The Shoulder:
Current Approaches to Evaluation and Management

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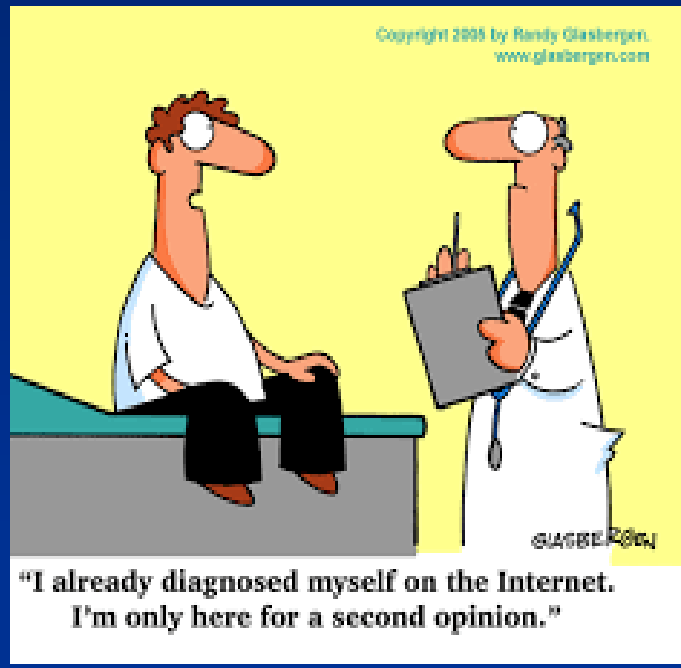
THE SHOULDER JOINT

- **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
    - within the joint – OA, labral tear, RA, septic arthritis
    - around the joint – rotator cuff tendinopathy, subacromial bursitis, AC joint OA, biceps tendinopathy
  - Scapulothoracic joint
    - scapulothoracic jnt dyskinesis, subscapular bursitis
  - Referred to the shoulder
    - cervical spine (C5 radiculopathy), brachial plexus pathology, suprascapular nerve pathology
    - systemic causes eg IHD, metastatic bone disease, diabetes, osteoporosis, polymyalgia rheumatica
    - 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

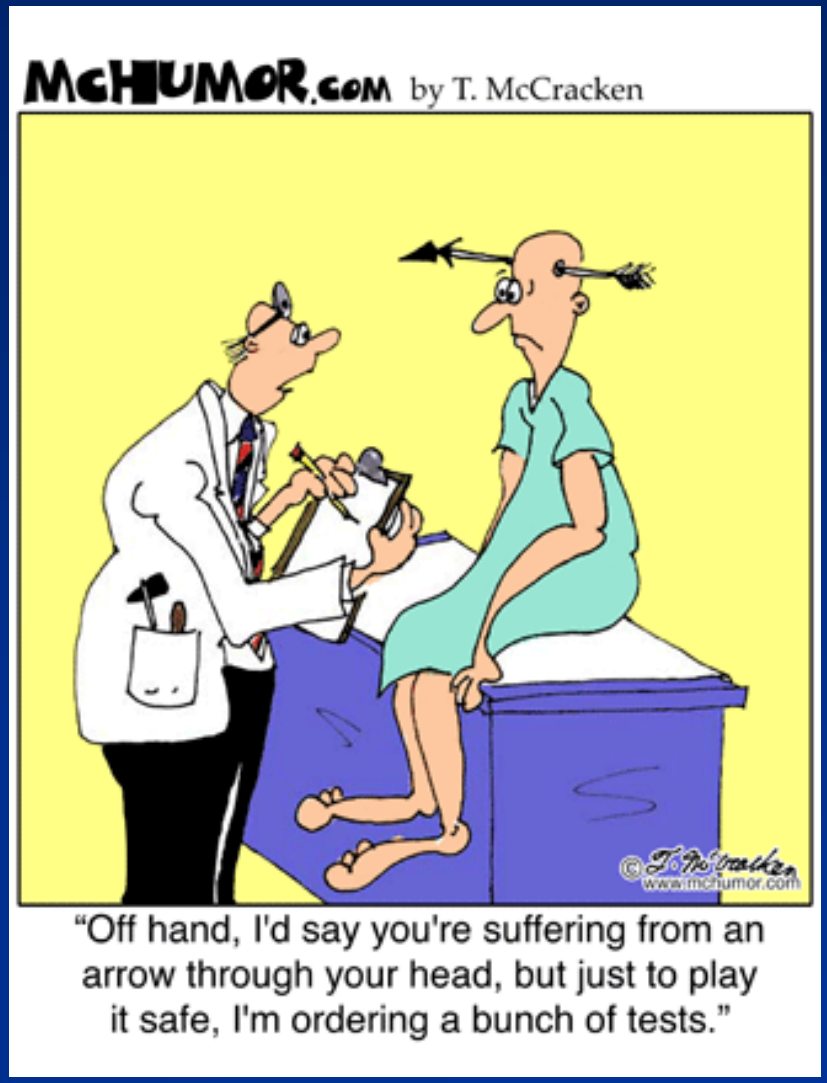
- Muscular weakness
    - active less than passive range of movement e.g. rotator cuff tear, C5 radiculopathy, suprascapular n damage
- Restricted movement in multiple directions e.g. adhesive capsulitis, OA or inflammatory arthritis in glenohumeral joint
- All movements greater than expected e.g. capsular 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



INVESTIGATIONS

- **Points**
  - Xray all pts over 40yrs of age
    - degenerative findings/incidental findings e.g. low bone density / metastatic bone disease / lung parenchymal disease
  - Good quality US
    - 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)

WHO IS THIS?