...MAM AROOBA SAJJAD........***

Midterm Lab assigemnment.

- **Fall 2020**
- **Submitted by..... AROOBA SAJJAD.**
- **ID Number :17300**
- **Topic : Write bfrief note on the joints of upperlimbs.**
- **Deperatment ..Bs anesthesia**
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1...

THE SHOULDER JOINT.

- *The shoulder joint (glenohumeral joint is ball and socket joint between*

*the **scapula** and the **humerus.**it is the major joint connecting the upper limb to the trunk.*

- *It is one of the most mobile joint in the human body ,at the cost of joint stabillty .in this artical .we shall look at the anatomy of the shoulder joint and its important clinical correlation.*
  - ***STRUCTURES OF THE SHOULDER JOINT.***
  - ***Articulating surfaces..***
  - *The shoulder joint is formed by the articulation of the **head** of the humerys with the **glenoid cavity** (or fossa) of the scapula .this gives rise to the alternate*

name for the shoulder joint -the glenohumeral joint .

- *Like most synovial joint the articulating surface are coverd with **hyaline cartillage .**the head of the humerus is much larger than the glenoid fossa,fossa give the joint a wide range of the movement at the cost of inherent instabiltiy.to reduce the disproportion in surface,the glenoid fossa is deepend by a fibrocartilage rim called the **glenoid labrum***

Joint capsule and bursae..

- *tHe **joint capsule** is a fabrous sheath which enclose the struture of the joint .*
- *It extends from the **anatomical neck** of the humrus to the border or 'rim' of the glenoid fossa . The joint capsule is lax, permitting greater mobility (particularly abduction.)*
- *The **synovial membrane** line the innersurface of the joint capsule and produce synovial fluid to ruduce friction between the articular surfaces.*
- *tO reduce friction in the shoulder joint several **synovail bursae** are persent .a bursda is*

a synovial fluid filled sac which acts as a cushion between tendonds and the other joint structure .

- *The bursar that are important clinically are*
- ***Subacromial -****located deepto the deltiod and acromiin,and superficial to the supraspinatus tendon and joint capsule the sub acromial bursea reduces.friction beneth the deltoid and, promoting free motion of the rotator cuff tendon ,subaromial bursitis(i.e inflammation of the bursa)can*

be A cause of the shoulder pain.

- ***Subcapular -****located between the subscspularis rendond and the sacpula.it the reduces wear and tear on the tendon during movement at the shoulder joint.*
- ***The****re are other minnor bursae present between the tendons of the muscles of the around*

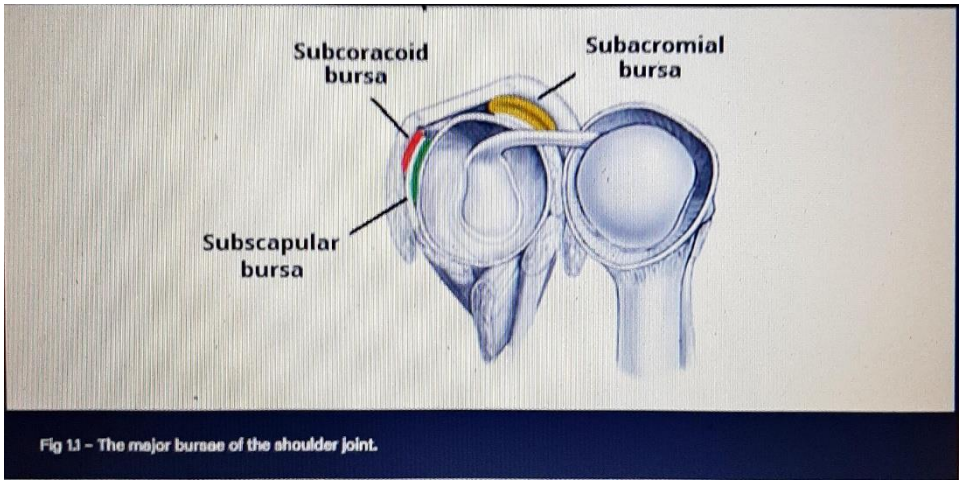

Fig 1.1 – The major bursae of the shoulder joint.

the joint but this beyound the scope of the this articale..

Ligaments..

- *In the shoulder joint the ligament play a key role in stabliising the bony structures.*
- ***Glenohumeral ligaments..****(superior ,middle, and inferior) -the joint capsule is formed by this group of ligament connecting the humerus to the glenoid fossa .they are the main source of the stabilltiy for the shoulder ,holding it in place and preventing it form dislocation*

anyeriory.they act to stabilise the anterior aspect of the joint.

