

# CLAVICLE & AC JOINT INJURIES

**DR ANURAG TIWARI**

*MBBS (MAMC), MS Ortho (MAMC), DNB, MNAMS*

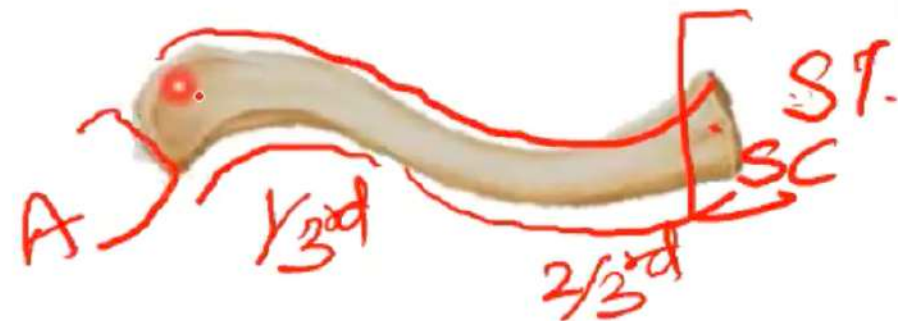
*Fellow, Joint Replacement (University of Missouri, Columbia, USA)*

*Assistant Professor, Gandhi Medical College, Bhopal*





# Relevant Anatomy

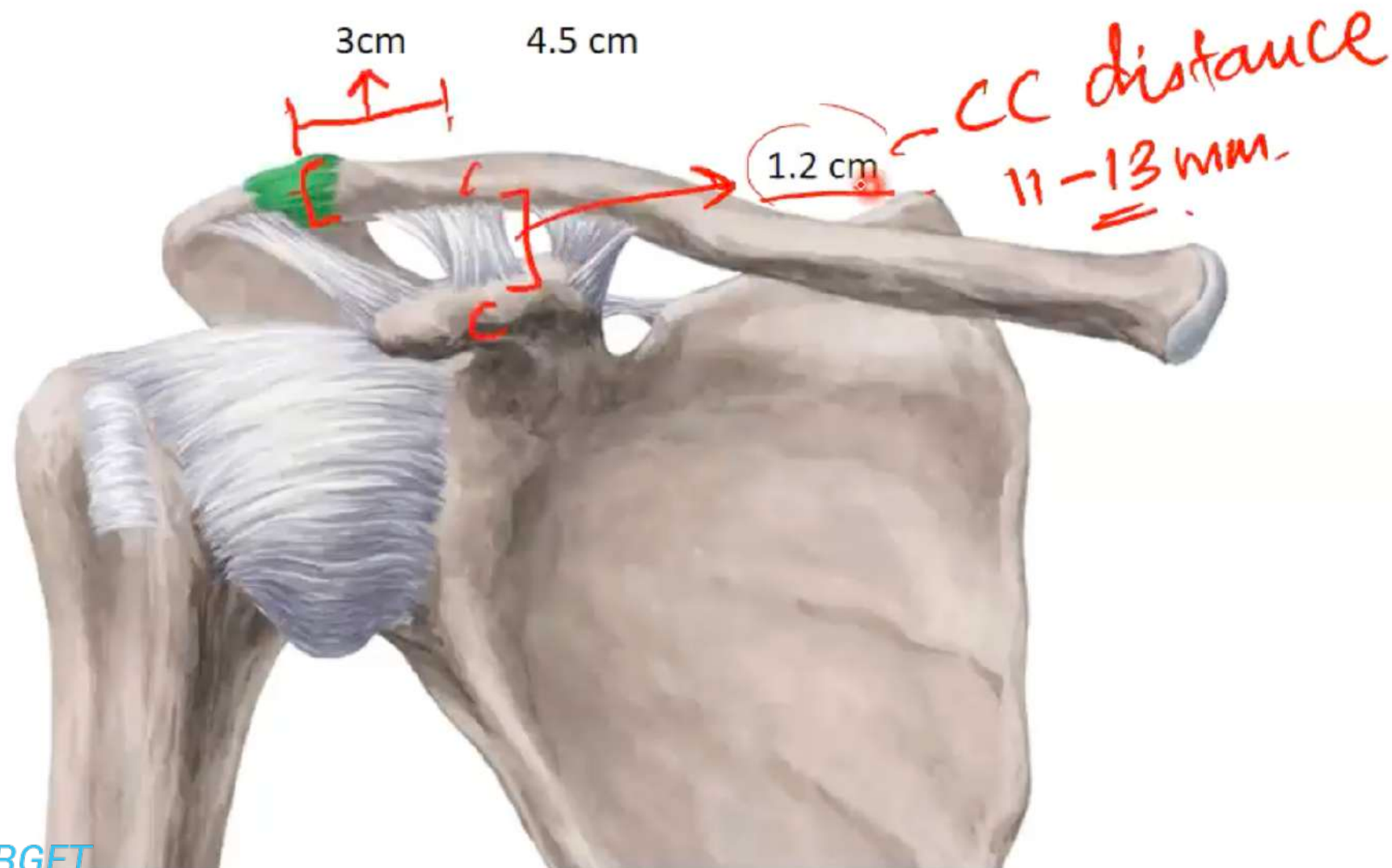


