

Shoulder and Elbow An Orthopaedic Perspective

Mr. Paresh Sonsale

Consultant T & O
Heart of England NHS Trust
FRCS Tr. & Orth, FRCS Eng, MRCS Ed, M. Ch., M.S, D.Orth, BM BS

- Over 8 million people suffer from arthritis related condition
- 20% Degenerative problems
- 20% soft tissue non articular problems
- 10% patients on Waiting list do not need operation

- Rotator cuff lesions
- Glenohumeral/ capsular pathology
- Sternoclavicular joint pathology
- Acromioclavicular joint pathology
- Referred pain from neck problems
- Olecranon bursitis
- Elbow joint pathology
- Radio-ulnar joint pathology
- Epicondylitis
- Ulnar nerve entrapment

Aims

- To learn about common shoulder and elbow conditions
- Approach to patient with Shoulder and Elbow pain
- Examination, Investigations and treatment
- Compressive neuropathies

Objectives

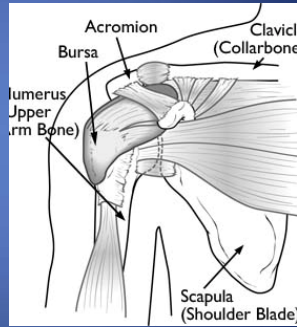
- Anatomy of shoulder/elbow joint
- Signs and symptoms
- Investigations
- Treatment options for shoulder and elbow pain

Approach to Shoulder Pain

- Assessment of shoulder pain
- Common condition of shoulder
- Tips for diagnosis
- When to inject and when not to inject

Anatomy of shoulder joint

- Complex joint
- Humerus upper end, glenoid, acromion
- Ball and socket joint
- Rotator cuff tendons/bursa
- GH, subacromial space, AC jt., SC jt., scapulothoracic



- Common symptoms in shoulder jt pathology
- Examination of shoulder joint –
- Which investigations to use – X ray, USG and MRI
- When to refer for further Treatment

..... So where do we start?

- History and Symptoms
- Examination
- Investigations
- Treatment

What are common symptoms?

- Pain
- Stiffness and/or weakness
- Instability



Pain

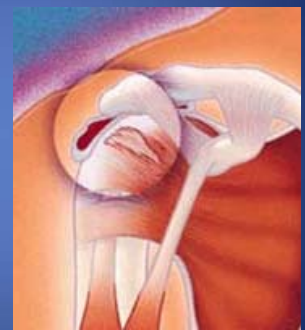
- Where – usually lateral aspect, arm
- When – activity related – Impingement, Painful arc or cuff tear
- Night pain or at rest – Frozen shoulder or Arthritis
- ADL (Dressing/Undressing) and doing hair, Driving/seatbelt or trying to reach for objects

Oxford shoulder score



Soft tissue causes of pain

- Tendinitis
- Bursitis
- Impingement



Position of arm and shoulder pain

- Above shoulder – almost all pathologies but mainly impingement, rotator cuff
- Below shoulder level – Frozen shoulder, adhesive capsulitis, Cuff arthropathy

Stiffness and/or weakness

- Reduced ROM present in most of shoulder pathologies like
 - Impingement
 - Rotator cuff tear
 - Frozen shoulder
 - OA or RA
 - Post traumatic
- Weakness due to pain or cuff tear
- If No weakness then cuff tear is unlikely

Age – common things first

AGE	Problem
15-35 yrs	Instability GH or AC joint
35-60 yrs	Rotator cuff (impingement AC joint Cuff tears, calcification) Frozen shoulder
60+ yrs	OA Cuff arthropathy tears + impingement

Examination

- Look/Feel/Move
- Impingement test
- Movement restriction
- Injections

Look

- Wasting of muscles
- Scapular winging
- Prominence of lateral or medial end of clavicle



Feel

- Cervical spine
- Peri scapular muscles
- Supra and infraspinatus muscle
- Deltoid
- AC joint
- Biceps tendon

Feel

- AC joint
- SC joint

Movements

- Active and passive
- Painful arc
- Check for ER and IR

Restricted ROM

- Check abduction and external rotation
- Reaching behind head
- Frozen shoulder or OA

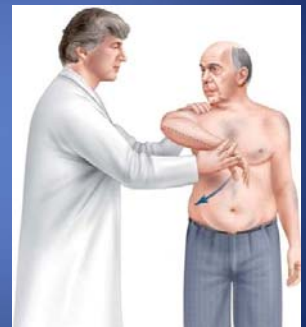
External rotation



Impingement test

Abduction and internal rotation

Forward flexion and internal rotation



Weakness

- Resisted abduction
- Cuff tear or due to pain



- Biceps tendon – resisted supination
- Tests for stability
- Neurovascular examination

