FROZEN SHOULDER—MYTHS & FACTS

Dr. RAMAN KANT AGGARWAL
M. S., MSc. (Tr. & Orth., UK)
Shoulder/ Sports Injuries
& Joint Replacement
Orthopaedic Surgeon
www.treatmyshoulder.com
Email: shouldersurgery.in@gmail.com, Mob: +91 99580 36789

- What is Frozen Shoulder

  OR

- Peri-Arthritis of the shoulder

What do you feel?

- Extreme pain
- Cannot sleep in the night
- Any jerk produces excruciating pain
- Cannot reach your back for personal hygiene or dressing up
- Medicines, physio-nothing seems to work
- Physio session is extremely painful
- It’s taking very long and still no relief

FROZEN == STIFF

- Actual Stiffness: Both active and passive movements equally restricted ==

  FROZEN SHOULDER

  POST INJURY / SURGERY STIFFNESS

  ARTHRITIS (OA, RA, CTA, AVN, Post-traumatic arthritis)
- Passive movements more than active = Rotator cuff disease

What we need to establish?

- Are the movements restricted because of pain OR are you guarding the shoulder e.g. in rotator cuff tears, you will avoid lifting the arm because of pain whereas in frozen shoulder, you just cannot lift it because its jammed!!
- Impingement & Labral injuries DON'T produce stiffness
- If shoulder is really stiff, then:
  - Frozen shoulder (Adhesive Capsulitis)
  - Locked Posterior Dislocation
  - ARTHRITIS OF THE SHOULDER IS THE ONLY TRUE DIFFERENTIAL DIAGNOSIS

LACK OF CONSENSUS

a) DuPlay (1872) >> Peri-Arthritis
b) Codman (1934) >> Frozen Shoulder
c) Reeves & Nevasier (1945) >> Adhesive Capsulitis
d) Simmonds (1949)>> Leathery cuff, no demarcation between tendons
e) DePalma (1952), Ozaki (1989) & Neer (1992) >> All identified contracted CHL & Rotator Interval
f) Lundberg (1969) >> Classified it into
Primary
Secondary

Consensus

- Primary Frozen Shoulder *aka*
  ADHESIVE CAPSULITIS

- Secondary Frozen Shoulder

  Intrinsic: Shoulder pathologies

  Extrinsic: Includes Associations

ADHESIVE CAPSULITIS/ FROZEN SHOULDER

- ESSENTIAL CRITERIA (Matsen et al):

1) No H/O Injury
2) No H/O Surgery
3) Global restriction of Active & Passive Movements
4) Normal TRUE AP & Axillary views on X-rays

Associations

- Diabetes Mellitus
- Hypo / Hyper thyroidism
- Cardiac pain / catheterisation
- Breast Surgery
- Surgery around shoulder
- Tumours

Aetiologies:

- Collagen vascular disorders
- Infectious Arthritis
- Crystal Deposition Disease
- Spondylo-arthritides & AS
- Haemoglobinopathies
- Suprascapular Nerve Palsy
- Autonomic Neuropathy
- Rotator Cuff tendon degeneration
- Trauma & Immobilisation
- Hysteria & Hypochondriasis
- **Cytokine induction of Fibroplasia**

Pathology

- Riedel, Lundberg and Nevasier identified capsular thickening and inflammation.
- Based on pathology of capsule:

  Three possible mechanisms identified:

1) Peri-vascular Infiltration
2) Fibroblastic proliferation
3) MMPs
4) Cytokines (B-TGF, PDGF & HGF)

PATHOLOGY

- Similarity with Dupuytren's Disease histologically **but** Differs markedly as:

- Adhesive capsulitis is extremely painful but Dupuytren's is not.
- Adhesiver capsulitis does not re-occur whereas Dupuytren's contracture has got very high recurrence rate

CURRENT THINKING

- Cytokines, Vascular Endothelial GF in Diabetic Frozen Shoulders
- Initiating event could be a stretch of the CHL
- MMPs may have a role

