

## Chapter 2

# The Arm

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### Muscular Strains in the Shoulder Region

The muscles in the shoulder region which are commonly injured are the deltoid, the biceps, the medial rotators, and very rarely the lateral rotators.

Muscular lesions are recognizable by the fact that (1) the muscle is painful when actively moved, (2) when resistance is offered to it during movement, and (3) when the muscle is passively stretched.

#### *The Deltoid*

Gross rupture of the muscle is unusual, but rupture of a group of fibers is usually seen.

When the muscle is strained, active abduction is very painful and diminished, though passive abduction can be carried out.

When the patient is asked to hold the abducted arm in position, acute pain is felt and the arm falls to one side.

#### *The Supraspinatus*

Injury to this muscle is very important.

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## ***The Biceps***

The main function of the biceps is to supinate the forearm, and flex the arm at the shoulder joint, and flexion at the elbow joint is a secondary effect.

Bicipital lesions rarely take the form of complete division of the muscle bellies and there is swelling or a swelling when the muscle contracts.

## ***Rupture of the Long Head of Biceps***

This is a rare, but very occasional lesion.

In most cases, there is a history of injury, which may be in the form of lifting heavy weights or violent extension of the forearm while flexion is being carried out, while in a few cases, it may also be spontaneous.

The clinical features are characteristic, when the muscle belly shows a bulbous enlargement in its lateral half, when compared to the opposite side.

## **Treatment**

Treatment is usually by operation and the results are satisfactory.

The rupture is exposed through an anterolateral incision and the cut ends identified, with the cut ends being sutured end to end with the elbow held flexed.

Tears of the rotator cuff can be identified by extending the incision proximally, and this is repaired by an end to end suture.

At times, there is an avulsion of the distal end of the biceps from the coracoid process, and when length permits is fixed to the bony insertion.

Recurrent dislocation of the long head of biceps may occur following a tear of the bicipital fascia.

## ***The Medial Rotators***

The muscles responsible for this movement is the pectoralis major and the subscapularis.

In strains of these muscles, pain is experienced on active medial rotation, and the movement is usually restricted.

## ***The Lateral Rotators***

Injury or strains of these muscles is very rare and may usually result from traction on the muscles. Lateral rotation is usually done by the teres minor and the infraspinatus.

## **Bicipital Tendinitis**

The long tendon of the biceps is very intimate with the articular capsule of the shoulder joint and hence is readily affected in inflammatory processes affecting the shoulder joint. It also has a synovial sheath contained within the transverse ligament and this in turn can undergo an inflammatory change.

The main symptoms are pain in the shoulder joint which is located over the bicipital groove and can be aggravated by forced resistance to flexion of the elbow joint and supination of the forearm.

The pathologic process may go on till the tendon becomes atrophic and ruptures.

Conservative treatment is in the form of short wave diathermy, injection of hydrocortisone and rest to the arm.

It had a much better prognosis than chronic inflammations involving the shoulder joint itself.

## ***Dislocation of the Biceps Brachii***

This condition has been recognized for a long time. The tendon is usually anchored in place by the attachment of the articular capsule just proximal to the lesser tuberosity, and the medial ridge of the bicipital sulcus which is often very deep. This condition may result by a violent muscular action that may dislocate the tendon, which results in the tendon slipping over the lesser tuberosity decreasing the tension of the muscle giving rise to the classical bicipital syndrome.

The symptoms are usually acute resembling a ruptured biceps tendon, with the pain in the region of the bicipital groove, which is increased on external rotation, when the muscle belly is flabby and lower than in the normal position.

The diagnosis is not always easy, as the patient can produce this condition by bringing the extended arm to overhead extension and lateral rotation holding a 5-lb weight in each hand, when the examiner puts a finger on the tendon and may feel or hear the snap.



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