# Relevant Anatomy



ST.  
SC

2/3



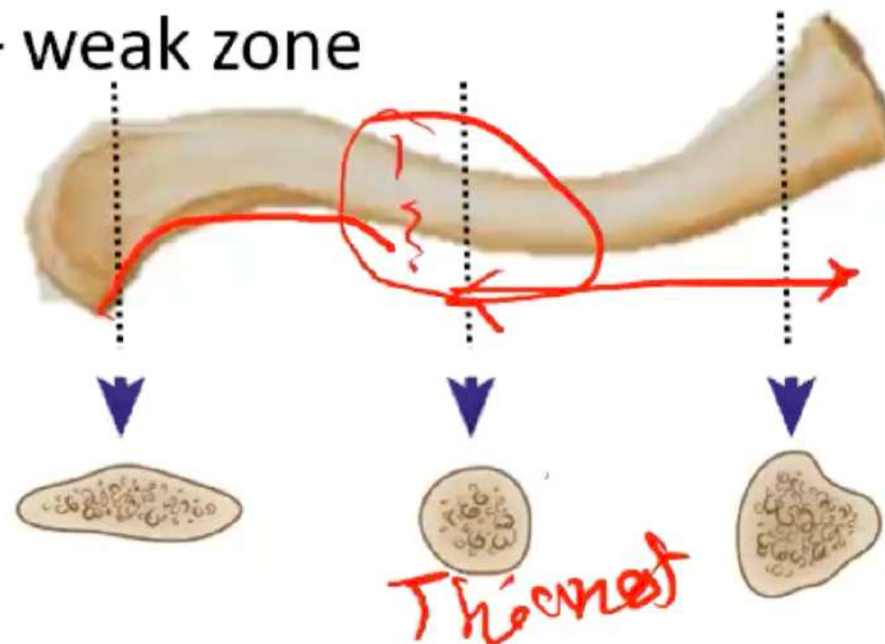
# Important facts about Clavicle

- Only long bone lying horizontal
- 1<sup>st</sup> bone to start ossification and last to complete ossification
- Only long bone to ossify by intramembranous ossification

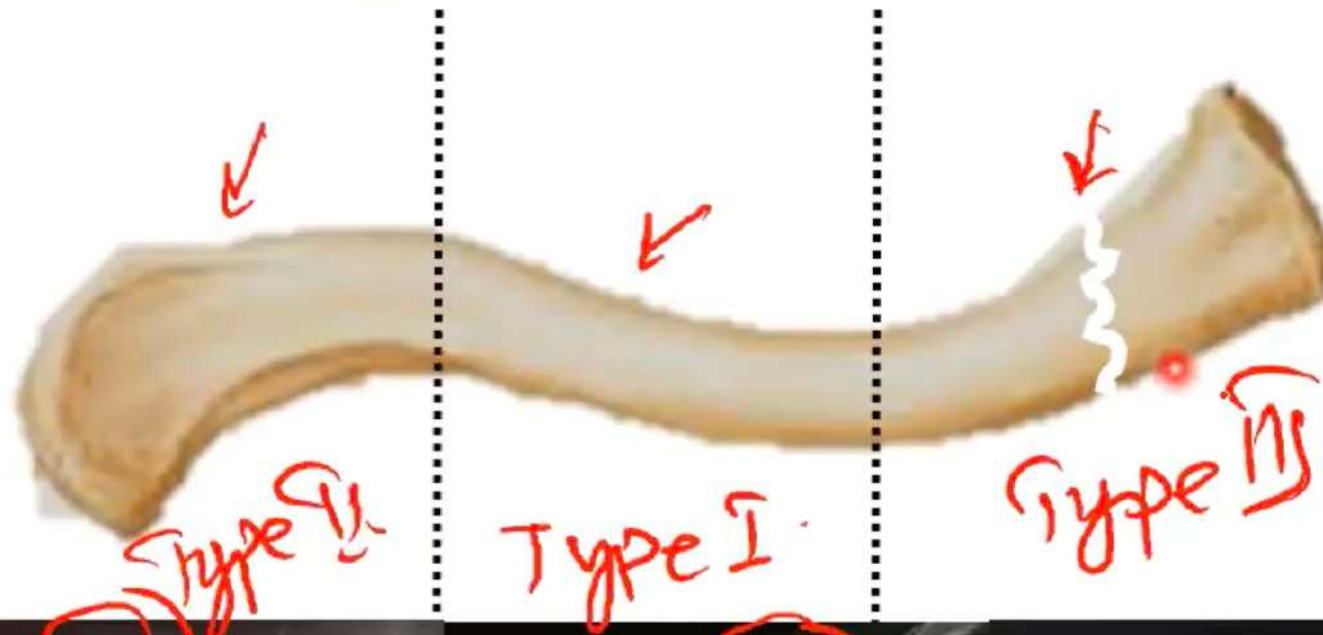
# Why Middle third common??

