The Shoulder: Current Approaches to Evaluation and Management

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THE SHOULDER JOINT

• Complex system
  • affords great mobility & inversely poor stability

• Only 25% humeral head makes contact with the glenoid fossa

• Stability at the glenohumeral joint
  • glenoid fossa deepened by a fibrocartilaginous labrum
  • compression of the humeral head in the fossa by the 4 muscles of the rotator cuff
  • ligaments – superior, middle & inferior glenohumeral ligs & coracohumeral lig
  • secondary muscles – lat dorsi, pect major, teres major

• Stability of the scapulothoracic joint
  • trapezeii, rhomboids, serratus anterior, levator scapulae

• Stability of the acromioclavicular joint
  • AC lig, coracoclavicular lig
REALITIES OF GENERAL PRACTICE

• Time constraints
  • 15-20 mins
  • history/examination/differential diagnosis/patient education/future therapy-investigation

• Dr Google’s preconceived diagnoses

• Cost of investigation
  • what the patient is willing to pay for radiology shopping-sacrificing quality

• Doctor shopping
  • locating recent investigations

• The complaint list

• Locating timely surgical intervention for the uninsured

• Variability in quality/timing of hospital discharge summaries/specialist letters
SHOULDER COMPLEX PATHOLOGY

• To consider in 3 parts
  • Glenohumeral joint
    o within the joint – OA, labral tear, RA, septic arthritis
    o around the joint – rotator cuff tendinopathy, subacromial bursitis, AC joint OA, biceps tendinopathy
  • Scapulothoracic joint
    o scapulothoracic jnt dyskinesis, subscapular bursitis
  • Referred to the shoulder
    o cervical spine (C5 radiculopathy), brachial plexus pathology, suprascapular nerve pathology
    o systemic causes eg IHD, metastatic bone disease, diabetes, osteoporosis, polymyalgia rheumatica
    o subdiaphragmatic causes eg ruptured ectopic preg, cholelithiasis, subdiaphragmatic abscess
HISTORY – Pain/assoc symptoms/function/Rx history

• Pain
  • rate of onset/duration/location/nature/severity/exacerbating factors

• Assoc SX
  • weakness + specific movements/instability/crepitus/stiffness
  • Post trauma/cervical symptoms – neurovascular Sx in the upper limb

• Function
  • what they had – work, ADL including posture, sport
  • what they have lost – modifications to lifestyle

• Treatment History
  • analgesia, physical therapy, peri/intra-articular injections, prior operative intervention

• Red flags symptoms
  • unexplained LOW + shoulder pain
  • fever/chills
  • severe gnawing pain keeping awake at night
  • any neurological symptoms
EXAMINATION

• Directed by what you have learnt in the history
• Undertaken in a specific sequence – efficiency + efficacy
• Specific tests are not pathognomonic of given pathologies – interpreted with the history
• Inspection
• Palpation
• Movement – Active/Passive
• Neurovascular Assessment
• Quick examination of the cervical spine prudent as the shoulder complex and cervical spine act the one kinetic chain
INSPECTION

• Asymmetry
  • Anteriorly – shoulder outline/arm posture/AC + SC joints/supraclavicular fossa
  • Posteriorly – position of scapulae

• Muscle Wasting/Spasm
  • Anteriorly – pectoralis/deltoid/supraspinatus
  • Posteriorly – infra+supraspinatus/deltoids/rhomboids/trapezii

• Scars/Arthroscopic Ports

• Generally Unwell
  • skin colour/sweating/lymphadenopathy etc.
PALPATION

• **Anterior**
  • SC joint – clavicle – AC joint – inf to coracoid process – down bicipital groove – humeral head – sup facet humeral gr tuberosity
  • Impingement – adduct shoulder/palpate subacromial bursa

• **Posterior**
  • Scapular spine/inf scapular angle/medial border scapular
MOVEMENT

• Muscular weakness
  • active less than passive range of movement e.g. rotator cuff tear, C5 radiculopathy, suprascapular n damage

• Restricted movement in multiple directions e.g. adhesive capsulitis, OA or inflammatory arthritis in glenohumeral joint

• All movements greater than expected e.g. capsular weakness

• Painful arc 60-120 degrees abduction e.g. subacromial impingement (bursitis/tendinitis/Ac joint disruption

• Flexion: pectoralis/ant fibres of deltoid
• Extension: lat dorsi/post fibres of deltoid
• Abduction: supraspinatus/deltoid
• Adduction: pect major/lat dorsi/teres major
• Ext rotation: teres minor/infraspinatus
• Int. rotation: subscapularis
SPECIFIC TESTS

- **Supraspinatus** – empty can
- **Infraspinatus/teres minor** – resisted ext rotation
- **Subscapularis** – lift off test
- **Impingement** – Hawkins test/ painful arc
- **Scapulothoracic dyskinesis** – shrug shoulders/roll shoulders backwards and forwards
- **Shoulder instability** – apprehension test
INVESTIGATIONS

- **Xray**
  - shoulder series – bone -must include an axillary view, (if AC joint dislocation -bilateral AP views standing +weights)

- **Ultrasound**
  - anatomic appreciation of soft tissues/dynamic function

- **MRI**
  - static appreciation of soft tissue/bone

- **Decision which to use based on:**
  - Potential diagnosis - what is clinically indicated
  - What will the patient pay for/can afford
  - What is the patient’s expectation

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“Off hand, I'd say you're suffering from an arrow through your head, but just to play it safe, I'm ordering a bunch of tests.”
INVESTIGATIONS

• Points
  • Xray all pts over 40yrs of age
    o degenerative findings/incidental findings e.g. low bone density / metastatic bone
disease / lung parenchymal disease
  
  • Good quality US
    o soft tissue pathology e.g. bursitis, tendon bunching under the acromioclavicular arch
    with impingement

• CT - Trauma – assess posterior dislocation/ failed reduction – fracture morphology and
  extent

• MRI - assess labral tears/ labral cysts/extent of muscular atrophy/ tendon retraction/
ligamentous rupture
TREATMENT

• Chronic Degenerative Disease Situations

  • near full ROM/minimal weakness - physical therapy +/- NSAIA

  • chronic pain/some loss of movement/failed physical therapy - ultrasound guided steroid injection +/- NSAIA/analgesia

  • chronic pain/adhesive capsulitis - hydrodilatation +/- NSAIA/analgesia
SURGICAL OPINION

- Failed conservative management – 2 radiologically guided steroid injections or hydrodilatations
- Failed conservative management for 6/12
- Acute rotator cuff tear
- Recurrent shoulder dislocation
- Failed dislocated shoulder joint reduction
- Posterior shoulder joint dislocation
- Ant dislocation assoc with fractured neck of humerus/displaced greater tuberosity fracture
- Dislocation assoc with a large bony bankart lesion
- Any neurovascular compromise with shoulder pathology
- Type 3-6 AC joint injuries
- Lateral and mid shaft clavicular fractures with significant angulation/shortening
- Severe glenohumeral joint osteoarthritis (pain/stiffness/functional impairment)