Investigations

- Soft tissue: USG/MRI
- Articular or bone: X ray
- Instability: MRI

USG vs MRI

USG

- Dynamic test
- Outpatient
- One stop
- Follow up
- Guided injections
- User dependent

MRI

- Chronic tears
- Fat degeneration
- Prognostic value to predict repair outcome
- Not user dependent

Investigations

- OA, Frozen shoulder – X ray
- Cuff pathology – USG/MRI
- Dislocations or instability – MR arthrogram
- Injections – therapeutic and diagnostic

General principles

- Careful history
- Unwise to inject with in tendon
- Good understanding of anatomy of joint
- Aseptic technique – hand wash, gloves, cleaning of local area with 70% alcohol
- Infection is contraindication for steroid injection

Frequency of injections

- No more that 2-3 per year for given condition

Injection contents

- Hydrocortisone acetate 25 mg/ml
Hydrocortistab
- Methylprednisolone acetate 40 mg/ml (Depo-medrone) (No license for mixing with LA)
- Triamecelone acetonide 40 mg/ml (Kenalog)

Contraindications

- Infection
- Ocular herpes
- Acute Psychosis
- Prosthetic joint

- Pregnancy – first 16 weeks
- Prolonged repeated use in weight bearing joints
- No more than 2-3 joints at a time

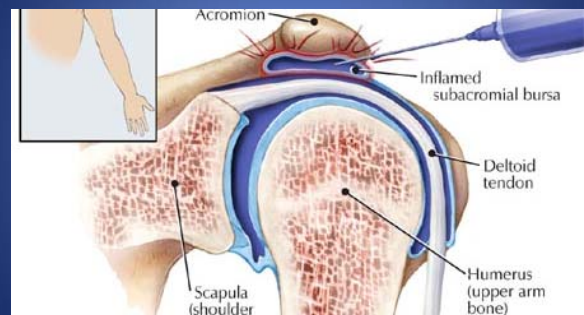
Medico legal issues

- Pain after injection
- Informed consent
- Full record

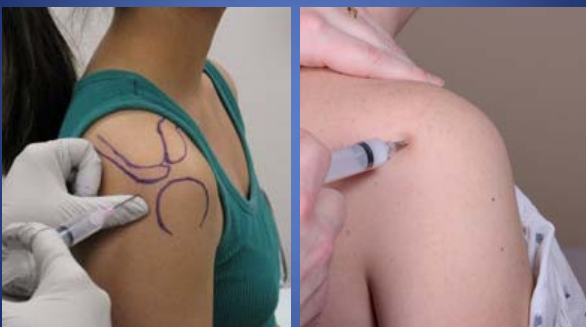
- Lipodystrophy
- Skin discolouration
- Tendon rupture

Shoulder injections

- Subacromial injection
- Glenohumeral injection
- AC joint injection
- Biceps tendon sheath injection



Subacromial injection, Neer's test



Glenohumeral injection

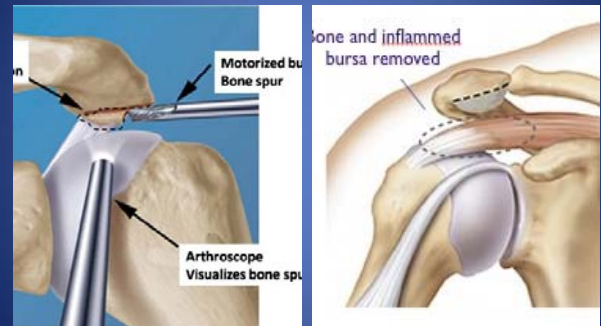
- OA
- Frozen shoulder



Impingement or tendinopathy

- Injections
- Physiotherapy
- If conservative treatment fails then arthroscopic subacromial decompression with/without AC joint excision

Subacromial Decompression



When NOT to inject?

- Cuff tear and repair planned.

Facts about rotator cuff

- Cuff tears do not heal by themselves
- Cuff tear progress
- Arthritis is inevitable following cuff tear
- Steroid injection will affect chances of cuff repair
- Patients with intact cuff have better function and ROM

What we don't know

- Rate of progression of tear
- When cuff arthropathy sets in

Advances in cuff repair

- Arthroscopic techniques
- Stronger anchors and suture materials for repairs
- Knottless anchors
- Early mobilisation

