Shoulder Approaches

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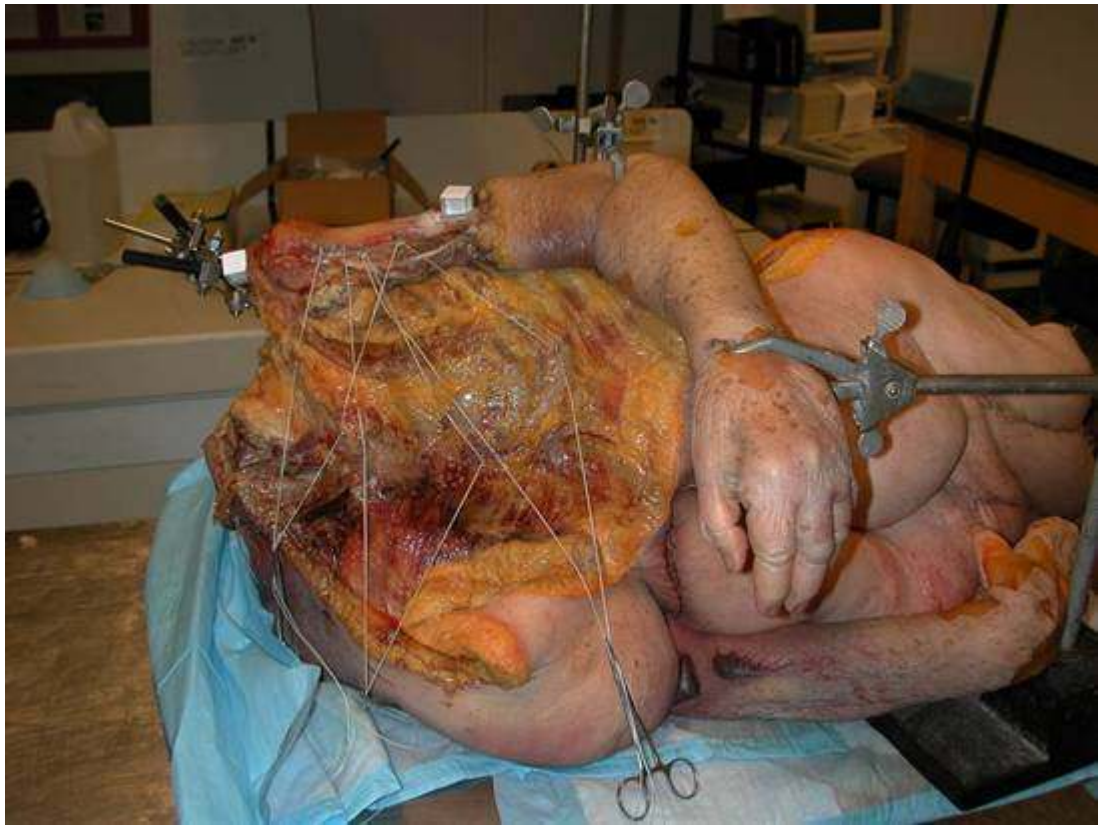
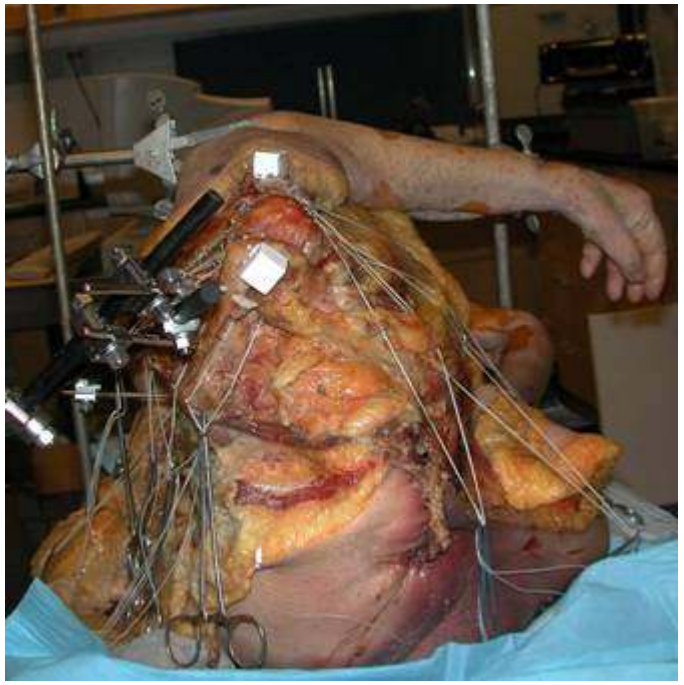
Northern Deanery
Shoulder Term
2010

Highlights

- Anterior Approach
- Lateral Approach
- Posterior Approach
- Anatomy Quiz
- Video from AO

Try to Avoid This





Aim

To confidently expose the shoulder joint with grace and elegance.

Anterior Approach

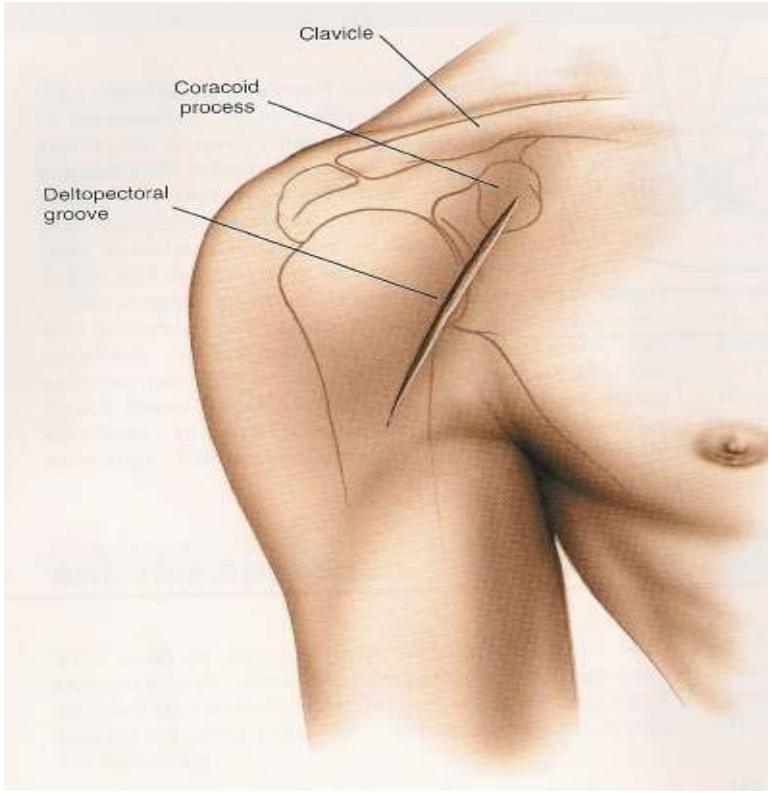
- Indications: ‘Work Horse’ Incision. Sepsis Drainage, Biopsy, Stabilisation, Arthroplasties

- Position: Supine with sandbag under scapula. Beach Chair Position (45 degree elevation). Head ring and turn head away from operated side.

- Adrenaline infiltration (1:100,000)

Anterior - Landmark

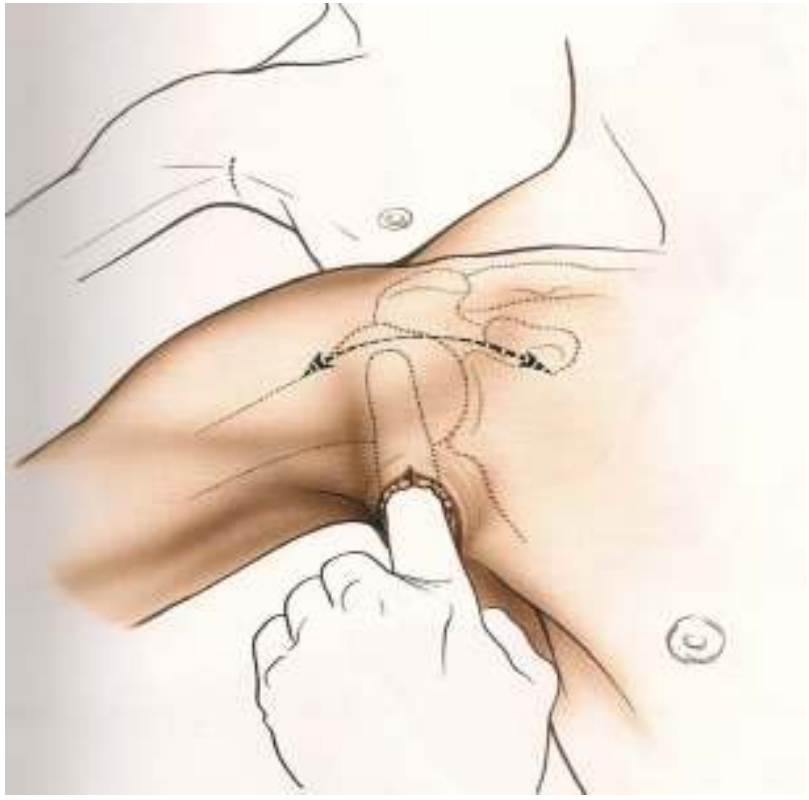
- Coracoid Process, Clavicle & Deltopectoral Groove