DIFFERENTIALS

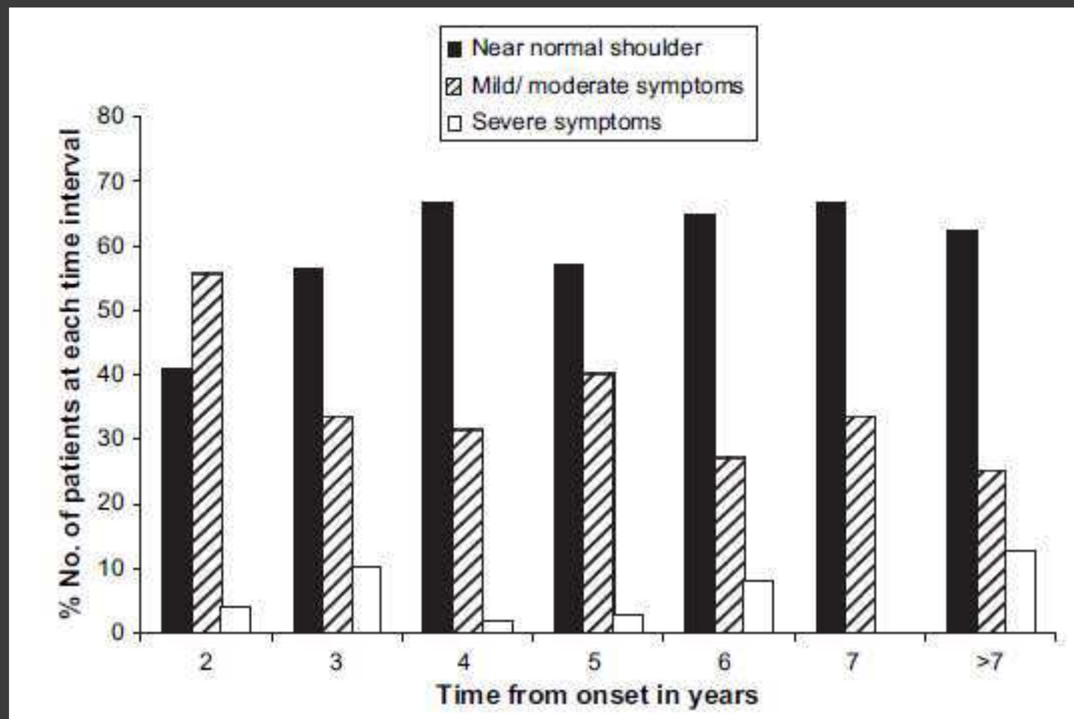
- Rotator Cuff Disease
- Arthritis
- Post-Traumatic stiffness
- Calcific Tendinitis

Frozen Shoulder Vs Cuff Disease

- Active and Passive BOTH movements restricted in all planes
- Normal X-rays
- Normal Cuff
- Recovers

- Passive movements MORE than active
- Sourcil sign, upward migration of head
- Diseased Cuff
- Progresses

What happens if we don't get any treatment for frozen shoulder



JSES, March/April 2008, Longest Study on Natural history of Frozen Shoulder i.e. if left untreated (no medicine, injection, physio or operation)

So who does not improve soon ??

- Female gender
- Severe symptoms in first 6 months
- Diabetics

Facts:

- Recovers in 60-90 % pts.
- Diabetics have it up-to 40%
- Does not re-occur
- Pathology still not established with cause and effect relationship
- Behaves differently from post-injury and post – surgery stiffness

MANAGEMENT

- Freezing phase: G-H Inj of Steroid
  Self Shoulder Stretches
- Frozen Phase : MUA
  Arthroscopic Release
- Thawing Phase : Gentle shoulder
  Stretches

