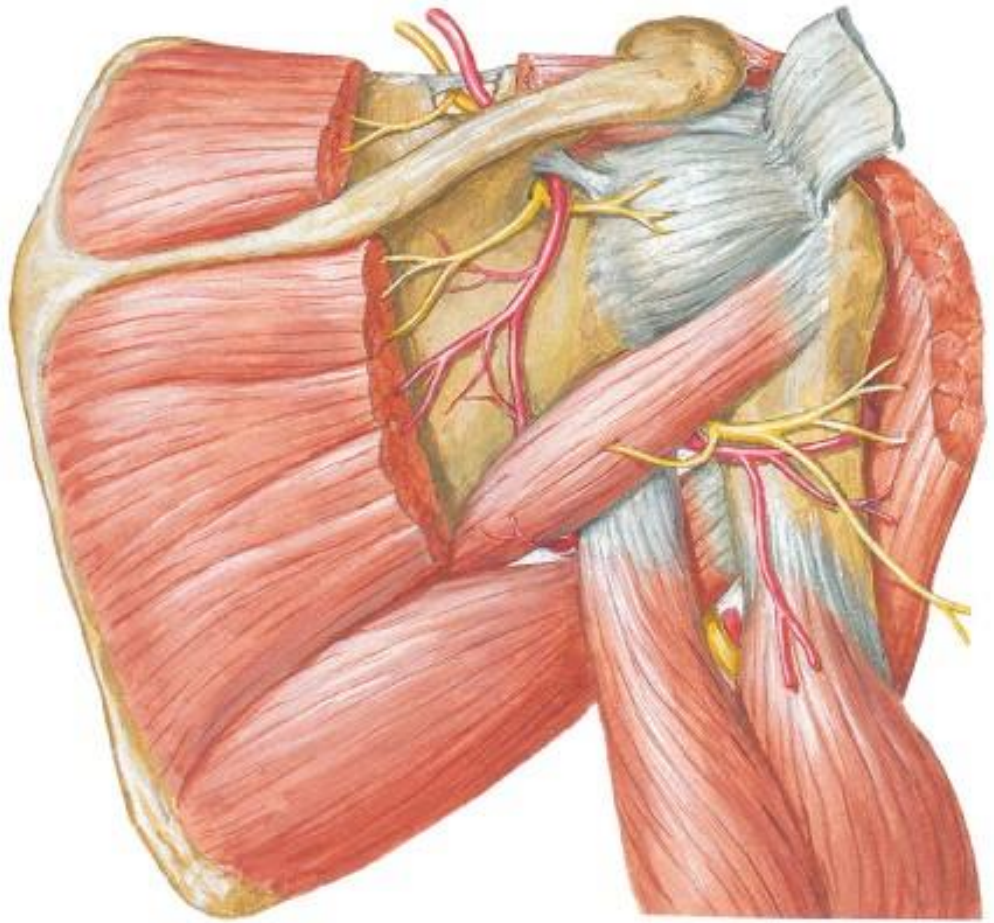
AXILLARY N. , AXILLARY ART. SHOULDER JOINT