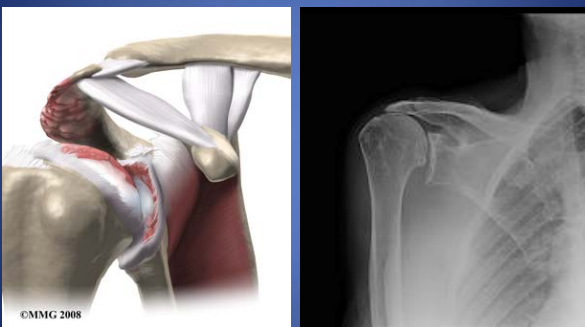
Cuff arthropathy

- Arthritis due to cuff tear
- Proximal migration of humeral head
- Erosion of under surface of acromion

Arm drop test



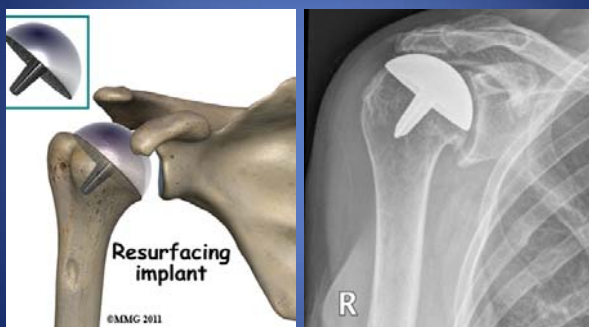
Cuff arthropathy



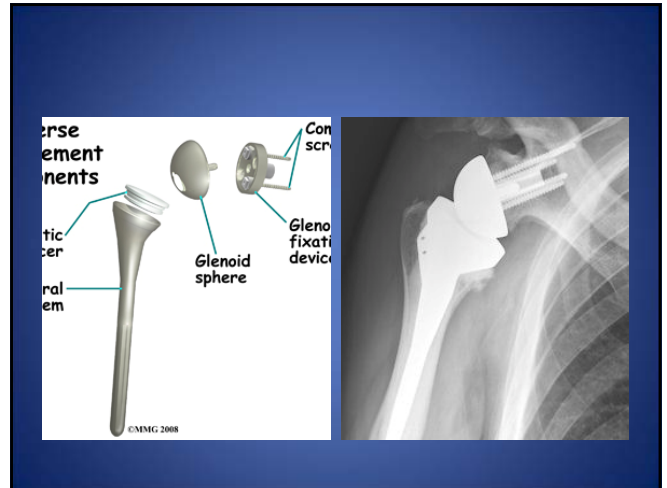
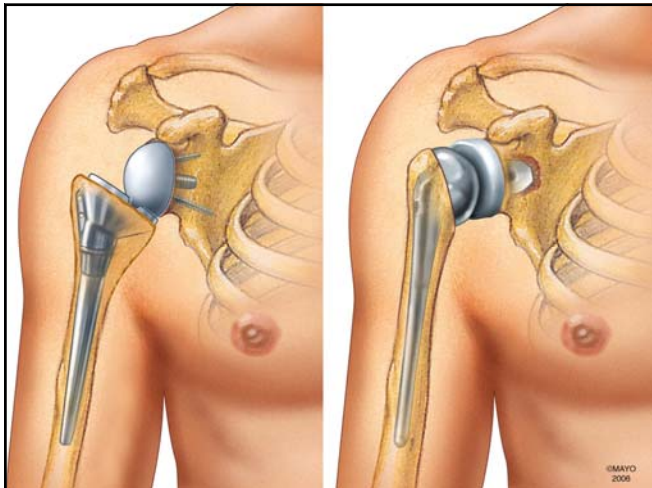
Arthroplasty



Reverse shoulder replacement



- Ball is where socket should be – in glenoid
- Socket is on the side of humeral side



Adhesive capsulitis

- Glenohumeral injection
- Capsular hydrodistention
- Manipulation under anaesthesia (MUA) + injection
- Arthroscopic capsular release

Arthroscopic capsular release

Arthritis

- NSAIDS
- Physio
- GH injections – steroid or symvisc/ostenil

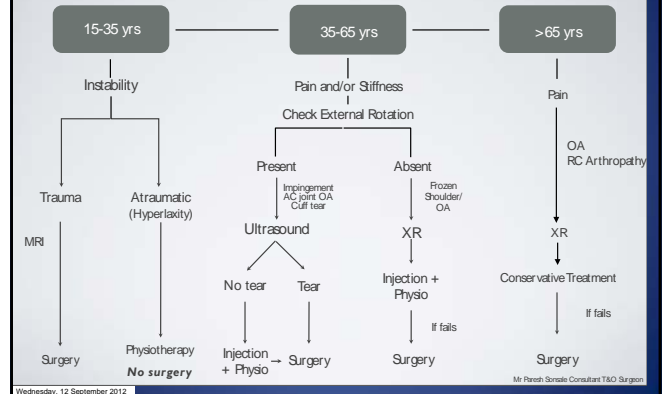
Joint replacement

Total shoulder Replacement



SHOULDER PAIN

Age and symptoms flowchart



Summary

- Usually a working diagnosis at the end of history
- Symptoms – Pain, Stiffness and or weakness affecting ADL or instability
- Investigations USG/X ray/MRI
- Arthroscopic treatment if conservative treatment fails.