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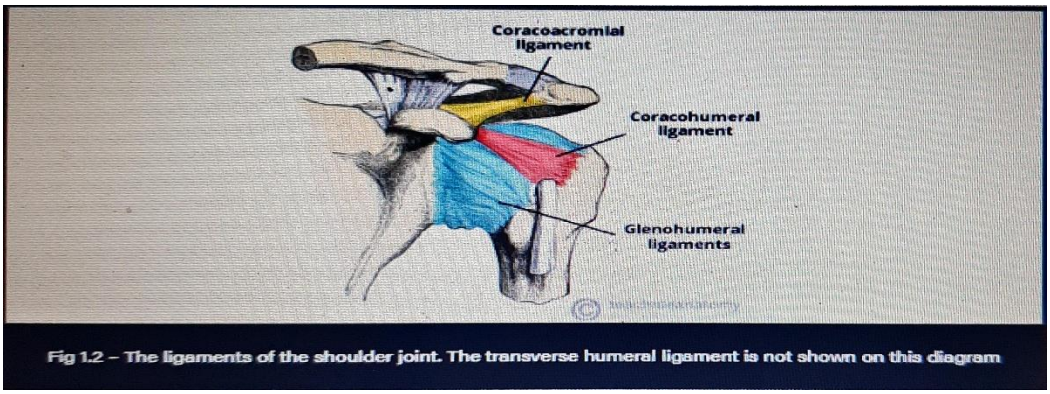

Fig 1.2 – The ligaments of the shoulder joint. The transverse humeral ligament is not shown on this diagram

Coracohumaral ligament..—*attaches the base of the corcoiad process to the greter tubercle of the humerus .it supports the superior part of the joint capsule.*

Tarnsverse humeral ligament..—*spans the distance between the two tubercles of the humerus .it holds the tendon of*

the long of the biceps in the intertubercular groove.;;

Caraco-clavicular ligament..-*composed of the trapeziod and the conoiad lagament and runs from the clavicale to the corcoiad process of the scapuala. They work alonggside the acromioclavvular ligament to maintain the alignnment of the clavical in relation to the scapula .they have significcant strenghth but large forces .(eg .after a high energy fall) can repture these ligament as part of on an acromio-clavicular joint (ACJ) injury .in severe ACJ, the carco-calvicular ligament may require surgical repair .*

- *The other major ligament is the **coracoacrmial ligament .**running between the acromail and corcoiad process of the scapula it forms the **corco-ligament arch.** This structure overlies the shoulder joint , preventing superior dispalcement of the humeral head.*

Movements..

***As** a ball and socket synovial joint , there is a wide range of the movement permitted :*

- ***Flexion (upper limb forward in sagitall plane .)**-pectoralis major ,anterior anterior deltoid and corcobrachiallis.biceps brachii weakly assists in forward the flexion.*

- ***Extenion (upper limb backwards in segittal plane) -****posterior deltoid , latissimus dorsi and teres major .*
- ***Abduction (upper limb away from midline in coronal plane):***
- *The first 0—15 degree of the abduction is produced by the supraspinatus.*
- *The middle fibres of the deltoid are resposible for the next 15—90 degrees.*
- *Past 90 degrees the scapula need to be rotated to achive abduction -that is carried out by the trapeziod and serratus aneterior ..*

- ***Abducation (upper limb midline in coronal plane)****-pectorallis major latissimus dorsi and teres major*
- ***Internal rotation (rotation toward the midline ,so that the thumb is pointing medially.)—subscap****ualaris ,pectoralaris major lattissimus dorsi, teres and anterior deltoid.*
- ***Extarnal rotaion(rotation away from the midline so that the thumb is pointing laterally)****-infraspintous and teres minor.*

2…

THE ELBOW JOINT…

- *The elbow is the joint connecting the upper arm to the foreawrm.it js classed as a hinge-types synvial joint .*
- *In this artical we shall look at the anatomy of the elbow joint ;its articulating surface movements stabiltiy ,and the clincal relevence.*
- ***STRUCTURE of the elbow joint***
- *.Articulating surface..*
- *It consists of the two separate articulataion.*
- *Trochlear notch of the **ulna** and the teochlea of the **humerus.***
- *Head of the **radius** and the capitulum of the **humerus.***

Note.