BY

DR ABULMAATY MOHAMED

ASSISTANT PROFESSOR

ANATOMY & EMBRYOLOGY

MUTAH UNIVERSITY

AXILLARY NERVE

Origin from post. cord of brachial plexus

Root value C5, 6 nerves

Course & relations

-leaves axilla with post. circumflex humeral vessels through quadrangular space

-turns behind the surgical neck of humerus

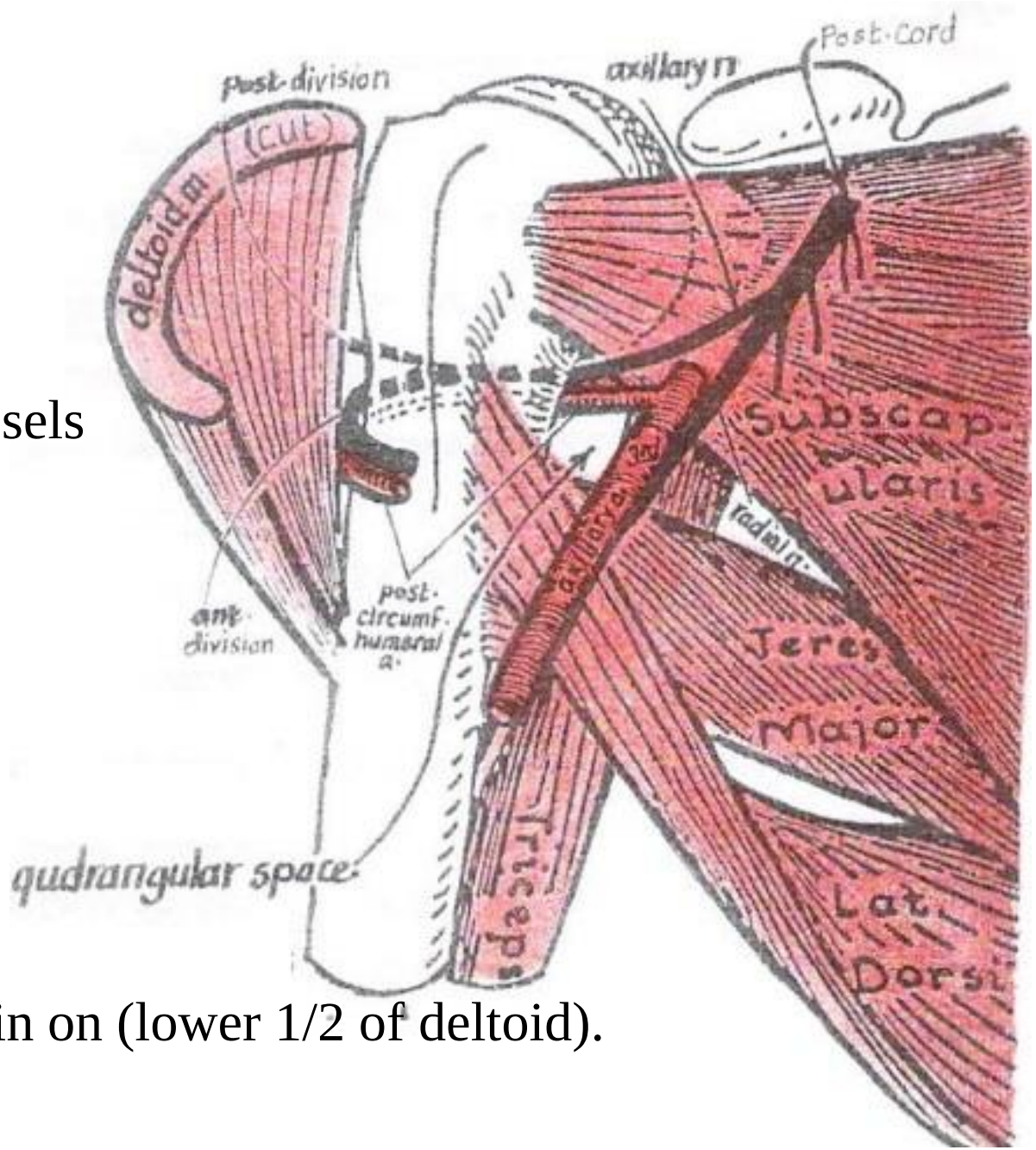
- Ends deep to deltoid

Branches

1-muscular: deltoid & teres minor.

2-articular: shoulder joint

3-cutaneous: upper lateral cut. n. of arm:- To skin on (lower 1/2 of deltoid).



AXILLARY NERVE

Injury

Cause fracture surgical neck of humerus.

Or dislocation of the shoulder.

Effect

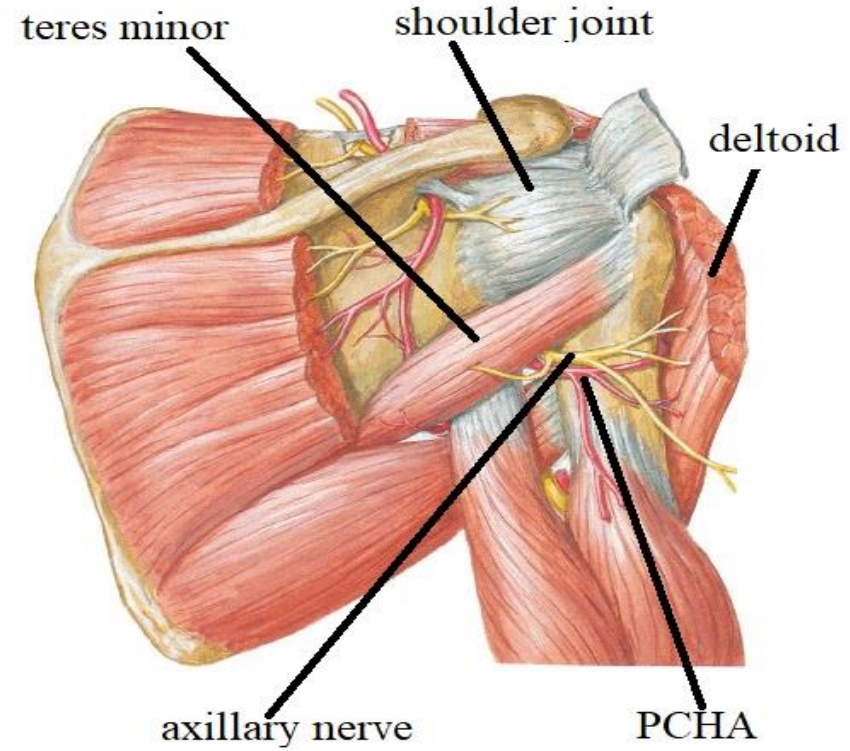
A-paralysis of:

1-deltoid: - leading to loss of abduction from 15 – 90

flattening of shoulder

2-teres minor

B-loss of sensation on (lower 1/2 of deltoid).



