Shoulder Approaches

Mark Chong
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 & Deltoid 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

- Deltoid
- Subdeltoid portion of subacromial bursa
- Floor of bursa (opened)
- Insertion of supraspinatus tendon in greater tuberosity
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
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

Trapezius m.

Infraspinatus m.

Teres minor m.

Teres major m.

Quadrangular space.

Triceps m.

Axillary n.

Deltoid m.

Radial n.
AO Video – Posterior Approach

• 15.45
Avoid Bad Scars