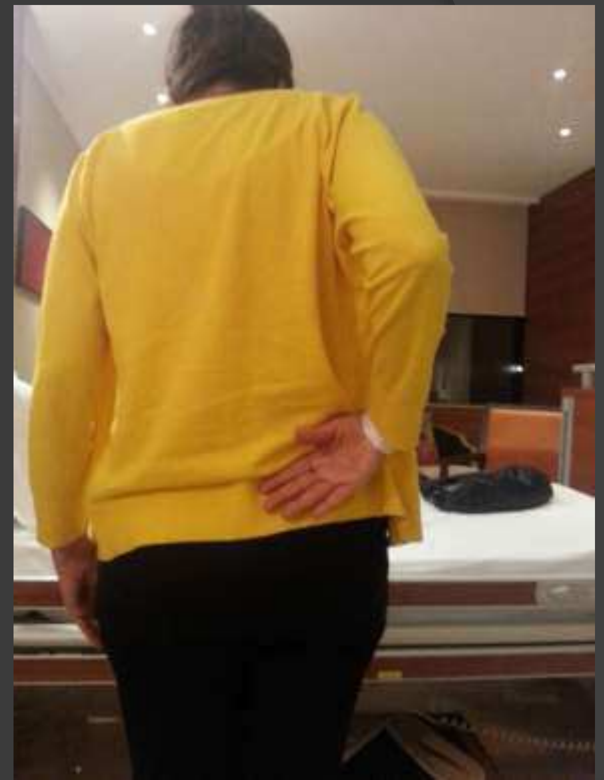
Indications for Intervention

- Very severe pain from the beginning
- Both sides involvement
- Diabetics
- No improvement in 6 months
- Pain has decreased and stiffness is a concern

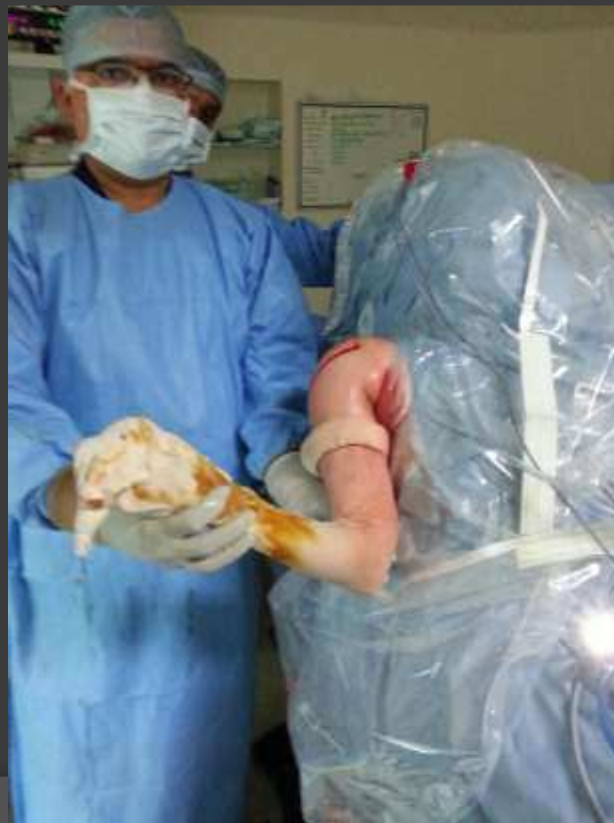
MANIPULATION

- Great tool in management of Mild to Moderate frozen Shoulder
- Always follow **Short Lever Arm** principle
- Apply **Codman's paradox** to correct Rotations
- Beware of producing fractures/ labral or cuff tears