AXILLARY ARTERY

Beginning at outer border of 1st rib
as continuation of subclavian artery

Course

-Enters the axilla through its apex

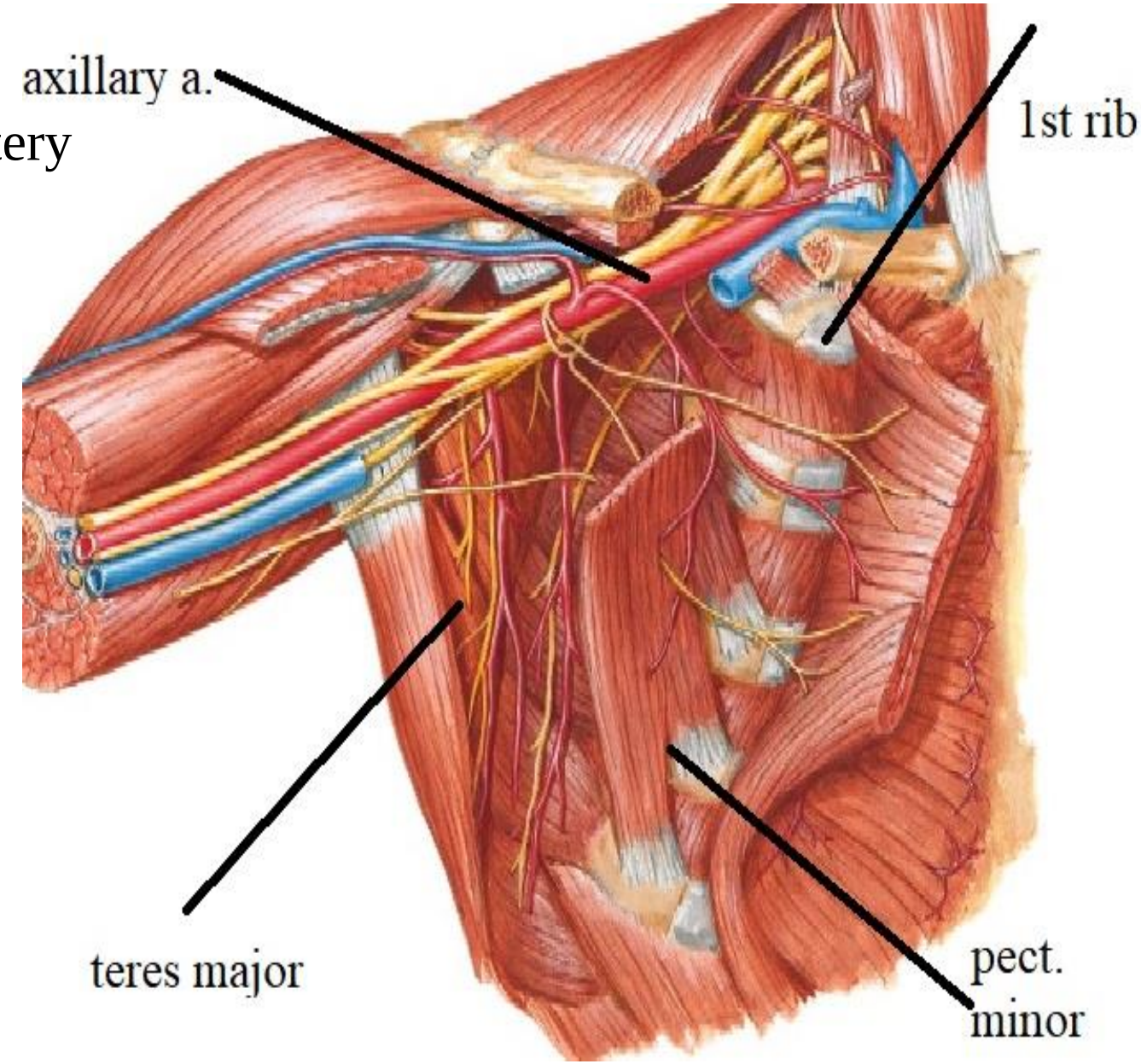
-Crossed by pectoralis minor
which divides it into 3 parts.