mc site -

- Junction region
- Narrow cross section of the bone (thinnest bone)
- Least soft tissue envelope
- Nutrient artery enters – weak zone



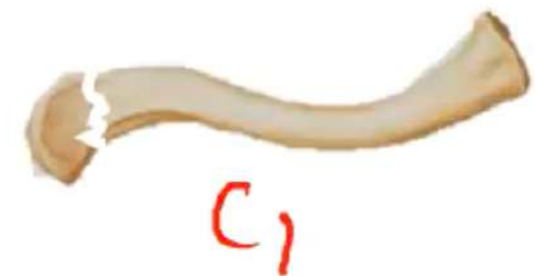
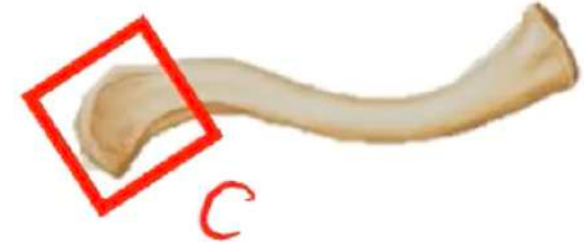
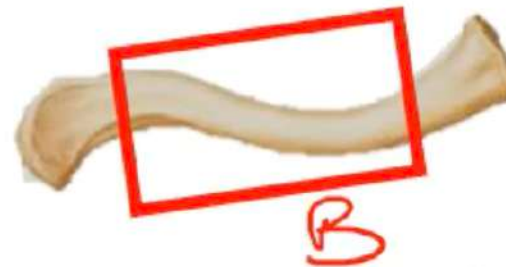
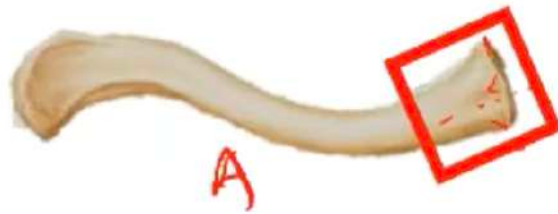
# Classification