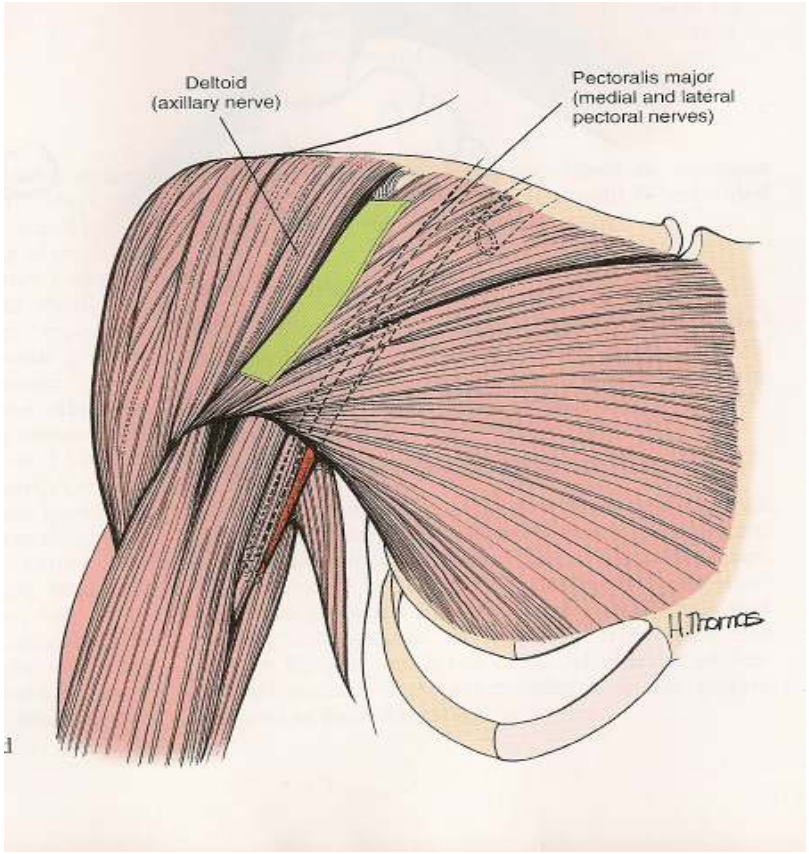


Anterior - Incision

- 2 sorts – Axillary and Anterior Incisions
- 10-15cm straight incision along the D/p groove. Start below the tip of coracoid.
- True Internervous plane: Deltoid (axillary) and Pec Major (pectoral nerve)

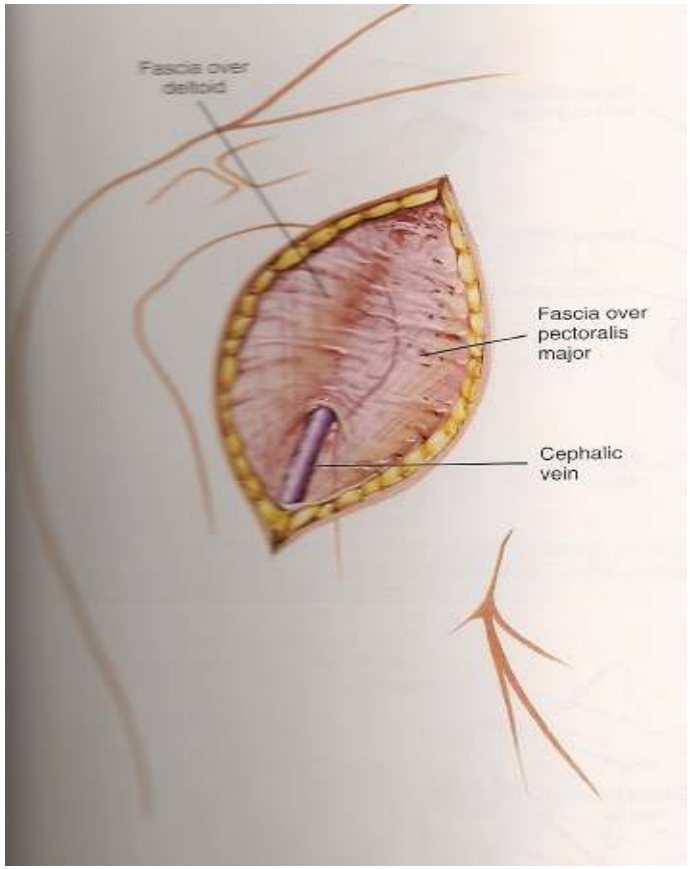
Anterior Incision





Anterior – Superficial Layer

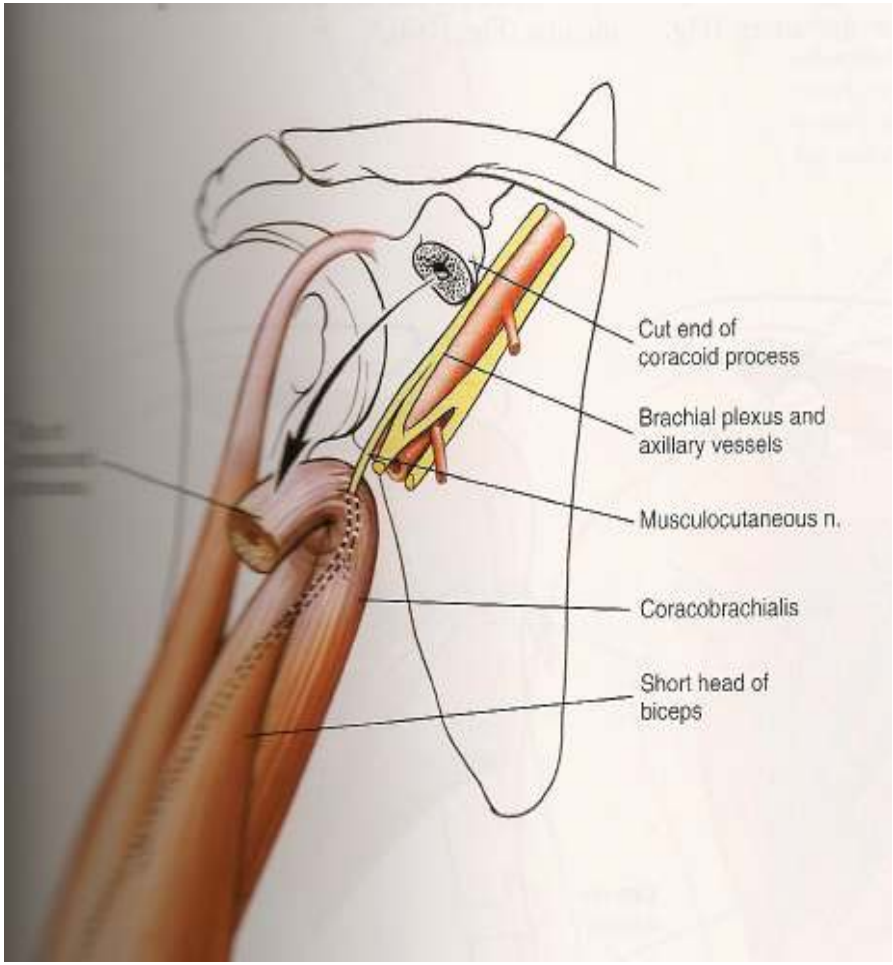
- Tips to find the groove. Look out for cephalic vein, trace upwards. Try to preserve it.
- Retractor to the D/p groove and excise clavipectoral fascia



Anterior – Deep Dissection

- Aim is to expose GH joint.
- Conjoint tendon (short head biceps and coracobrachialis) retracted medially.
- Often a fat layer lying anterior to it.
- For better exposure, detached off at origin by taking down coracoid process. (not often used)

