REVIEW OF LITERATURE

ANATOMY OF THE SHOULDER JOINT

The term "shoulder joint" is often used to denote the scapulo-humeral joint alone, but from the point of view of the surgical anatomy of the shoulder region, the scapulo-humeral joint is only one component of a complex system of articulations which normally function synchronously to produce smooth, rhythmic and coordinated movements of the upper limb. The shoulder joint is effective at five different places:

i- The gleno-humeral joint.

ii- The acromio-clavicular joint.

iii- The subacromial joint.

iv- The sterno-clavicular joint.

v- The movement of the scapula across thoracic wall (Wilson,1982).

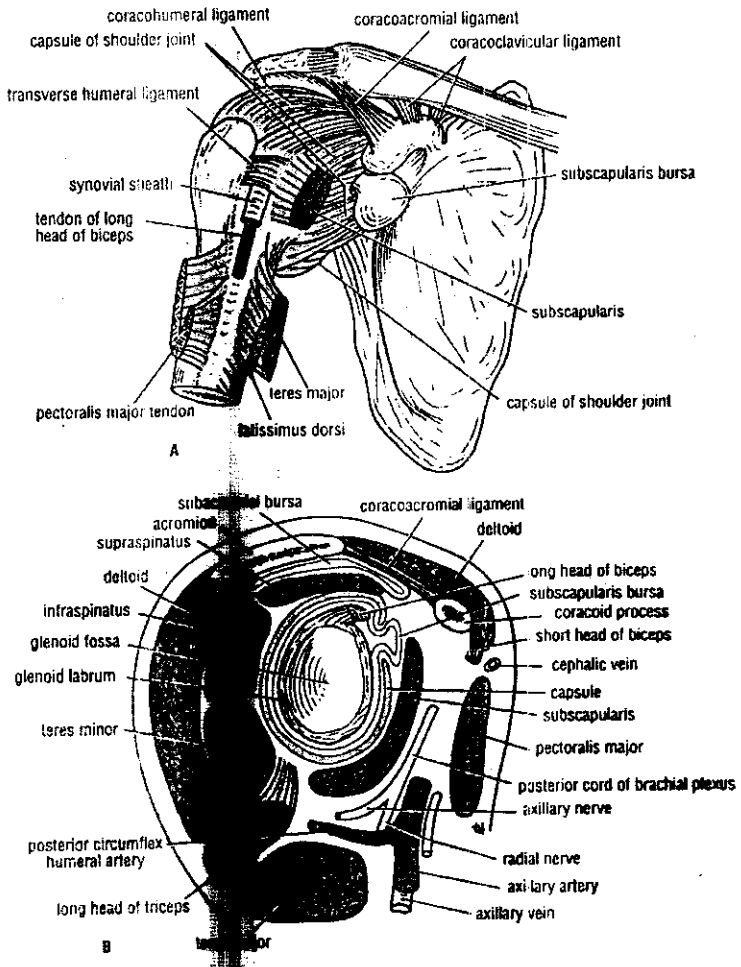

Fig. 1 Shoulder joint and its articulations. A. Anterior view. B. Sagittal section. Richard, 2000

I- Gleno-humeral joint :

Gleno-humeral joint is a synovial joint of the multi-axial ball-and-socket variety. There is a 4 to 1 disproportion between the large round head of the humerus and the small shallow glenoid fossa ***(Last, 1997).***

Sarrafian (1983) stated that the humeral articular surface represents approximately one-third of an irregular sphere. The average vertical dimension of the surface is 48mm with a 25mm radius of curvature. The average transverse dimension is 45mm with a 22mm radius of curvature. The oval concave surface has an average vertical dimension of 35mm and a transverse diameter of only 25 mm.

The stability of this joint depends on the support given by the muscles which surround it and not on its bony conformation or the presence of any strong ligaments ***(Sarrfian, 1983).***

The Capsule :

Joint has a loose and lax capsule extending to the anatomical neck of the humerus strengthened by dense fibrocartilage called glenoid labrum to deepen the glenoid fossa posteriorly, and by tendons and muscle (e.g. Subscapularis) anteriorly, and it communicates with the sub scapular bursa ***(Warwick and Williams, 1992).***

The Joint has multiaxial movement i : e moves on transverse, antero-posterior and longitudinal planes. This free movement is on expense of stability because of the big head of the humerus gliding on shallow-socket, and the lax capsule and ligaments, which is known as "in congruous" joint.

Factors contributing GH stability and instability are shown in Table (1) and (2). Hence the major stabilizer of the shoulder joint is the so called "Capsular mechanism" this soft tissue complex includes the glenoid labrum synovium and capsule of the joint, the three glenohumeral ligament (called the static stabilizers) and the anterior (subscapularis) and posterior (infraspinatus and teres minor) rotator cuff tendinous and muscles (called dynamic stabilizers) ***(Moore, 1980)*** .