1st part: above pectoralis minor

2nd ,, : deep to ,, ,,

3rd ,, : below ,, ,,

End: - at lower border of teres major
to become brachial artery



AXILLARY ARTERY

Relation to the brachial plexus

1st part

posteriorly:- medial cord of the brachial plexus

laterally:- lateral & posterior cords

2nd part

posteriorly:- posterior cord of the brachial plexus

laterally:- lateral cord

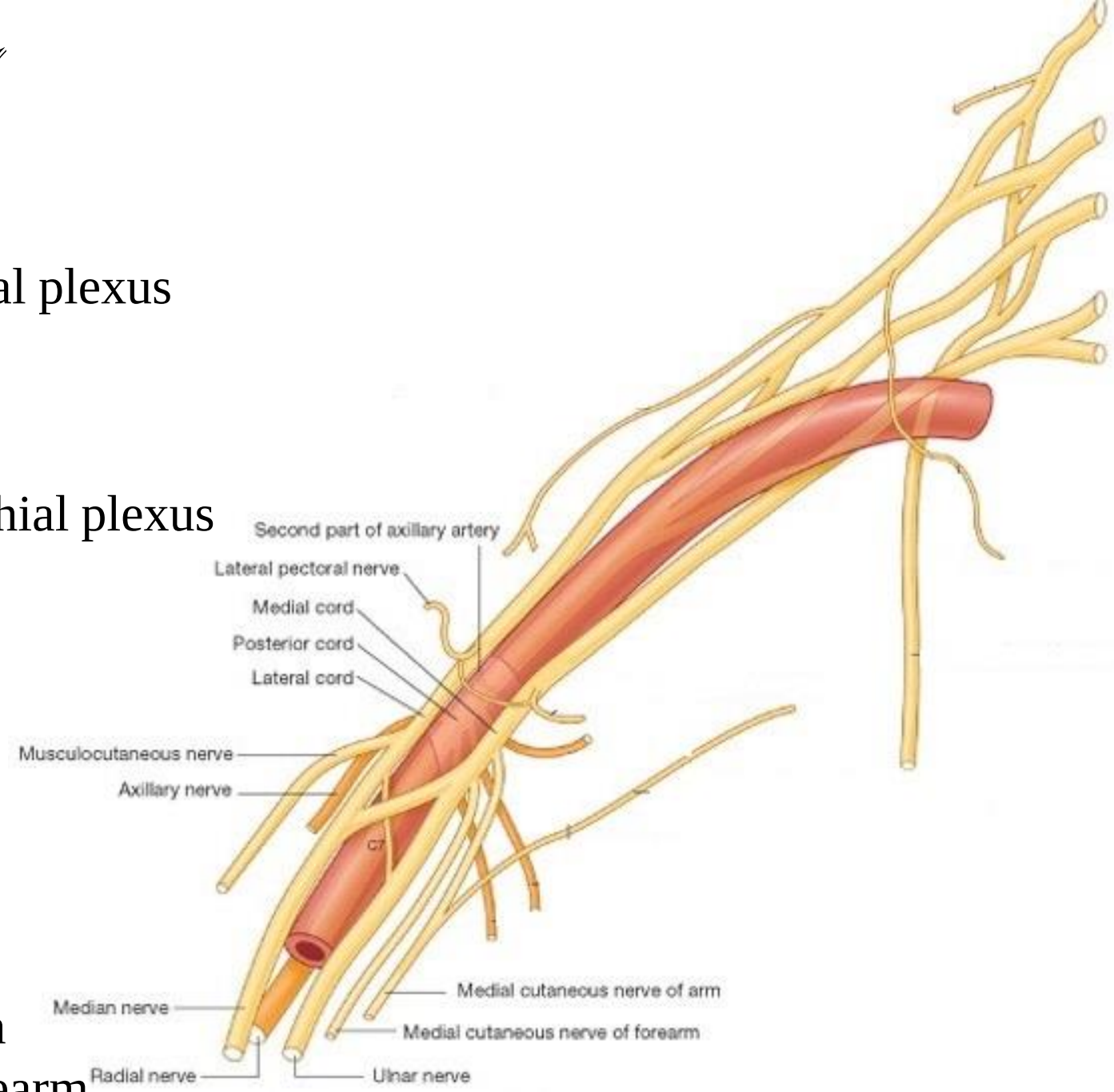
medially:- medial cord

3rd part

posteriorly:- radial & axillary nerve

laterally:- musculocutaneous nerve & median nerve

medially:- ulnar nerve ,
medial cutaneous nerve of arm
medial cutaneous nerve of forearm