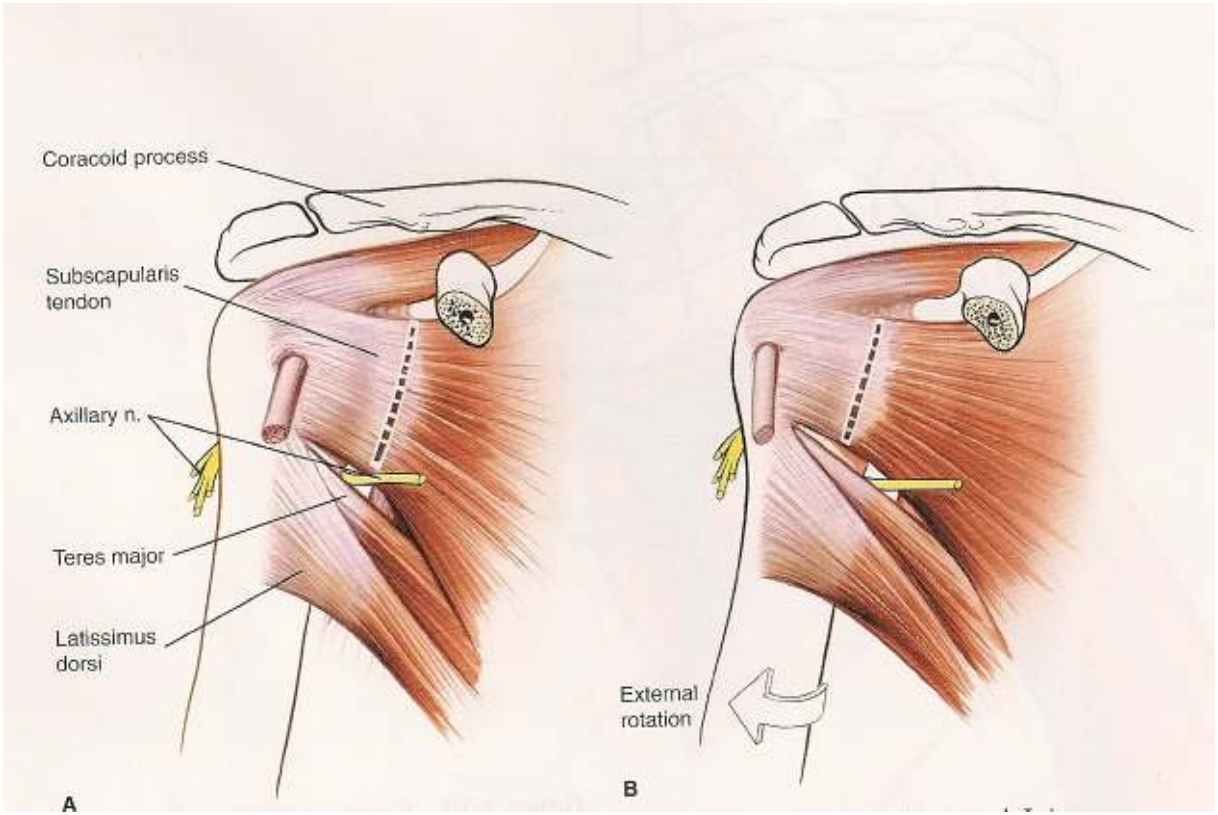
Anterior – Deep Dissection



Anterior – Deep Dissection

- Next layer is the Subscapularis – transverse fibres
- Externally Rotate shoulder to protect Axillary Nerve and bring muscle border into view
- Inferior Landmark – Triad of small vessels. Do not stray inferior to this

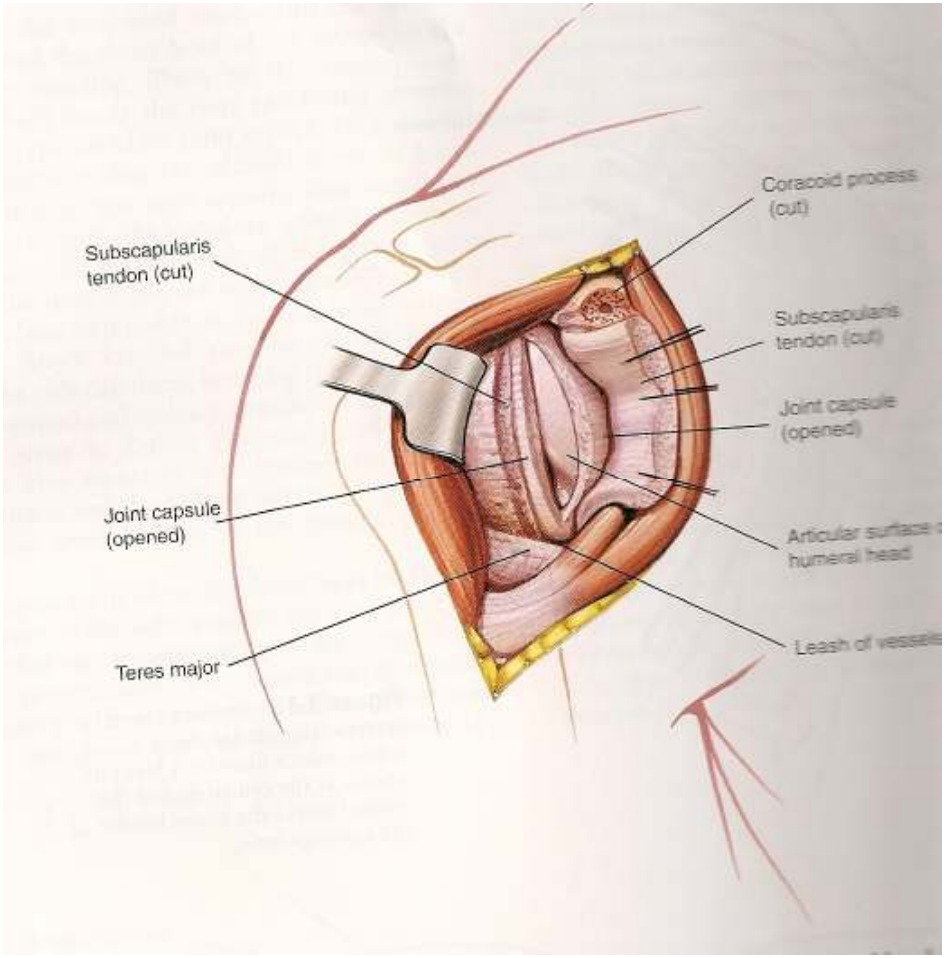
Anterior – Deep Dissection



Anterior – Deep Dissection

- Stay suture to tag the Subscap Muscle belly
- Divide 3cm from the insertion onto lesser tuberosity of humerus
- Capsule is the deepest layer. Often blends with Subscap. Incise longitudinally

Anterior – Deep Dissection



Anterior – Danger Zones

- Musculocutaneous Nerve – lies medial to coracoid process. Stay LATERAL
- Cephalic Vien should be ligated if damaged to avoid thromboembolism
- Axillary Nerve – Stay above the triad of vessels to avoid going into quadrangular space

Anterior – Danger Zones

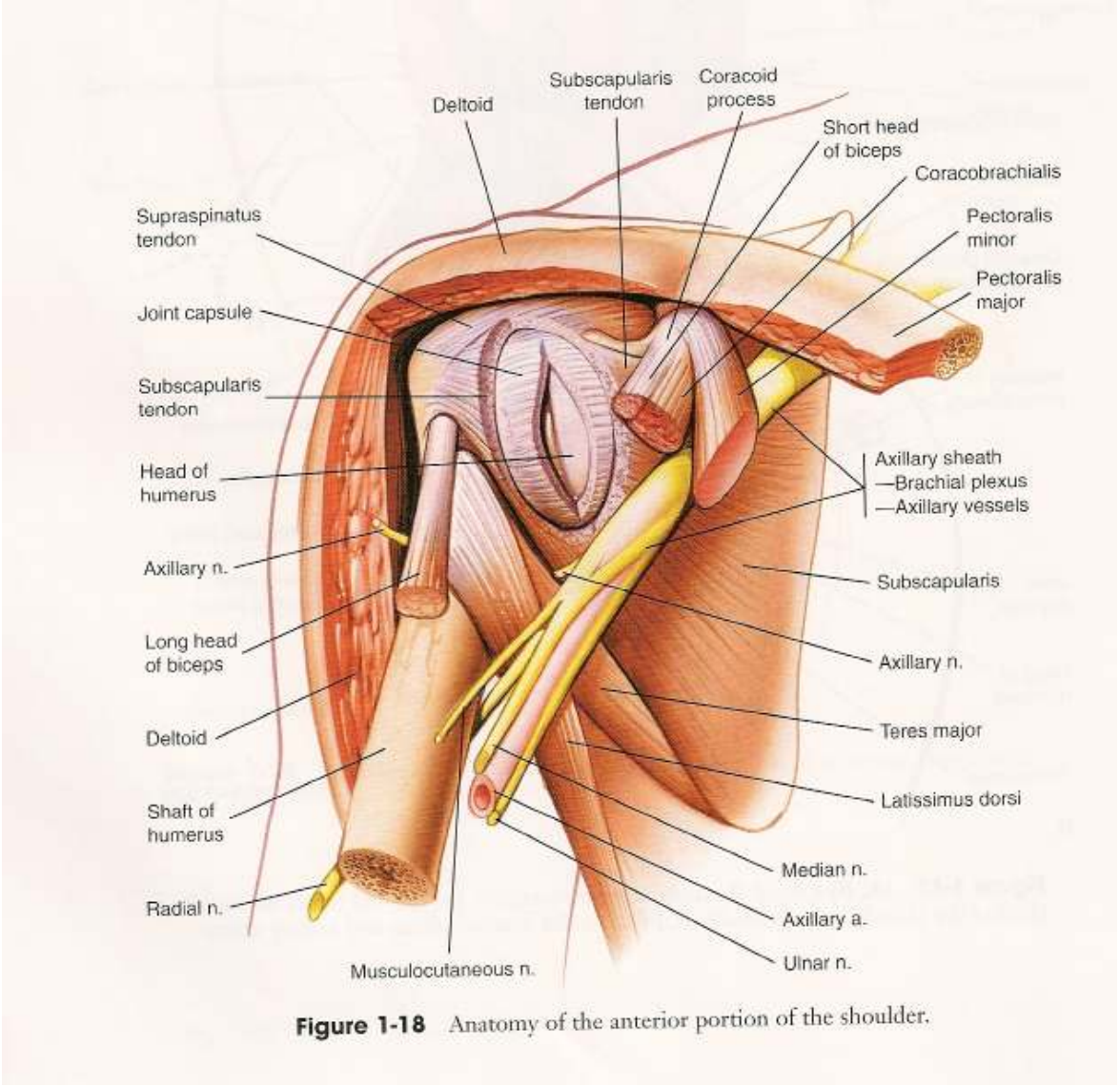


Figure 1-18 Anatomy of the anterior portion of the shoulder.

