles, the bursae and the long head of the biceps muscle. The examination may be performed as a static or dynamic investigation. Tendon swelling, thickening of the bursa or abnormal fluid collection may be detected as may a partial or complete rotator cuff tear. The size of the defect and the thickness of the intact tissue can be measured. A dynamic examination performed while the patient is actively abducting the shoulder may confirm the presence of impingement.

MRI allows multiplanar, non-invasive examination of the shoulder and is used to detect a rotator cuff tear. Bone detail is not defined as well as with CT and examination with shoulder movement is not possible. MR is not well-suited to evaluate labral tears or instability unless contrast is used.

Arthroscopy of the shoulder can be either a diagnostic procedure, a therapeutic procedure or both. Shoulder arthroscopy permits inspection of the glenohumeral joint and the subacromial space in turn. Arthroscopy of the glenohumeral joint cavity is particularly useful in cases of clinical instability as it:

- enables inspection of the glenoid labrum for evidence of a Bankart lesion
- permits assessment of the state of the articular cartilage
- will demonstrate the presence of a Hill Sachs' lesion
- allows assessment of the rotator interval (the gap between the supraspinatus and subscapularis muscles), which tends to be increased in recurrent instability
- can be used to observe the movement of the humeral head from inside the joint while the shoulder is being placed in the dislocation position by the surgeon's assistant. This allows inspection of catching of the labrum during subluxation of the shoulder, which is particularly useful in cases of impingement due to instability
- permits inspection of the under surface of the rotator cuff tendons, the biceps tendon and the subacromial bursa
- enables inspection and probing of the upper surface of the rotator cuff

The examination under anesthesia (EUA) performed in conjunction with the arthroscopy is used to

assess the presence, direction and severity of shoulder laxity.

It is important to remember that these sophisticated investigations are only an adjunct to the clinical findings. In most cases of shoulder pain, the clinical findings provide sufficient information to diagnose the cause of the shoulder pain.