- *The **proximal radioulanr joint** is found within same joint capsule of the elbow , but most resources consider it as a separate articulation*
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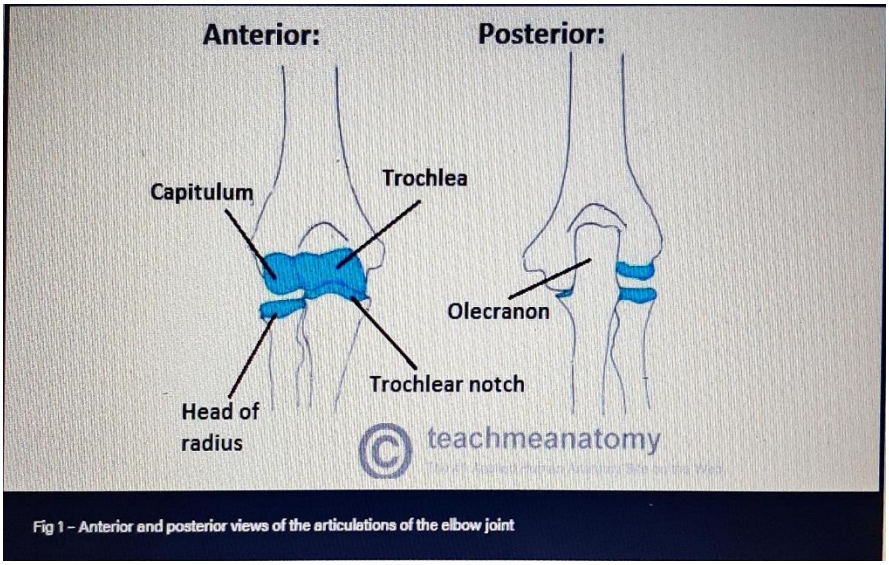

Fig 1 – Anterior and posterior views of the articulations of the elbow joint

Joint capsule and bursae..

- *Like all synovial joint ,the elbow has a capsule enclosing the joint .this in itself is strong and fibrous , strngthening the joint . The joint*

capsule is thickened medially and latearlly to form collatral ligaments.which stabilis the flexing and extending motion of the arm.

- *A bursa is a membranous sac filled with synovial fluid .it acts as a cushion to reduce friction betwen the moving parts of a joint ,limiting degeneration damage .there are many bursae in the elbow but only a few have clinical importance.*
- ***Intratendinous --****located with in the tendon of the triceps brachii.*
- ***Subtendinous –****between the olecrelanon and the tendon of the of the tricep brachii, reducing friction*

between the two structure during extension and flexion of the arm .

- ***Subcutaneous..(olecranon)bursa.—*** *between the olecrananon and the overlying connective tissue (implicated in olecranon bursitis.)*

Ligaments.

- ***The*** *joint capsule of the elbow is strngthened by ligament medially and letarally.*
- *The* ***radial collatrall*** *ligament is found in the latral side of the joint extending from the* ***lateral epicondyle ,****and blending with the annular ligament of the radius (a ligament from the proxiamal radioulanlar joint..)*

- *The **unla collateral** ligament origninate from the **medial epicondyle** and attaches to the coronoid process and olecranon of the ulna.*
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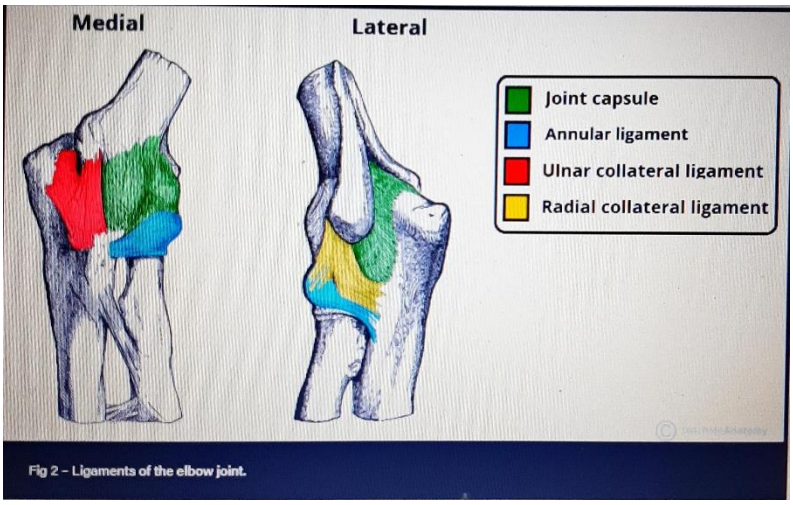

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3...

THE WRIST JOINT..

- *The wrist joint (also know as the radiocarpal joint)is a synovial joint in the upper lombs ,marking the area of the transition between the forearm and the head .*
- *In this artical we shall look at the structure of the wrist joint the movement of the joint ,and the relevent clinical syndromes.*
- ***Structure of the wrist joint.***
- ***Articulating surfaces..***
- ***Distally****—the proximal row of thr carpel bones (except the pisiform .)*
- ***Proximally..****the distal end of the radius and the articular disk (see below.)*

- ***tHe ulna is not a part of the wrist joint –****its articulate with the radius ,just proxiaml to the wrist joint at distal radioulanr joint it is prevented from articulating with the carpal bones by a fibrocartilaginous liagament called the articualt disk which lies over the superior surface of the unla ..*
- ***To****gether the carpal bones form a* ***convex*** *surface ,which articulate with*