Anterior - Extensile Measures

- Proximally – Excise middle third of clavicle to expose brachial plexus

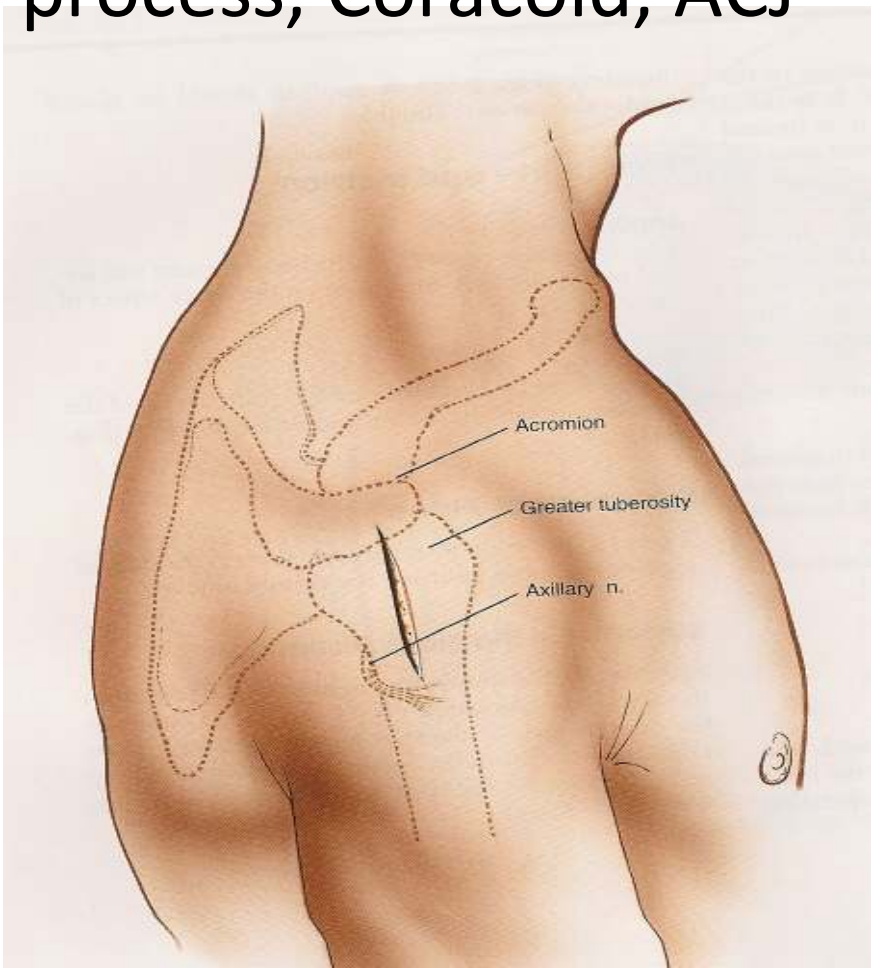
- Distally – Part of anterolateral approach to humerus.

Lateral Approach

- Indications: ORIF, Subacromial decompression, Cuff repair
- Position: Similar to anterior approach
- Adrenaline Infiltration for haemostasis

Lateral - Landmark

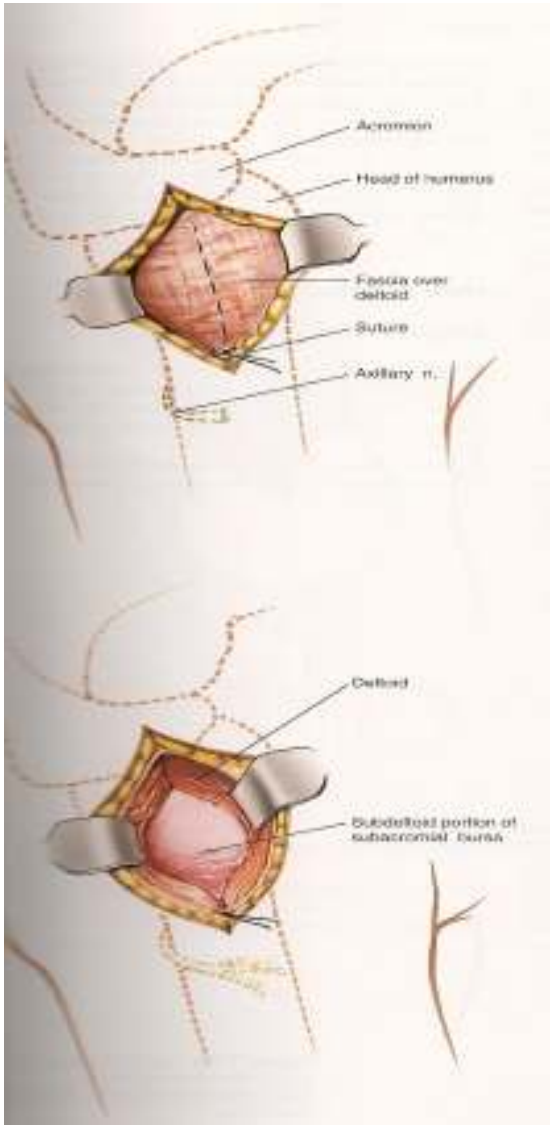
- Acromion process, Coracoid, ACJ



Lateral - Incision

- 5cm longitudinal incision from tip of acromion
- Superficial – Split deltoid with sharp knife (multipennate muscle)
- Optional stay suture at the bottom end of incision to prevent extension distally to axillary nerve

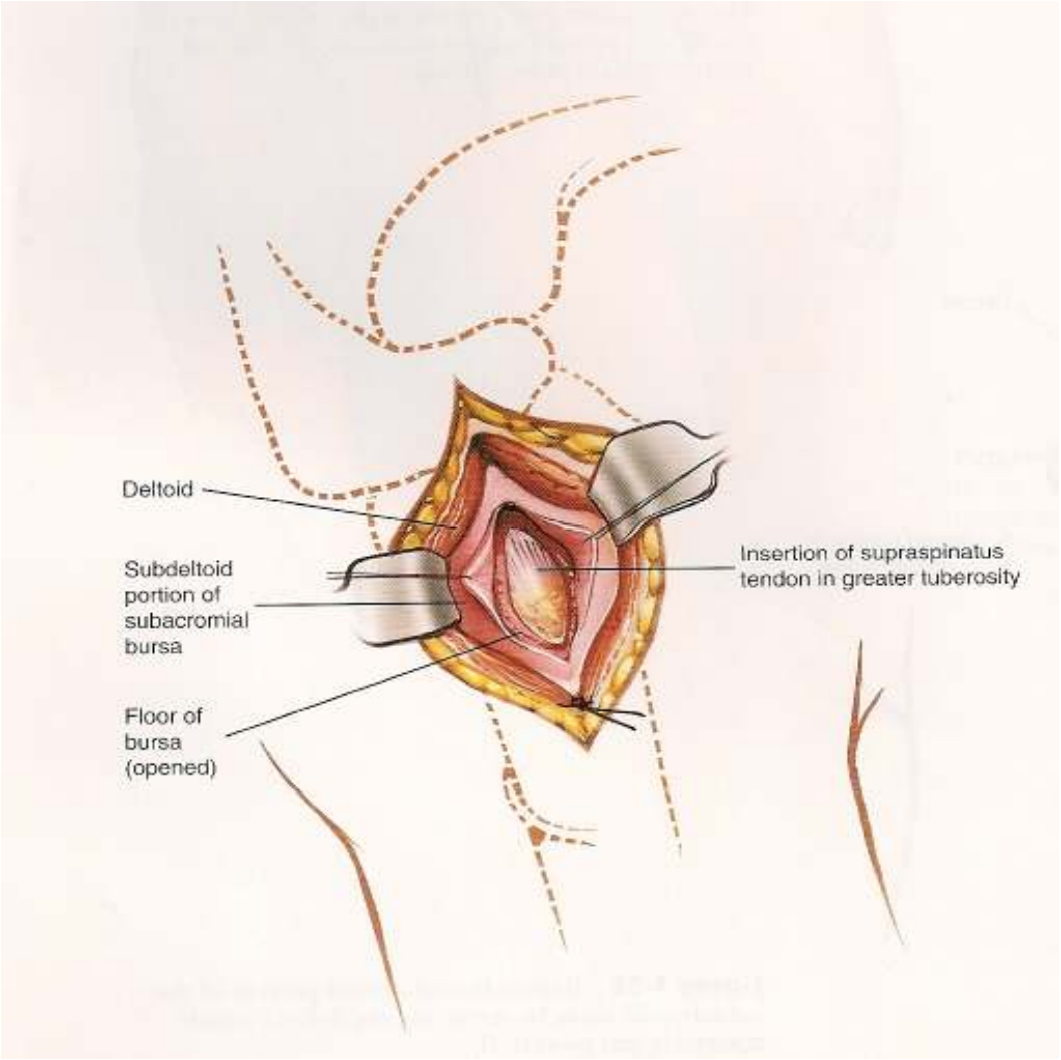
Lateral – Sperficial Cut



Lateral – Deep Dissection

- Aim is to reach SST and Humeral Head
- Retractor to deltoid muscle.
- Split with sharp dissection down to bursa.
- Lift the bursa with forceps and cut a hole through it. Often excise to gain better view
- SST lies immediately underneath Bursa