AXILLARY ARTERY

Branches

1st part : 1-superior thoracic art.:-

supply the medial wall of axilla

2nd part: 2-acromiothoracic:-

pierce clavipectoral fascia

then give 4 branches: a, p, c, d

acromial pectoral clavicular deltoid

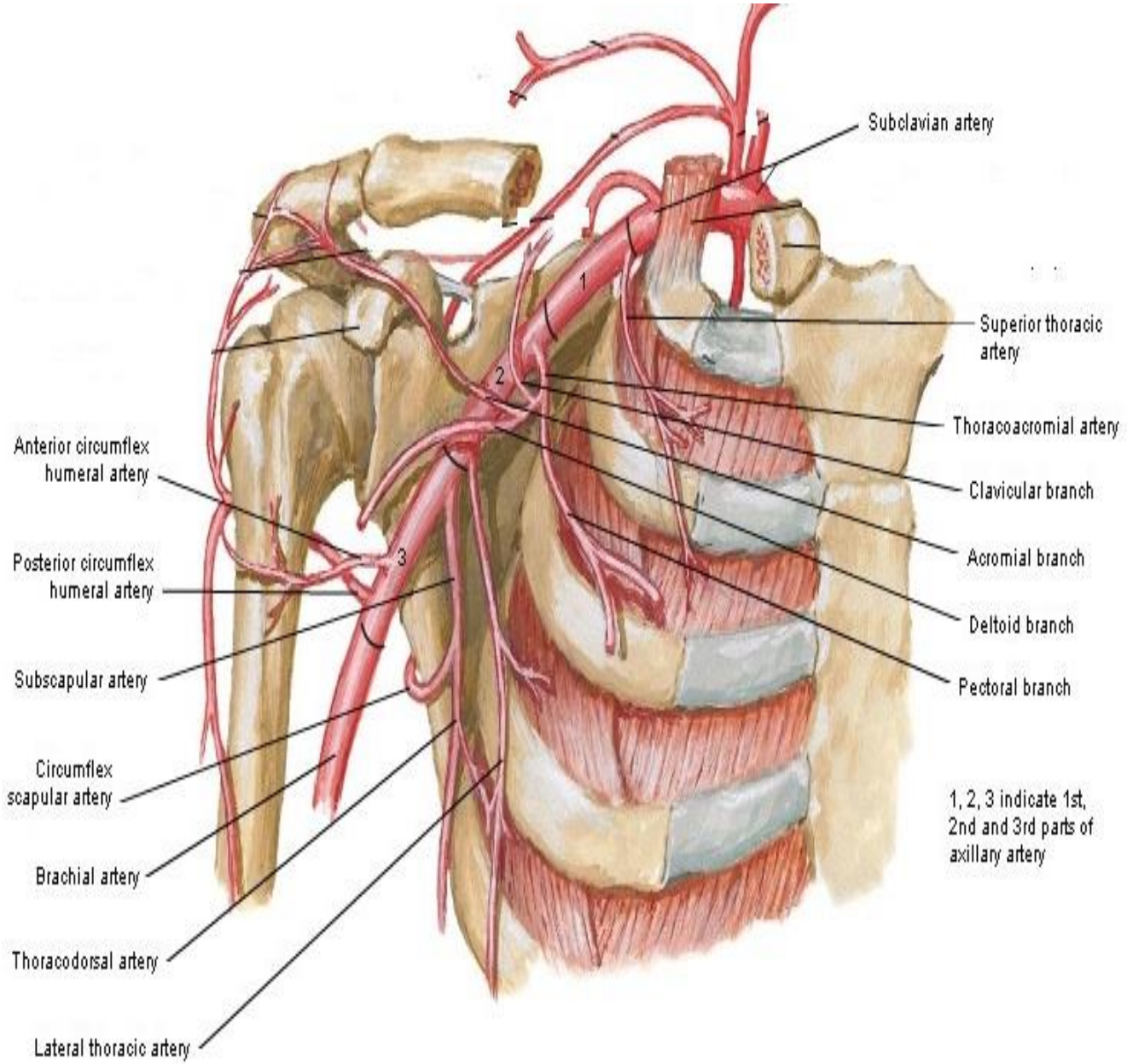
3-lateral thoracic:

3rd part: 4-ant. circumflex humeral art.

5-post. circumflex humeral art.

6- subscapular art.: largest branch

It gives circumflex scapular artery then the art. continues as thoracodorsal art. (which accompany the thoracodorsal nerve)