B/L Frozen Shoulder



Arthroscopic Capsular Release

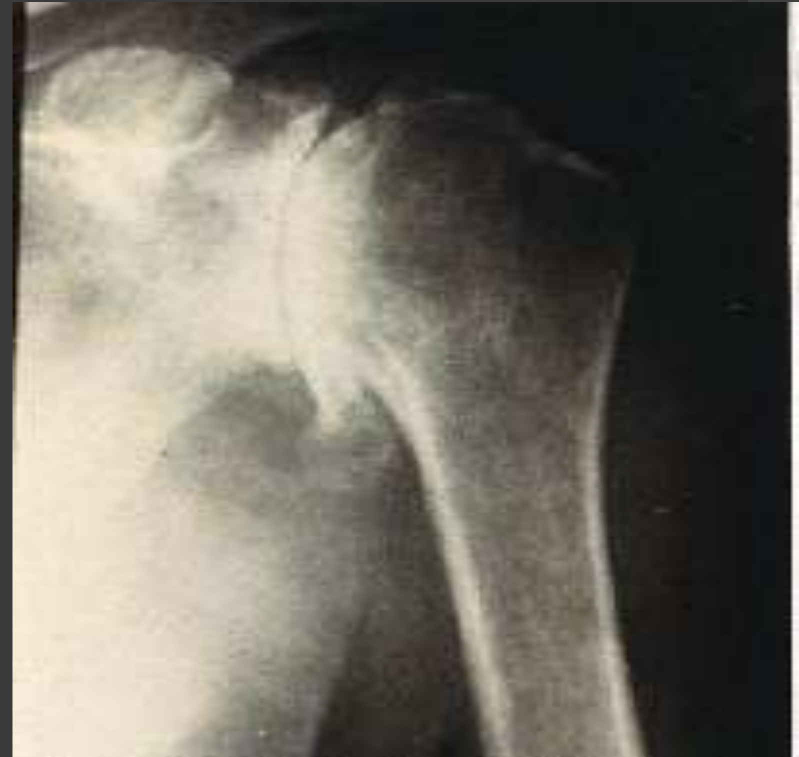


Very first Day After Key Hole Surgery for Frozen Shoulder

The relief and Joy of lifting the arm up, reaching out for things
and being able to reach your back for dressing up---cannot be measured!