Lateral – Deep Cut



Lateral – Danger Zone

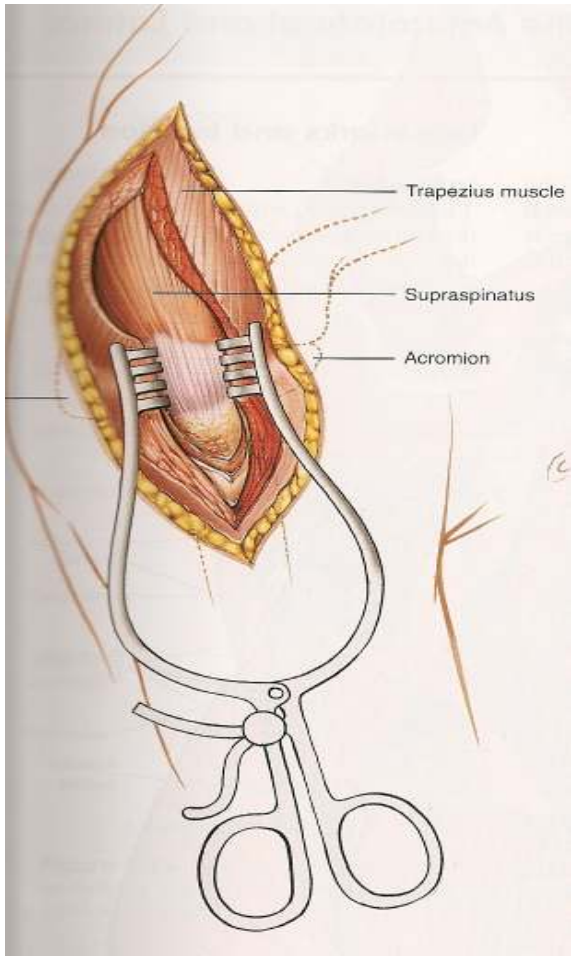
- Axillary Nerve – winds around humerus and enters the deltoid muscle 7cm below tip of acromion (Superficial branch of Axillary Nerve)

- Posterior Circumflex Humeral Artery – follows the same course as Axillary Nerve

Lateral – Extensile Measures

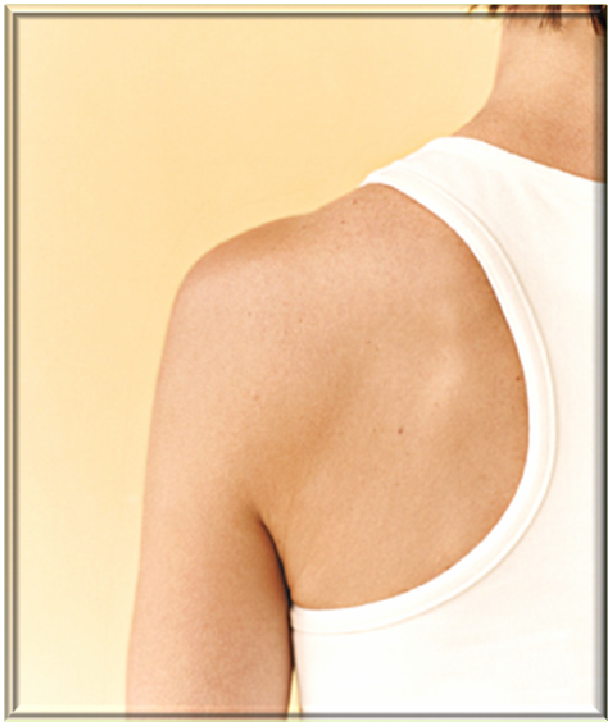
- Proximal – Split the acromion in line of skin incision to expose SST
- Used mainly to mobilise SST in large cuff tear and to explore suprascapular nerve
- Distal – Limited by Axillary Nerve

Lateral – Extensile Cut

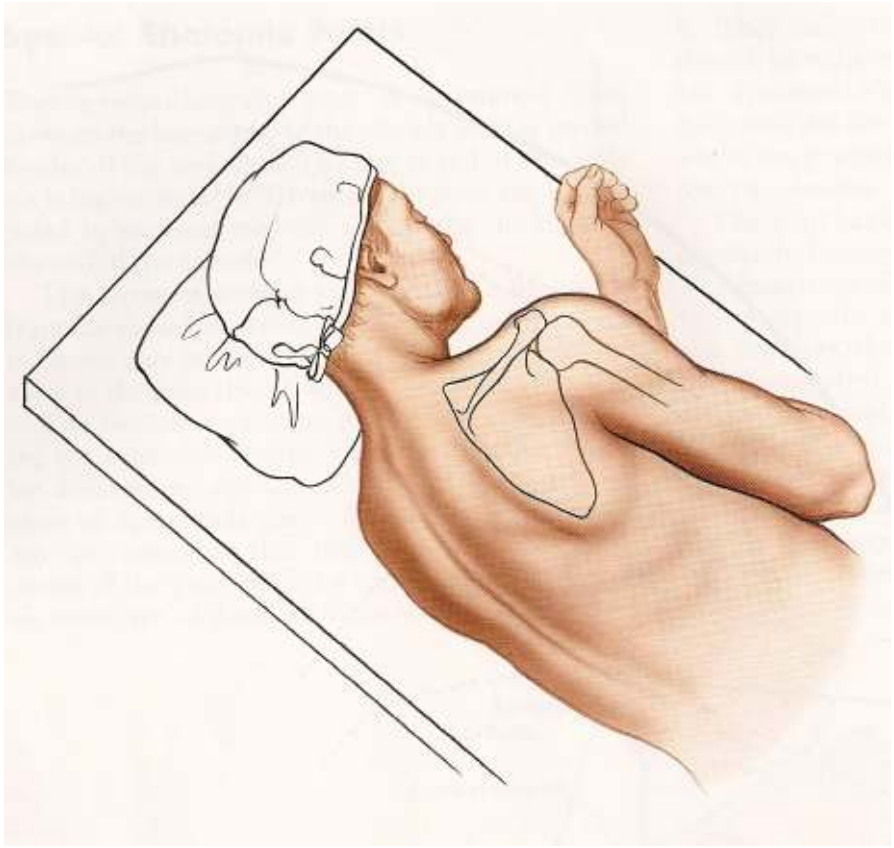


Posterior Kocher's Approach

- Indications: Posterior Dislocation repair, Glenoid exposure, Biopsy, Drainage of sepsis, scapula ORIF eg. Floating shoulder, Suprascapular Nerve Decompression