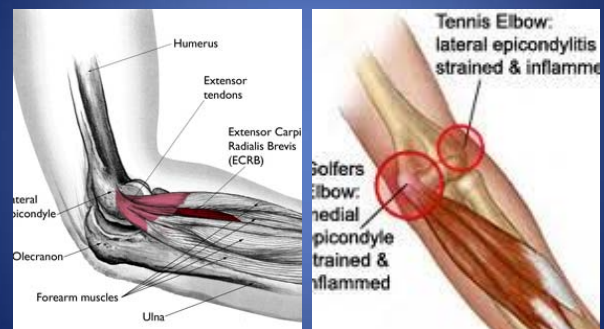
Approach to Elbow pain

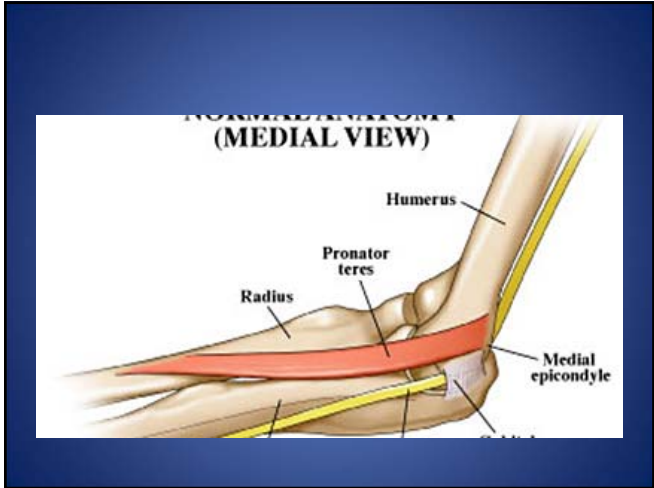
- Anatomy
- Symptoms – pain, weakness of hand , sensory deficit

Anatomy




Tendinopathy around elbow





Tennis Elbow

- Local tenderness
- Resisted dorsiflexion of wrist and fingers
- Milch's test – forced pronation and flexion of wrist



...e above demonstrates the most common
of tennis elbow and the exam technique
...e pain worse with resisted wrist extensio

Grip test and Milch test




Treatment

- Rest
- NSAIDS
- Modification of activities
- Physiotherapy
- Brace
- Steroid injection
- ESWT

Brace or ESWT




Surgery

- Lateral release – open
- Arthroscopic

Golfer's elbow

- Pain on medial aspect of elbow
- Resisted flexion of wrist and fingers

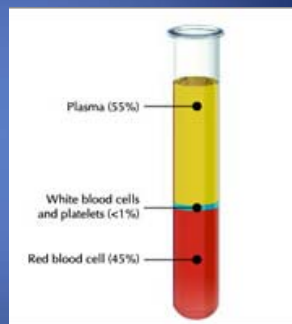
Biceps tendinopathy



- Local tenderness
- Resisted supination PF

Treatment

- Rest
- NSAIDS
- Physio
- PRP injection



PRP injection



Olecrenon Bursitis

- Swelling over olecrenon
- Fluctuant/soft/cystic
- Aspiration and/or injection
- Surgical excision

Aspiration



Surgical excision



Ulnar neuropathy

- Irritation or compression of ulnar nerve at elbow
- Sensory or motor symptoms in hand

Ulnar neuropathy causes

- Iatrogenic
- Direct trauma
- Elbow fractures
- Synovitis /Arthritis of elbow joint - RA

Symptoms

- Tingling and numbness of LF and RF
- Weakening of grip and difficulty of finger co_ordination
- Weakness of small muscles of hand/ hypothenar group of muscles and interrosei
- Froment's test

Signs

- Wasting of muscles
- Tinel's Sign
- Sensory loss
- Froment's sign
- Weakness of interrosei



Compressive neuropathy



Investigations

- EMG/NC – check for Guyon's canal
- X rays

Treatment

- Surgical decompression
- With or without transposition
- Surgery to prevent deterioration of symptoms

Ideal set up

- Orthopaedic/Rheumatology clinic
- Ultrasound facility
- EMG/NC facility
- ESWT
- Physio
- Orthotic facility

- Injection course
- USG guided injection clinic
- EMG/NC clinic

Thank you