SHOULDER JOINT

Type : Synovial

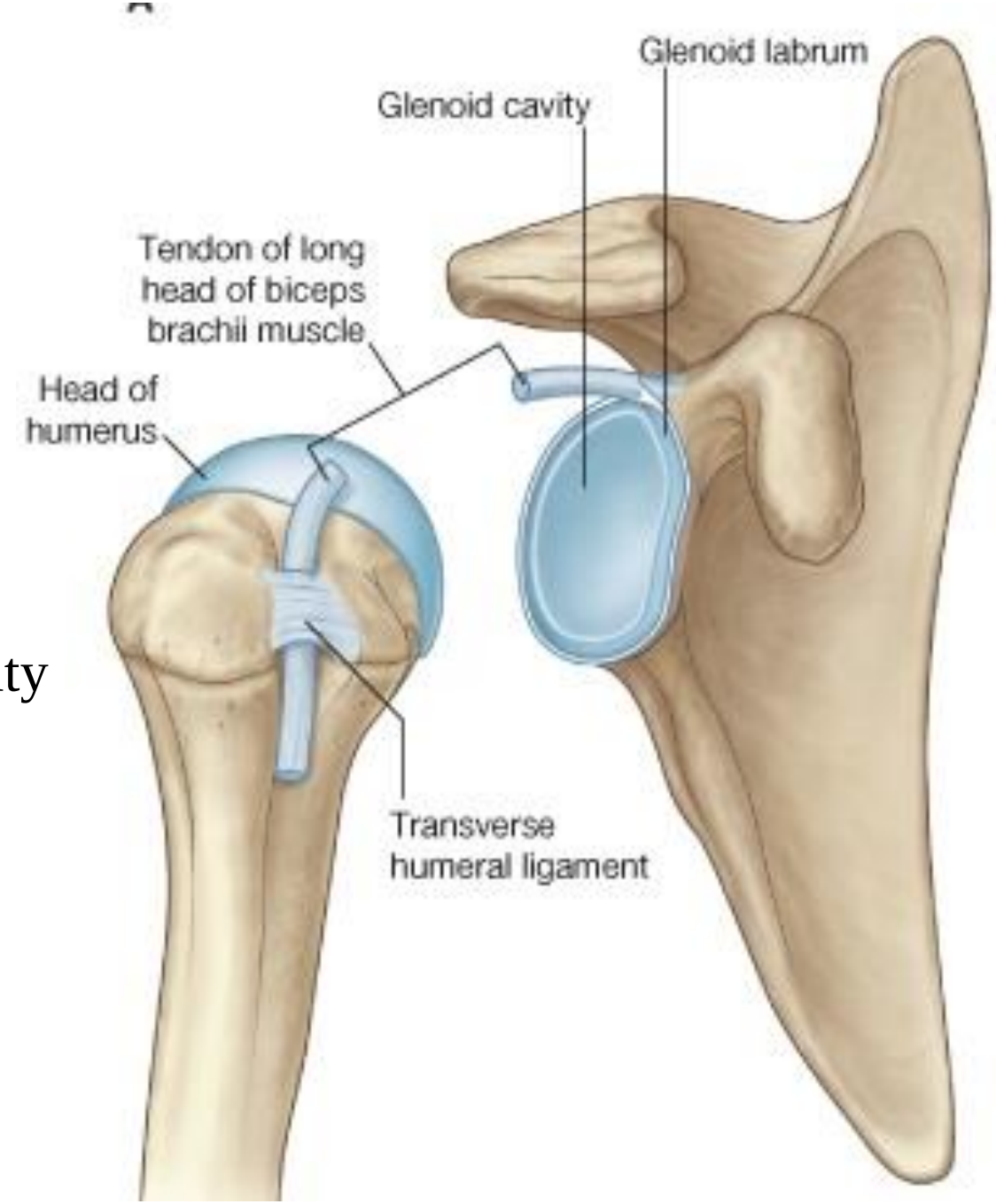
Variety : ball & socket

Articular surface:

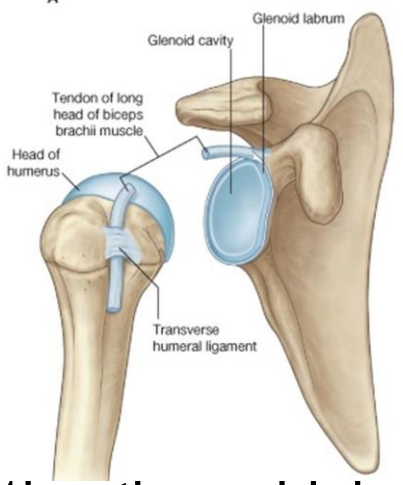
1-Head of humerus

2-Glenoid cavity of scapula

The glenoid cavity is deepened by a lip of fibro-cartilaginous (labrum glenoidal) that is attached to the margins of the glenoid cavity



SHOULDER JOINT



Capsule:

-lax

-Attachment

Medially

to the margins of the glenoid cavity outside the glenoid labrum.