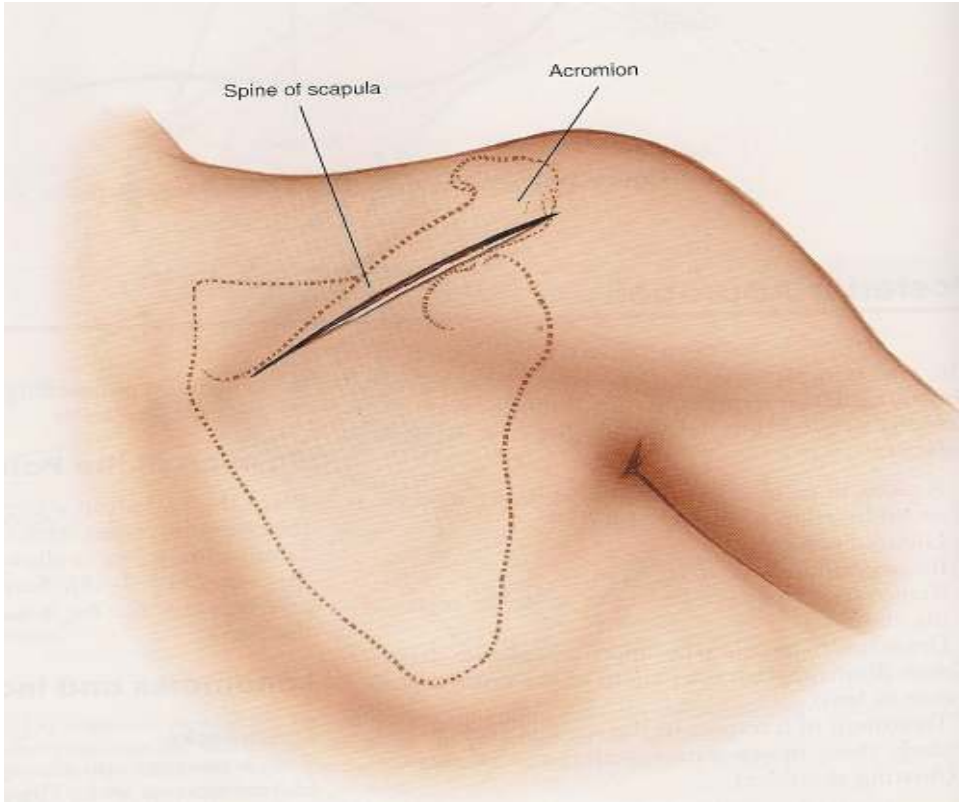


Posterior - Position



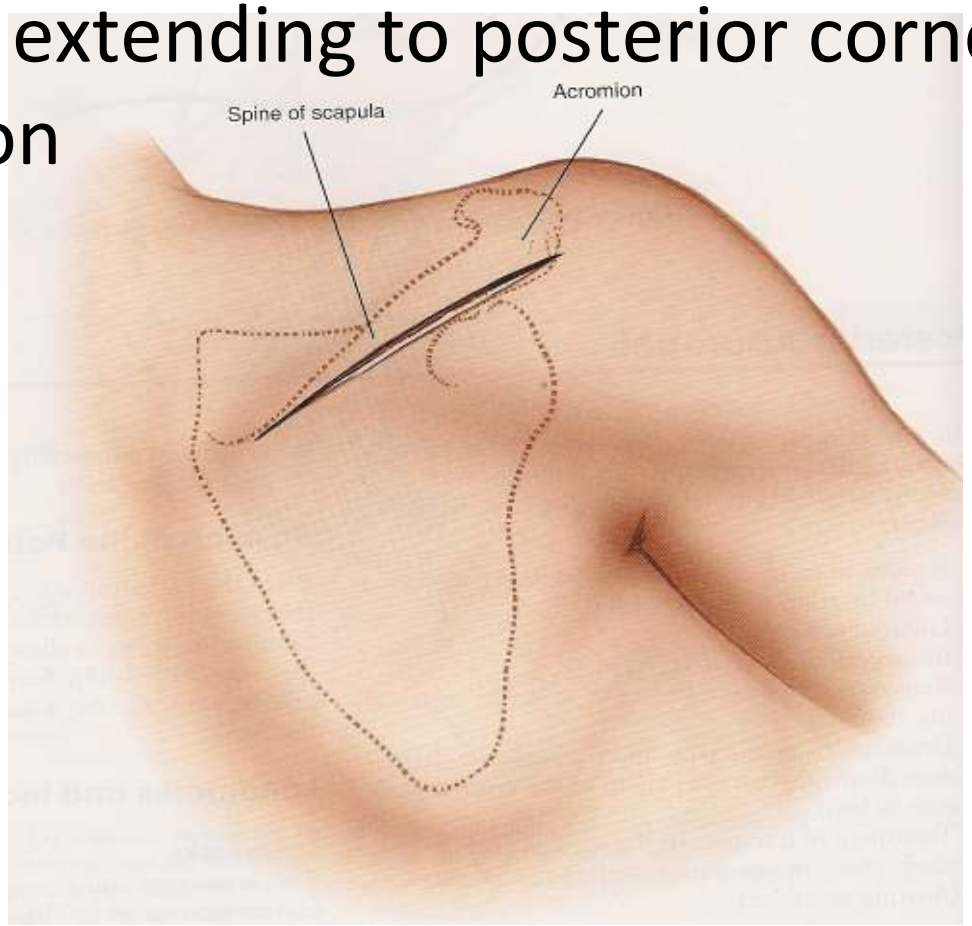
Posterior - Landmark

- Spine of scapula, acromion process



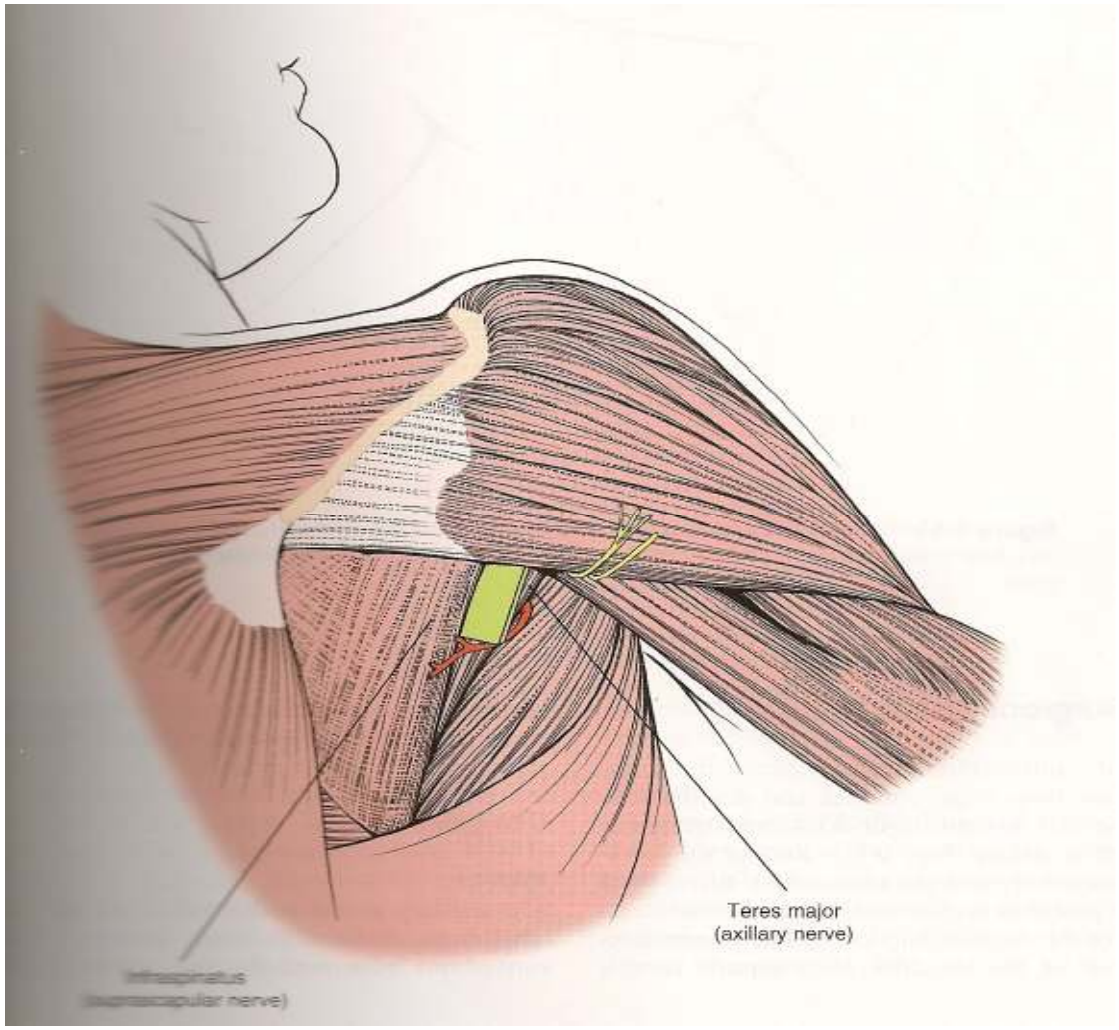
Posterior - Dissection

- Incision – linear incision along the spine of scapula extending to posterior corner of acromion



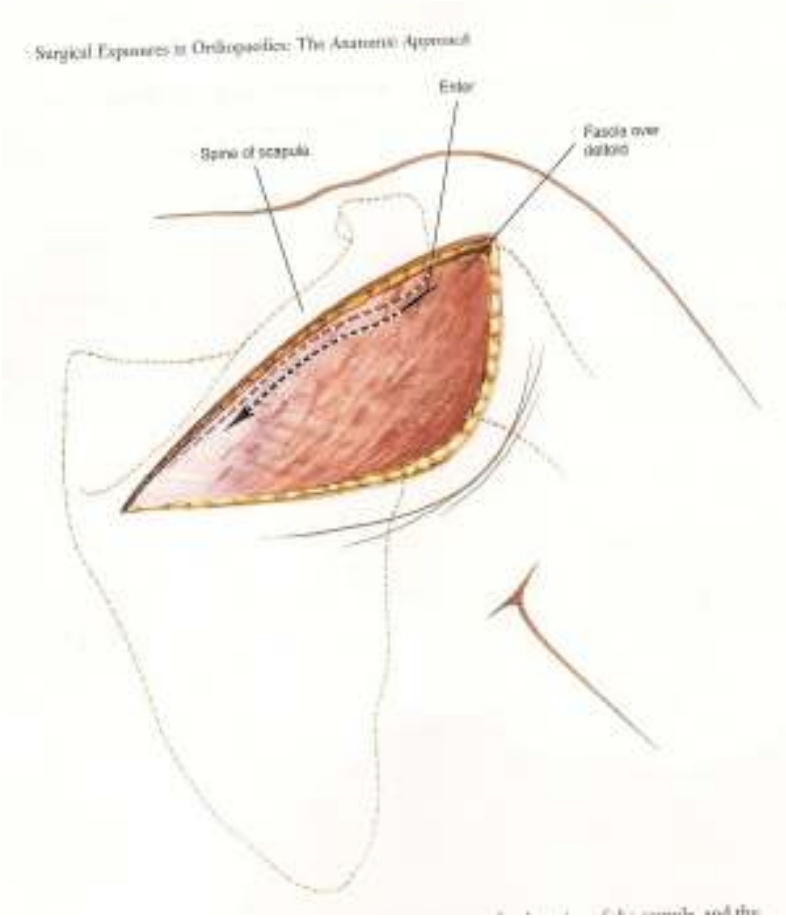
Posterior - Dissection

- True Internervous Plane: Deltoid (Axillary) & Infraspinatus (Suprascapular) and Teres Minor (Axillary)