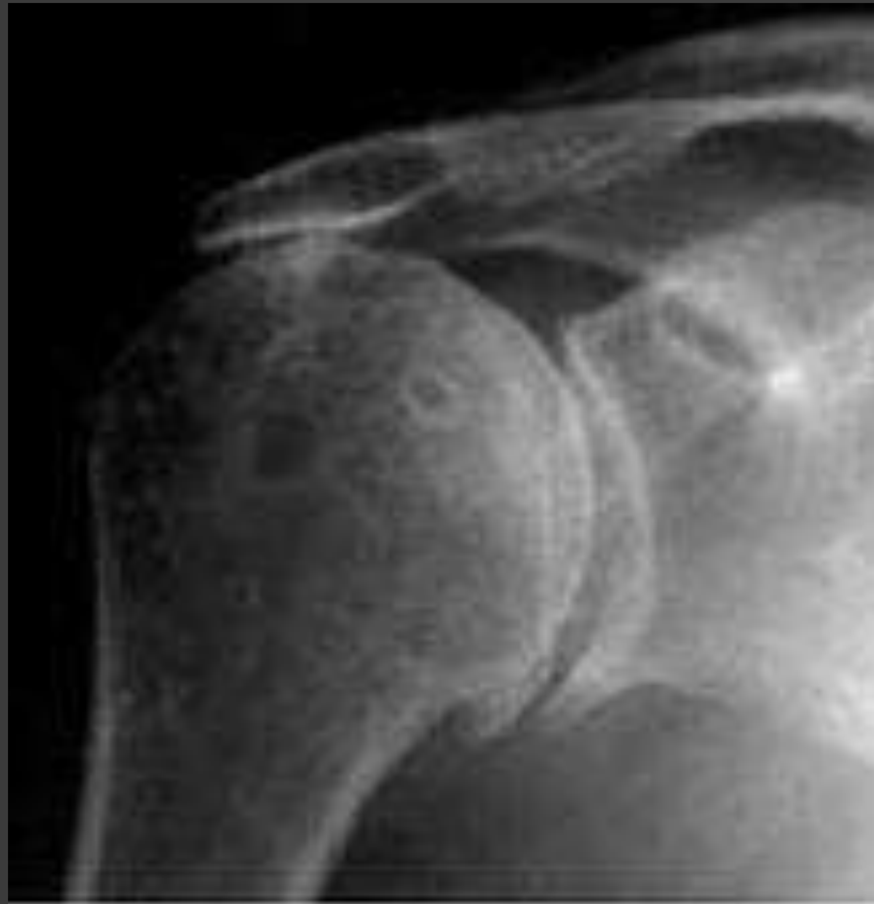
Frozen Shoulder Vs. Arthritis

Normal X-ray –True AP view

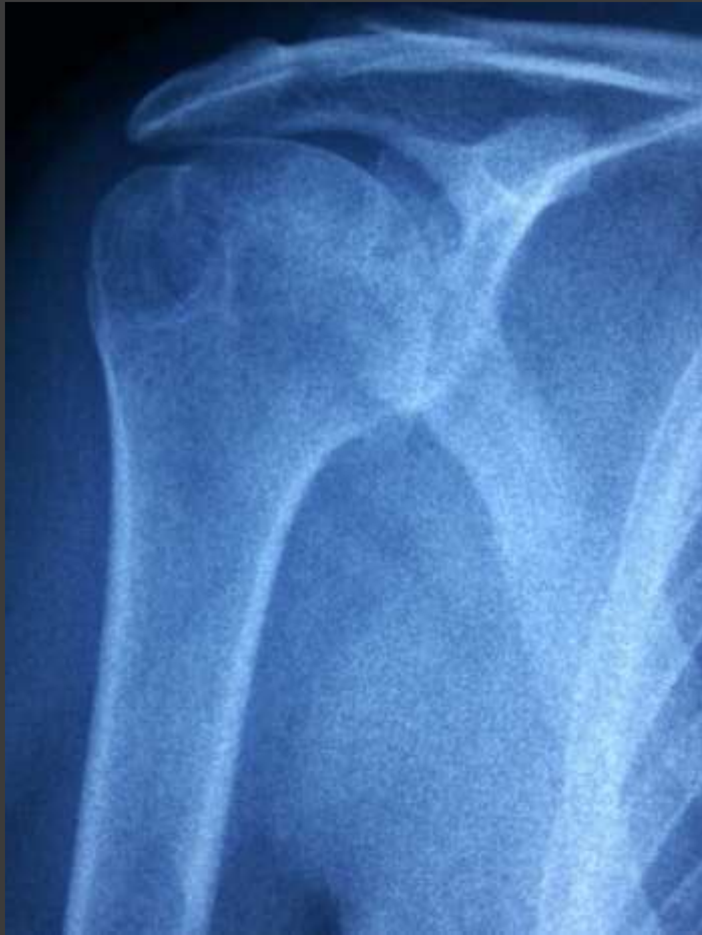


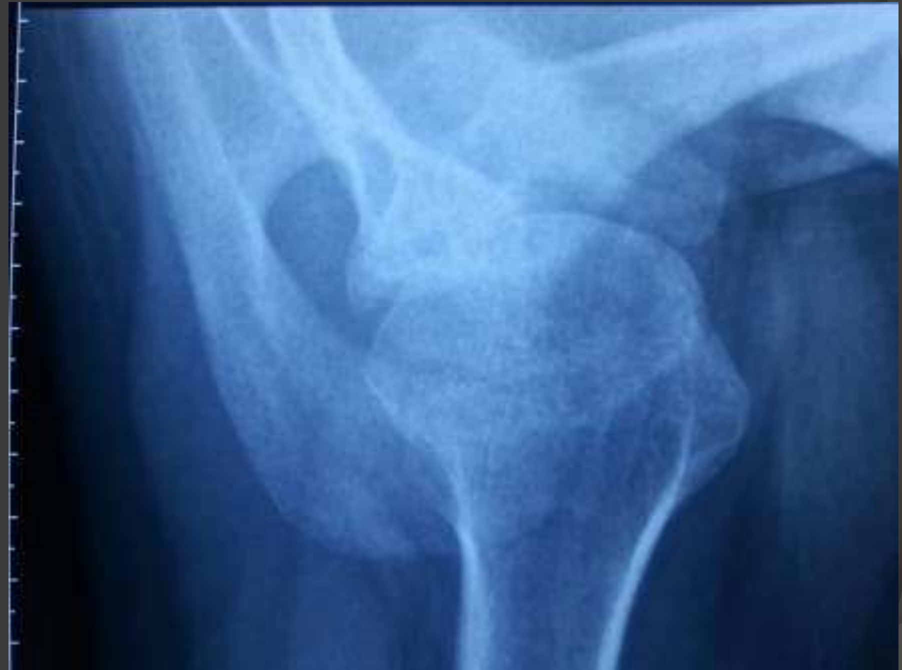
Primary OA of shoulder

FROZEN SHOULDER ??