Supraglenoid tubercle is inside the capsule

while infraglenoid tubercle is outside it

Laterally

to the anatomical neck of the humerus

except inferiorly it is extended till the surgical neck

Synovial membrane

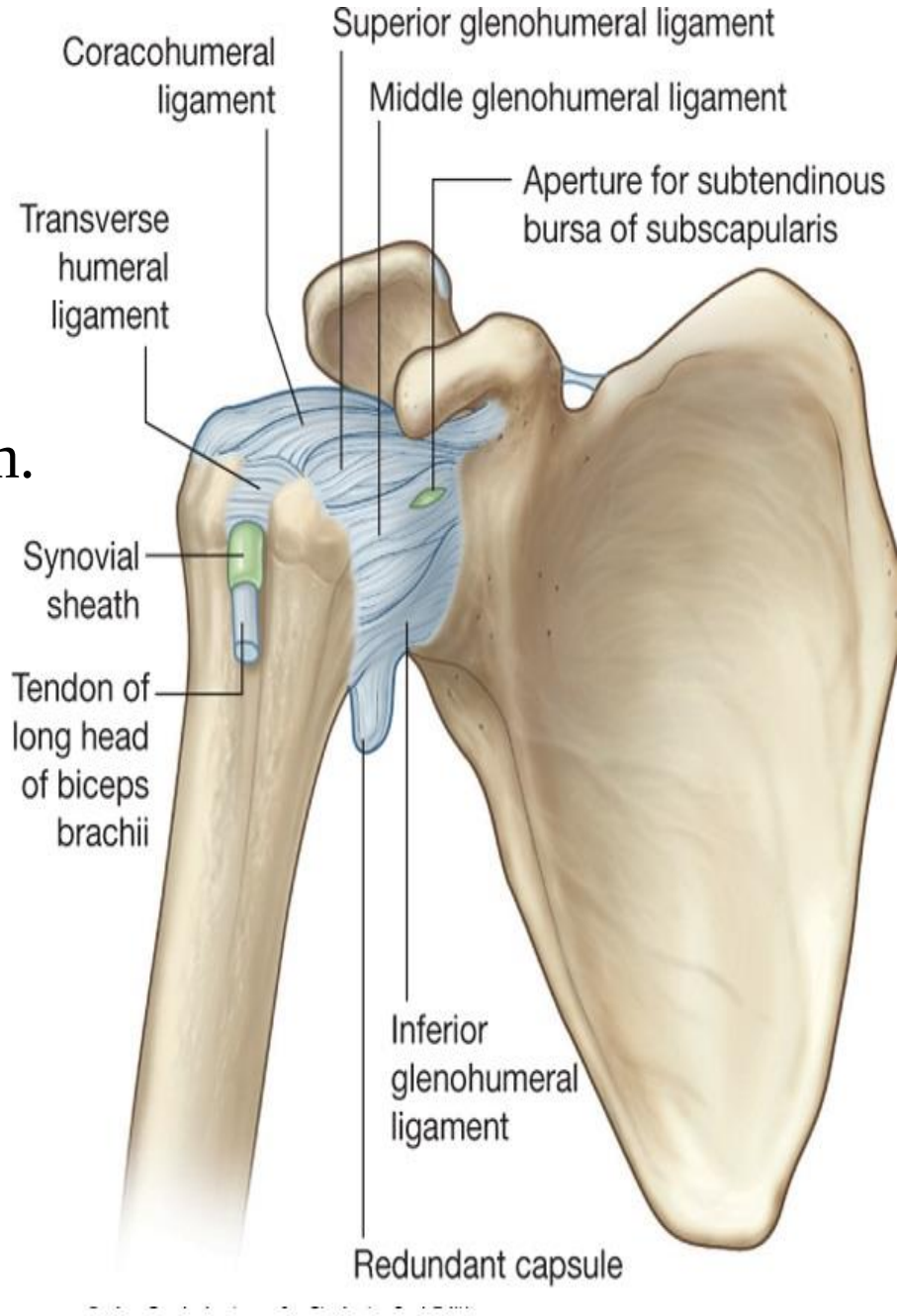
-It lines the capsule

-It forms synovial sheath around the long head of the biceps

Openings of the capsule

Anterior opening connecting with subscapularis bursa

lateral opening for passage of the long head of biceps



SHOULDER JOINT

Ligaments of the shoulder joints

1- Coraco-humeral ligament:

form root of coracoid process to greater tubercle

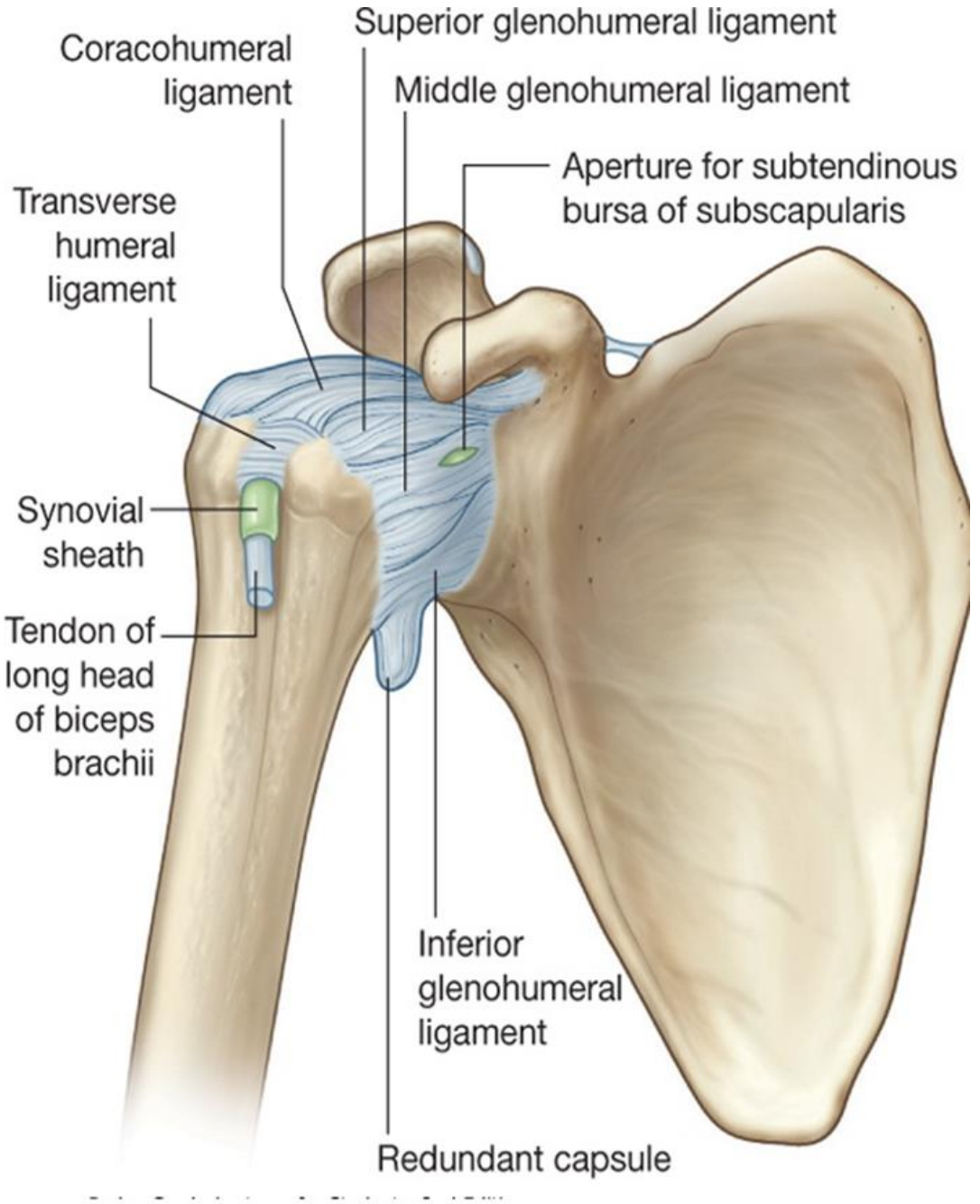
2- Transverse humeral ligament:

attached to margins of upper part of bicipital groove converting it into tunnel for Long head of biceps

3- 3 glenohumeral ligaments :