Posterior – Superficial

- Superficial Cut: Develop a plane between deltoid and infraspinatus from its origin. May blend with infraspinatus. Easier to locate at the lateral end of incision. Detach deltoid from its origin

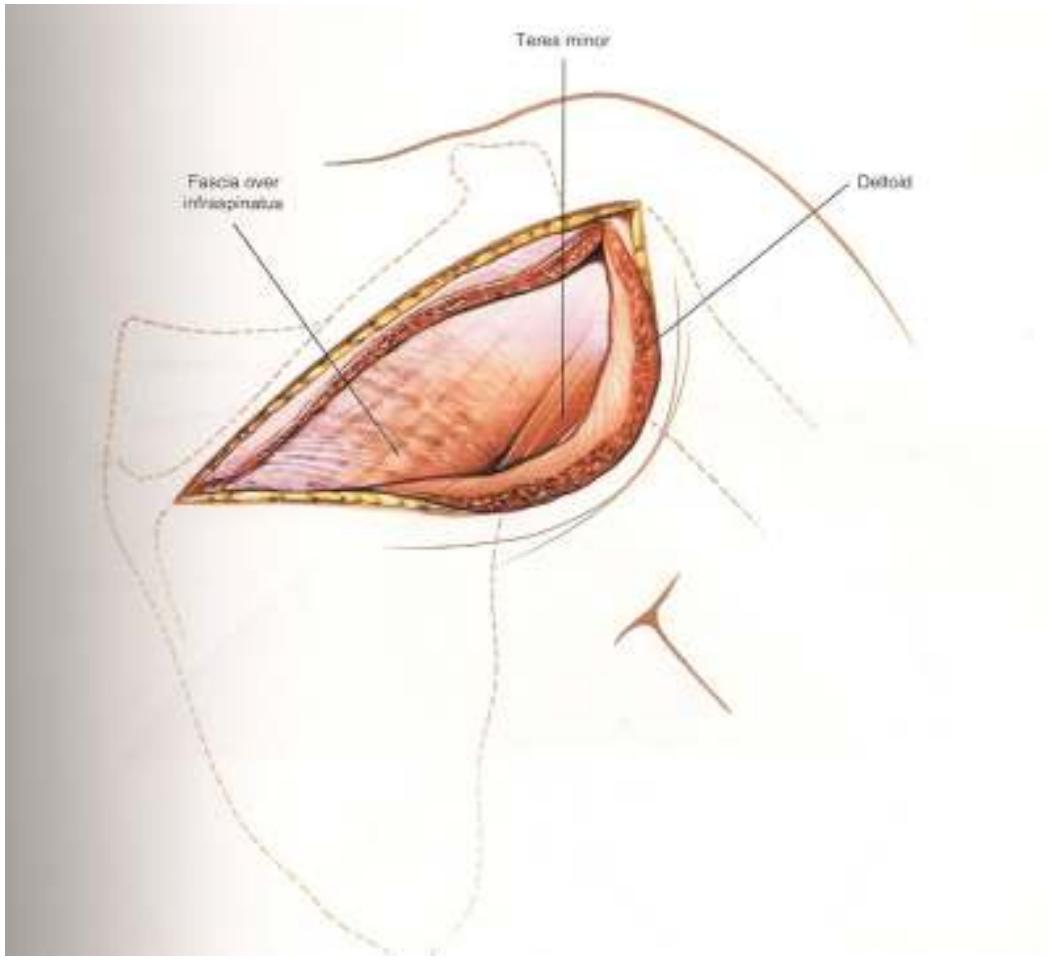


Posterior – Deep Dissection

- Aim is to reach posterior capsule

- Identify plane between infraspinatus and teres minor (blunt dissection). Retractor between the two muscle. Don't stray below TMn – Quad Space!

Posterior

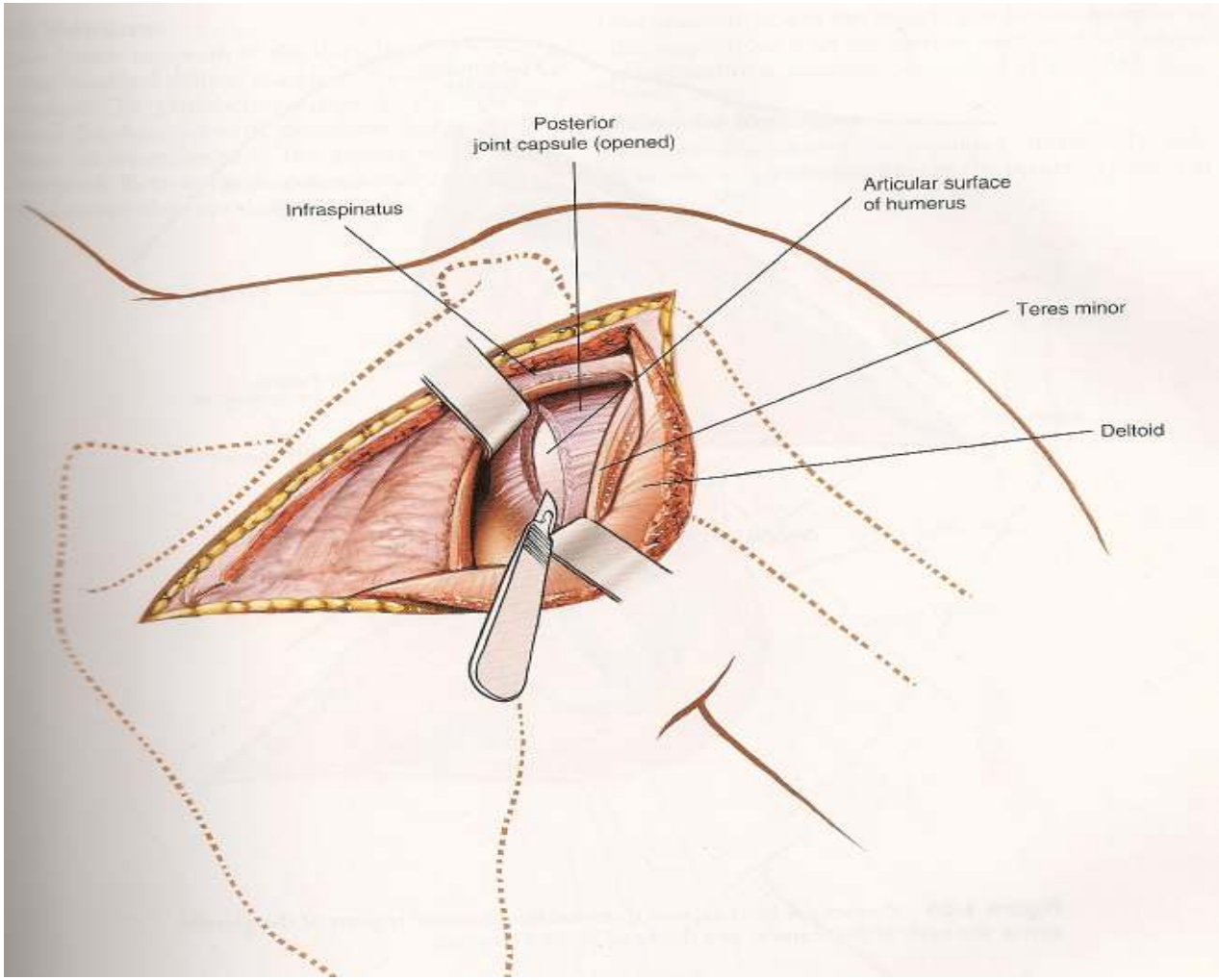


Posterior - Deep

- Retract IST superiorly and TMn inferiorly to expose capsule and neck of glenoid.

- Incise longitudinally (close to scapula edge) to expose joint.