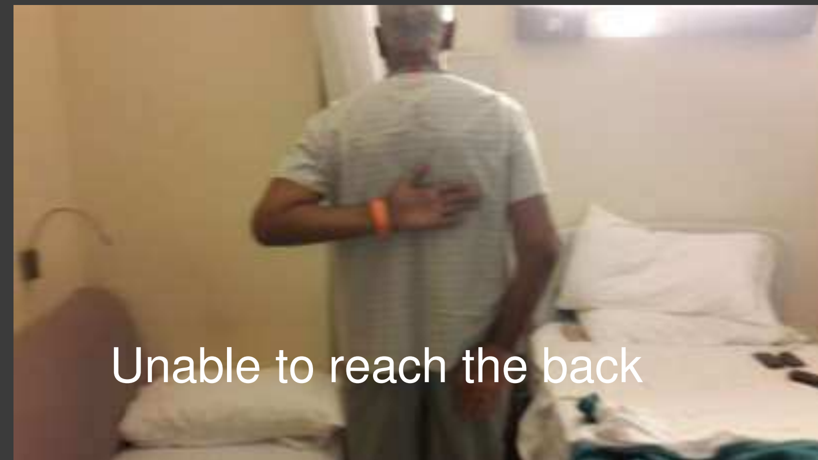


What do you think it is? Not Frozen Shoulder BUT Rheumatoid Arthritis

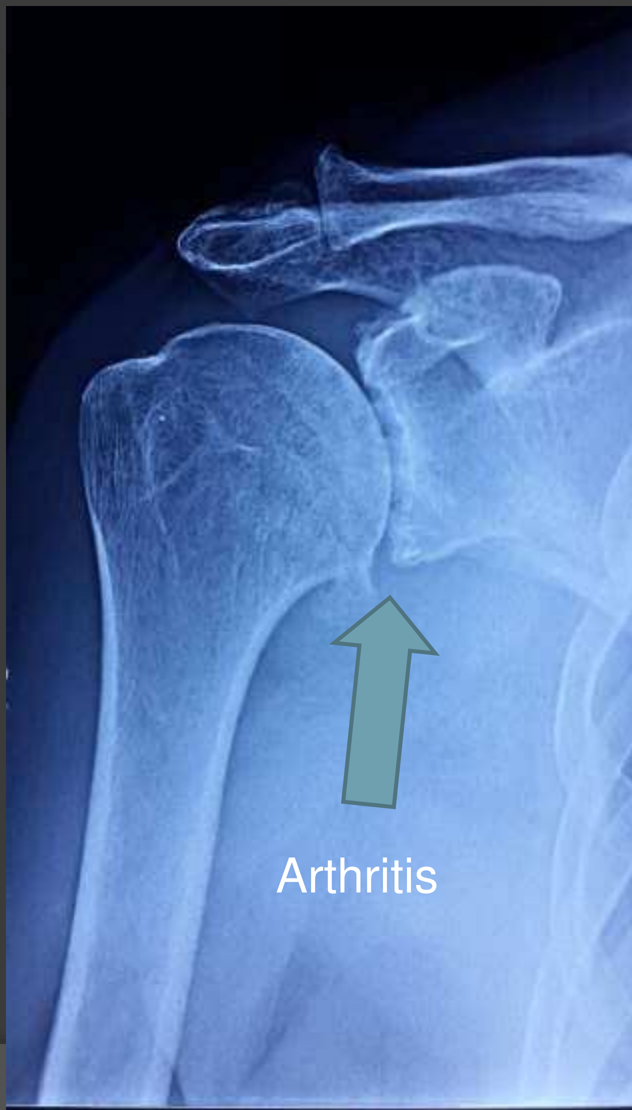




62 years young man, wants to lift his grand-children



62 years young man, wants to lift his grand-children—Not Frozen Shoulder But ARTHRITIS