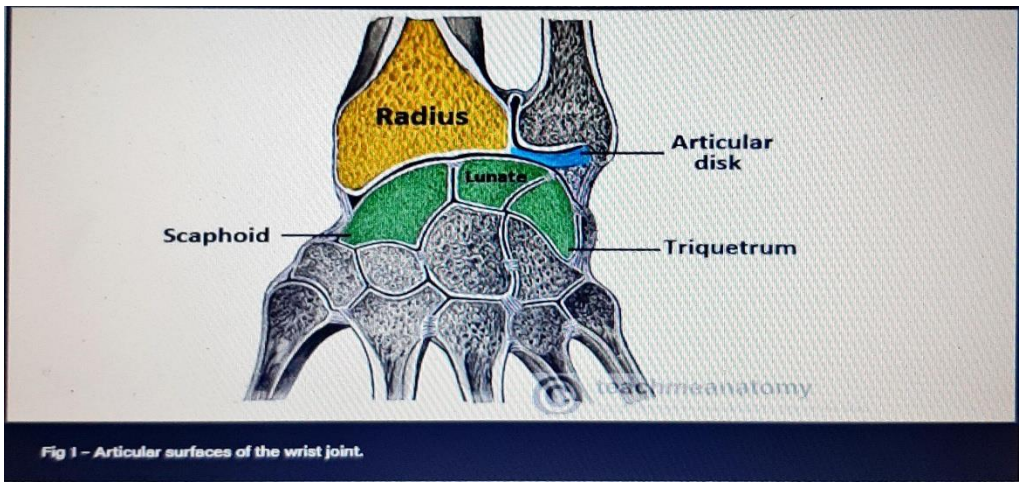

Fig 1 – Articular surfaces of the wrist joint.

*the **cancave** .surface of the radius and articualr disk.*

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Joint capsule ..

- *Like any synovial joint the capsyle is dual layered the faibrous outer layer attaches to the radius ,ulna and the proxiamal row of the carpal bones .the internal layer is comprised of a synovial membrane secreting synvial fluid which lubricates the joint .*

Ligaments.....

There are four liagament of note in the wrist joint one for each side of the joint

- ***Palmar radiocarpal..—its** is found on the palmar (anterior) side of the*

hand it passes from the radius to both rows of carpal bones its function aprt from increaseing stabillty is to ensure that the hand follows the foream during supination

- ***Dorsal radiocarpal. -****It is found on the dorsum (posterior) side of the hand.it passes form the radius to both rows of carpal bones .it contribute to the stabiltily of the wrist ,but also ensures that the hand follows the forearm during pronation.*
- ***Ulnar collatral –****Runs from the ulnar styloid process to the triquertrum and pisiform work in union with the other collatral laigment to prevent exessive lateral joint dispalcement ..*

- ***Radial collateral*** ***---R****uns form the radial styloid process to the scaphiod and tarezium .work in union with the other collateral ligament to prevent*

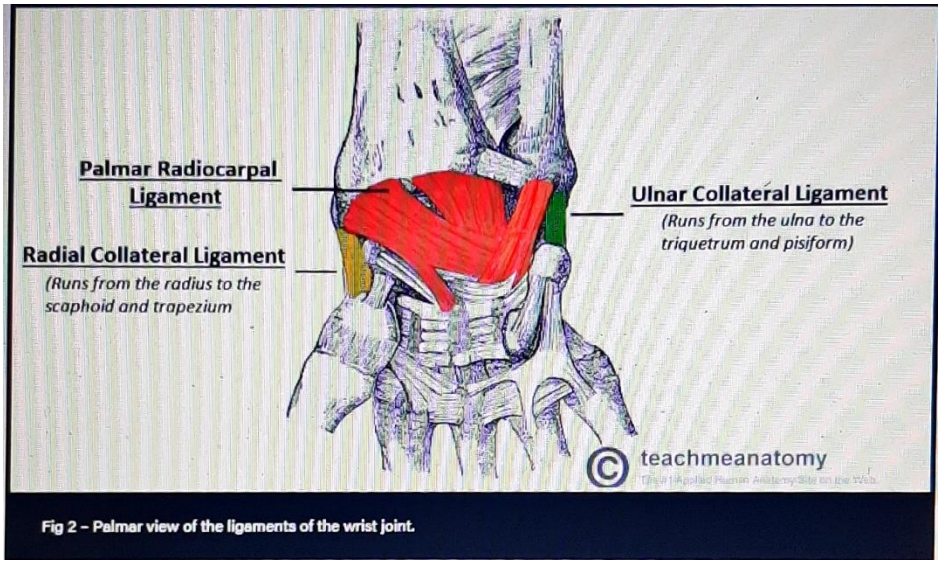

Fig 2 – Palmar view of the ligaments of the wrist joint.

to prevent excesssive lateral joint displacement..

……. ***The ends….*** ***..***