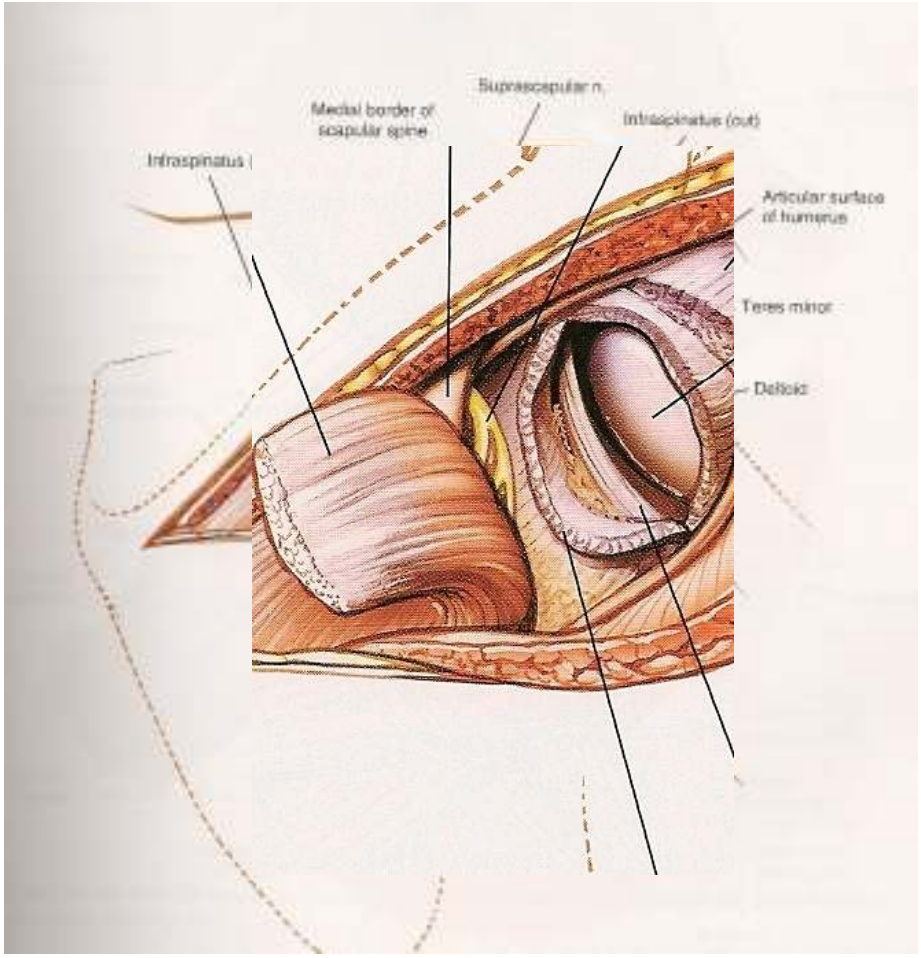
Posterior - Deep



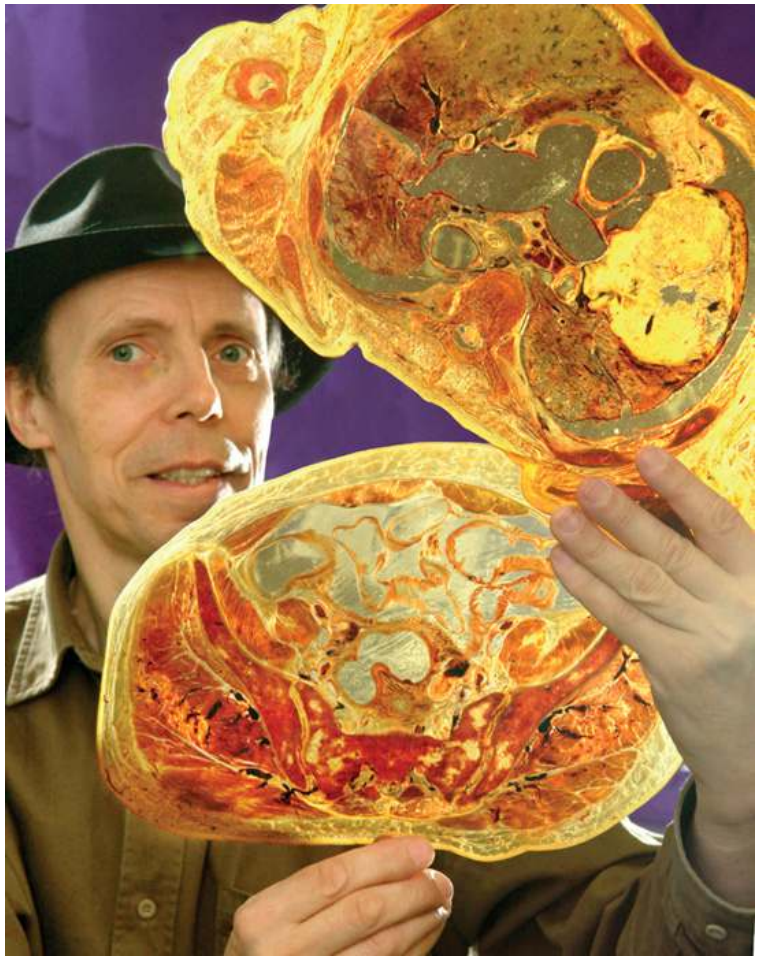
Posterior – Danger Zones

- Axillary Nerve – Runs through quadrangular space beneath TMn.
- Suprascapular Nerve – Runs along the base of spine of scapula. Exit from Supraspinous Fossa to the infraspinous fossa. Avoid retracting IST too far medially – neuropraxia.
- Posterior Circumflex Artery – Difficult to control bleeding.

Posterior – Danger Zones



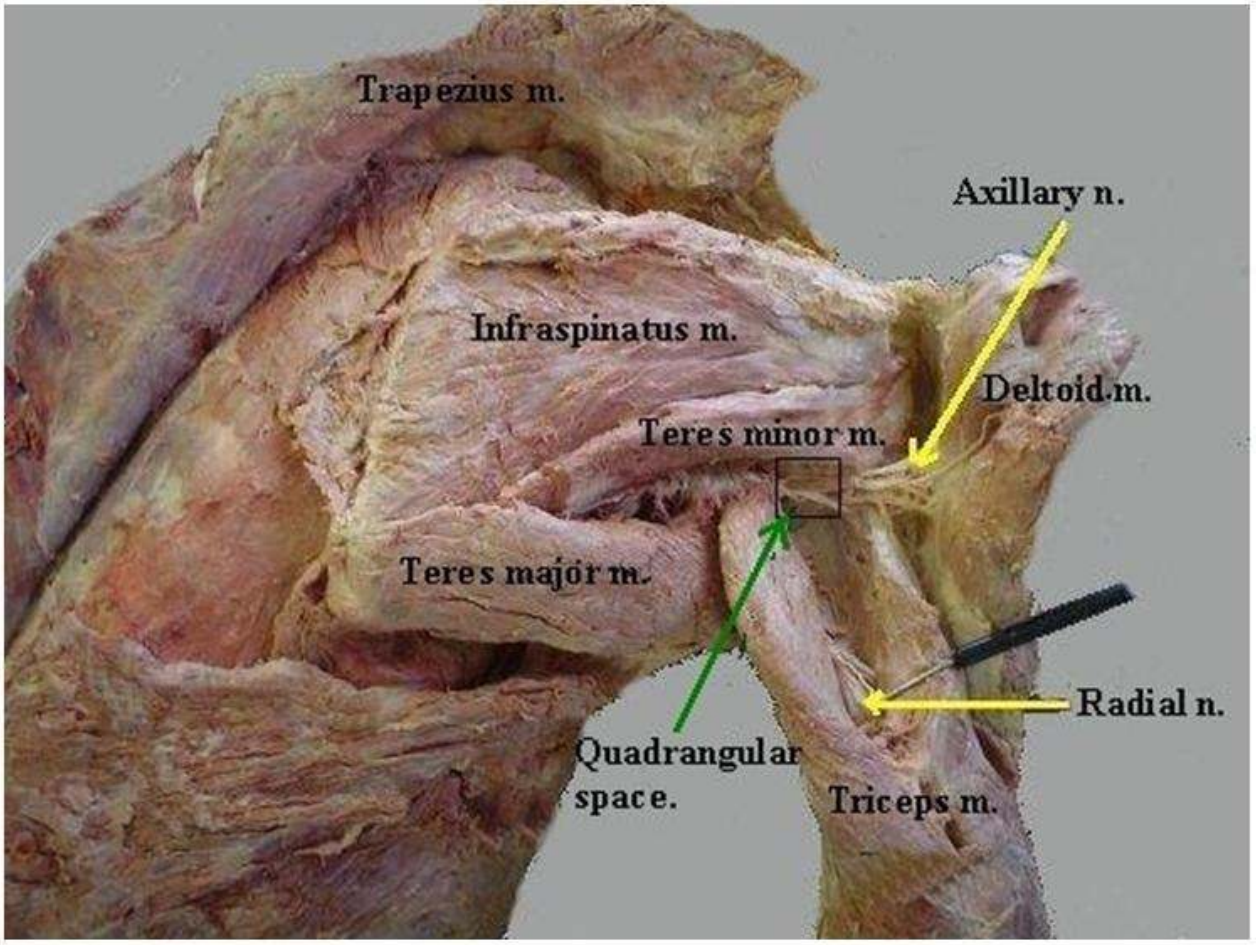
Dr Gunther Von Hagen's Quiz



Anatomy Quiz

- Borders of Quadrilateral Space. What structure represents the superior border of Quad Space when viewed from the *front*?
- Subscapularis Muscle
- Anterior
- Superior: Subscapularis, Lateral: Neck of Humerus, Medial: Long Head triceps, Inferior: Teres Major
- When viewed from the back, the Teres Minor forms the superior border.

Quadilateral Space



AO Video – Posterior Approach

- 15.45

Avoid Bad Scars