75 years fit man, painful, stiff shoulder for 5 years

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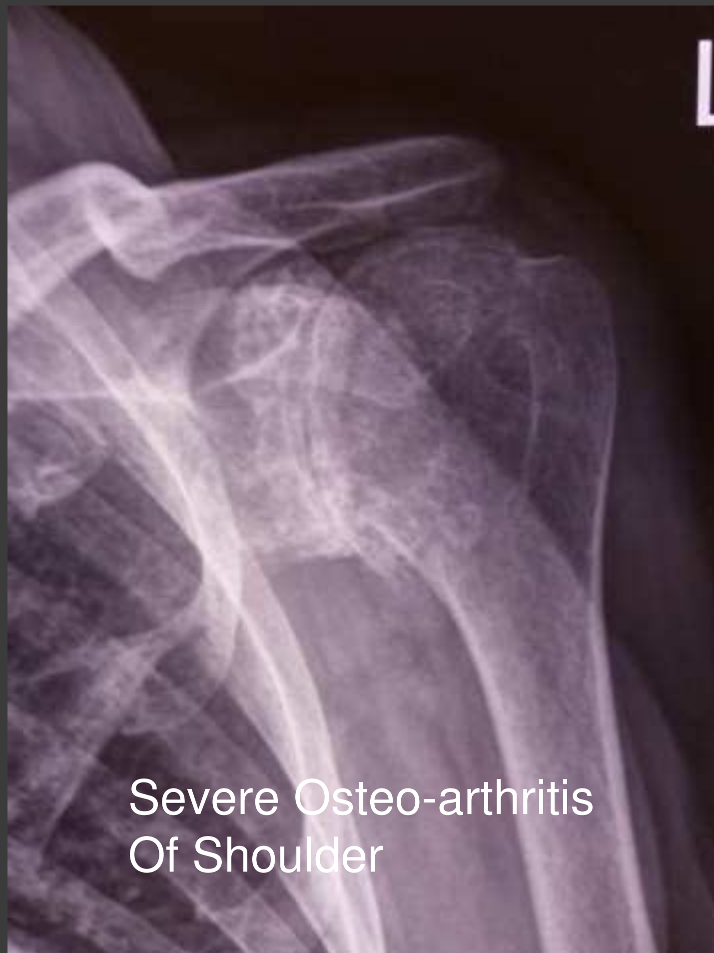
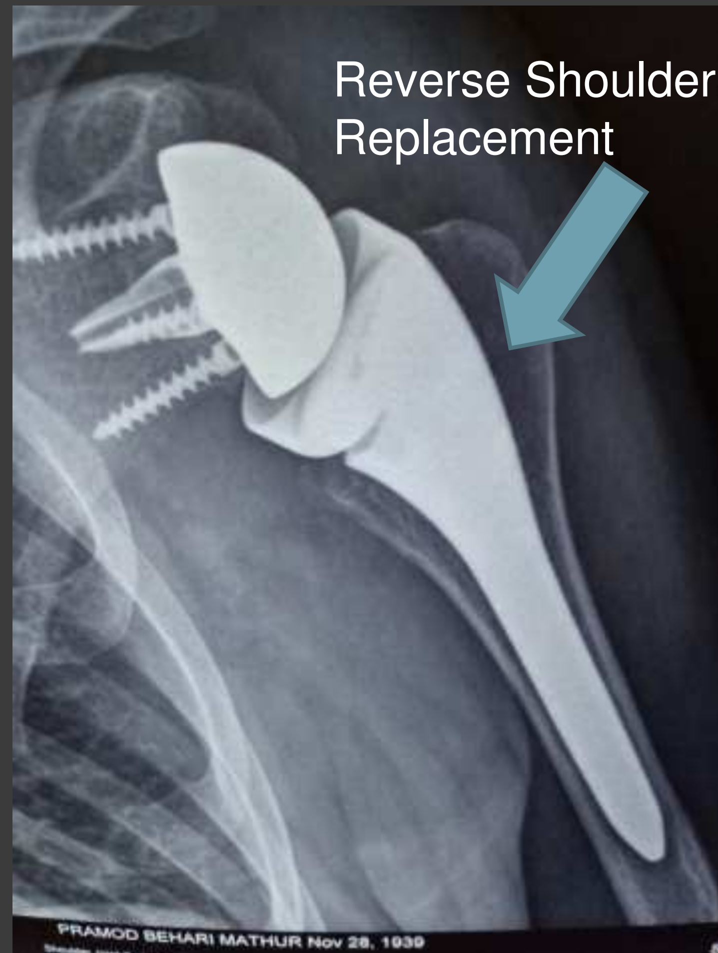
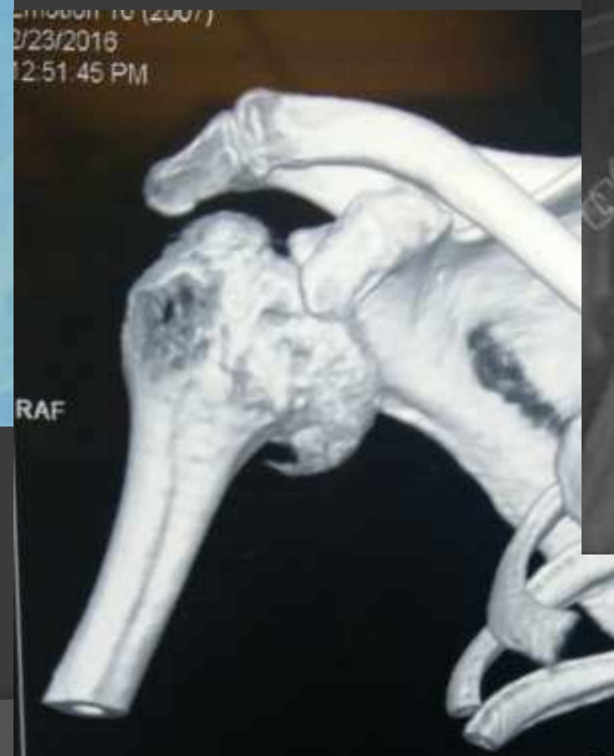