False ligaments (Thickenings of the Capsule)

superior – middle – inferior



SHOULDER JOINT

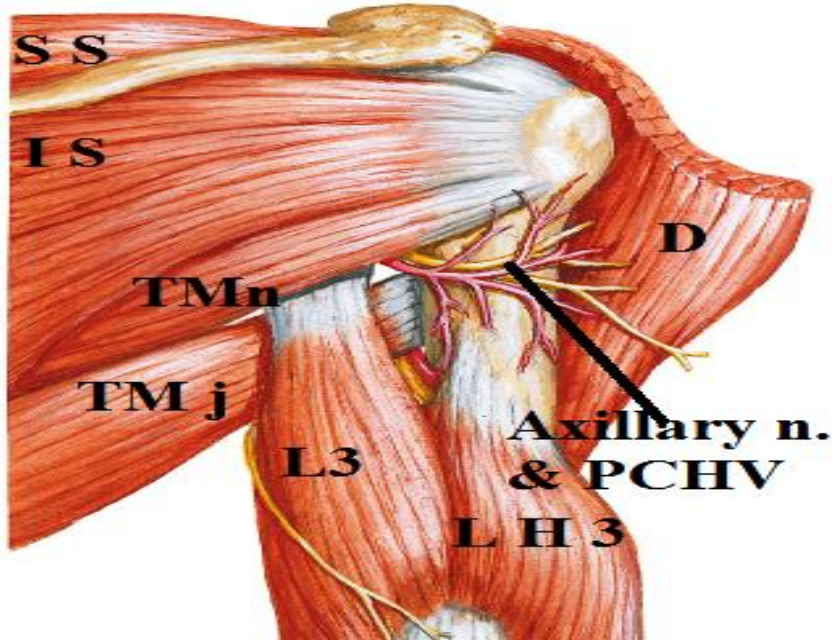
Relations

Anteriorly: subscapularis

Superiorly: supraspinatus

Posteriorly: infraspinatus, and teres minor

Inferiorly: Long head of triceps, axillary nerve and posterior circumflex humeral vessels.



Bursae related to the joint

Subscapularis bursa

It communicates with the joint cavity

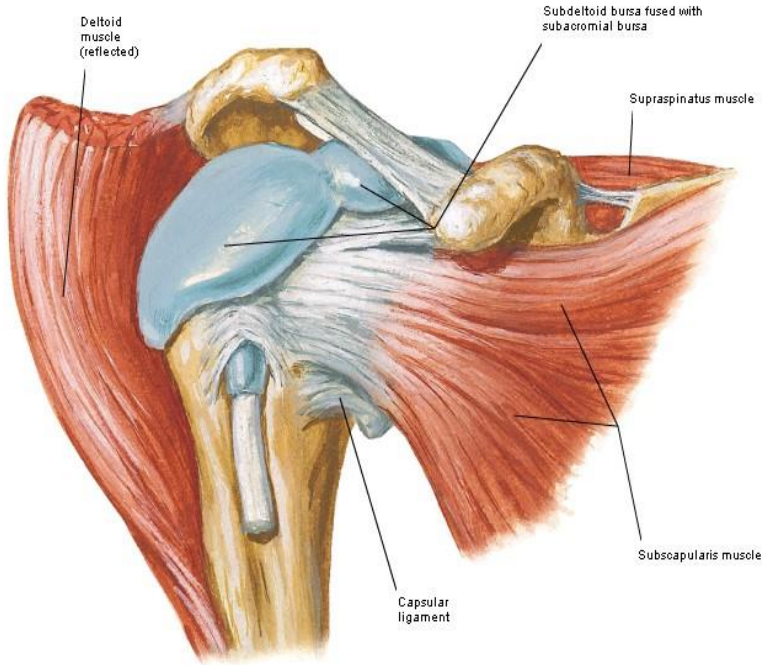
Subacromial bursa

( ) the coracoacromial arch above, and supraspinatus tendon and capsule below

It is the largest synovial bursa in the body

It does not communicate with the joint cavity

Infraspinatus bursa



SHOULDER JOINT

Stability of shoulder joint: -

The shoulder joint is an unstable joint for the following factors

1- shallow glenoid cavity in relation to the head of humerus
2- lax capsule
3- week ligaments

Factors trying to give some stability

1- Labrum glenoidal increases the depth of the cavity

2- Rotator cuff muscles adherent to the capsule
3- Long head of biceps passes above the head of humerus so it prevents its upward dislocation
4- Coracoacromial arch prevents the upward dislocation of the head of humerus

N.B.:-the inferior aspect not supported by muscles. So dislocation of the shoulder joint is almost inferiorly

SHOULDER JOINT

MOVEMENTS

Medial rotation by the 3 muscles inserted into bicipital groove ??

Lateral rotation: by infraspinatus and teres minor.

Adduction: by all of the above

Abduction:

a- From 0 to 15 by supraspinatus muscle
b- From 15 to 90 by the middle fibers of the deltoid
c- More than 90 by the lower 5 digitations of serratus anterior and trapezius muscle.

Flexion:- Anterior fibers of the deltoid and Pectoralis major

Extension:- Posterior fibers of the deltoid, teres major and latissimus dorsi.

THANQ