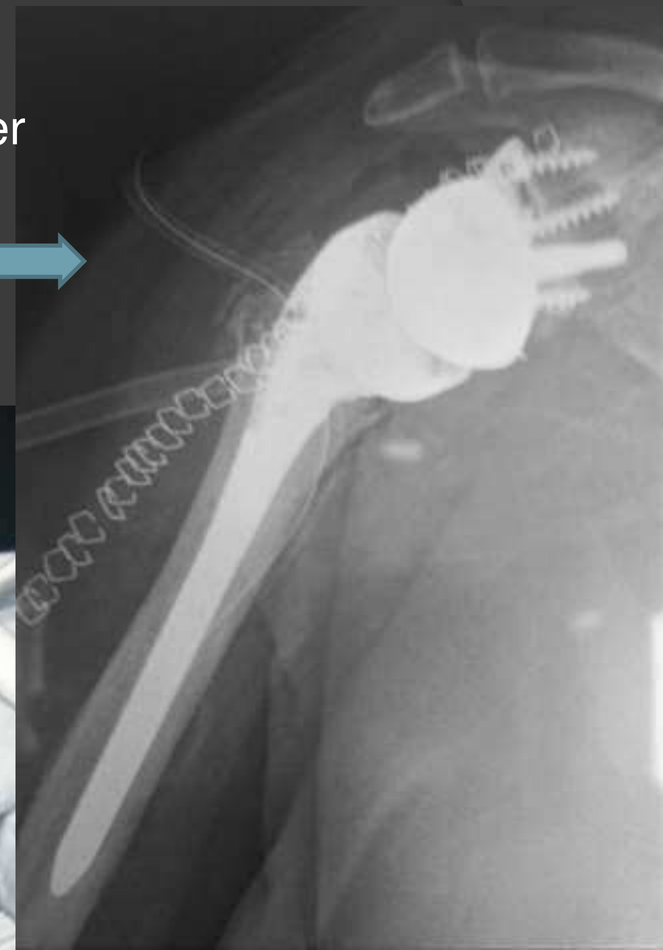


4 months post-op

75 Years old, 10 years h/o Frozen Shoulder

Reverse Shoulder Replacement





TAKE HOME MESSAGE

- STRICT diagnostic criteria
- PICK UP the associations
- IDENTIFY difficult patients early
- PROPER MUA Technique
- Severely stiff (IR contracture)—Arthroscopic Release

- DONT MISS:
  - Arthritis
  - Rotator Cuff Disease
  - Calcific Tendinitis

- AVOID :
  - MUA in elderly
  - Excessive force
  - Aggressive P T in freezing phase