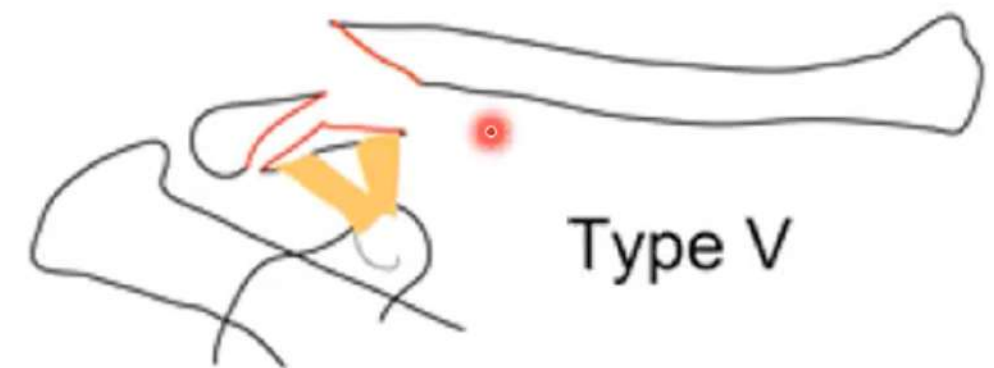
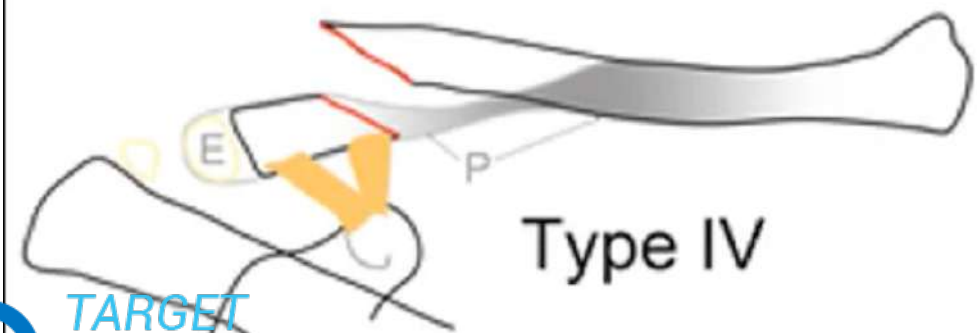
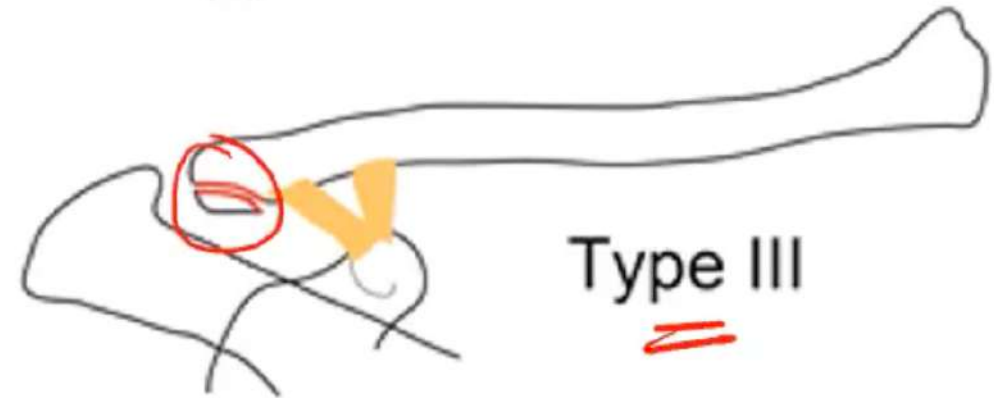
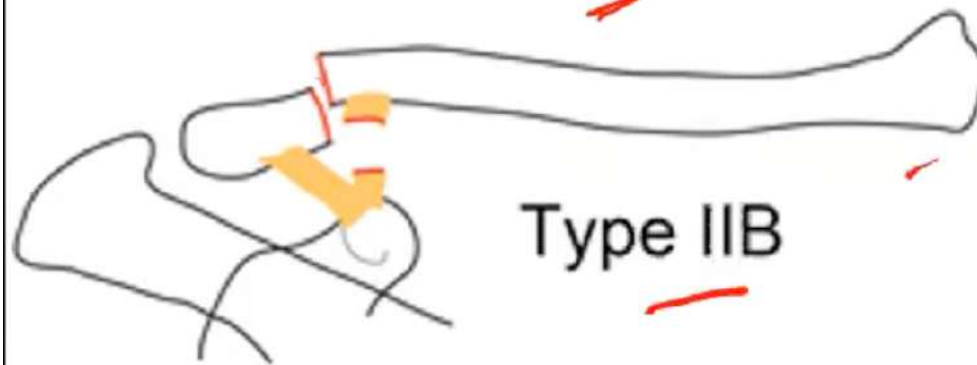
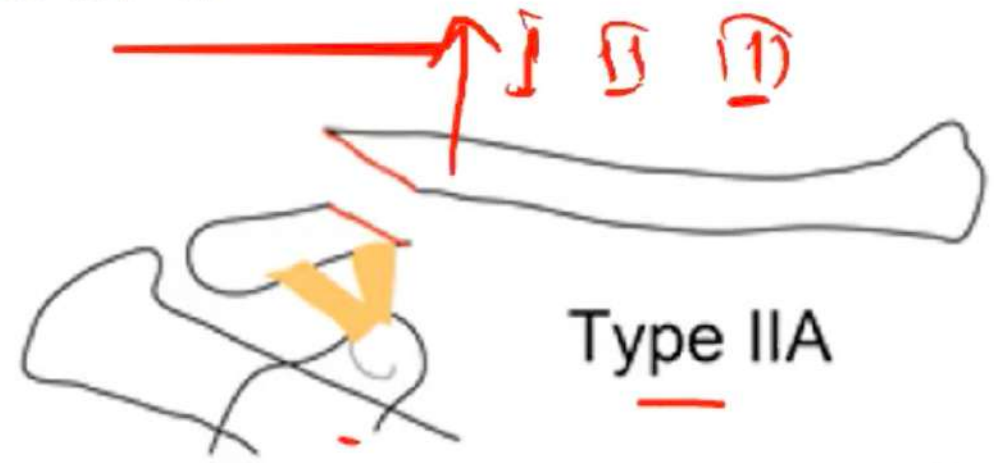
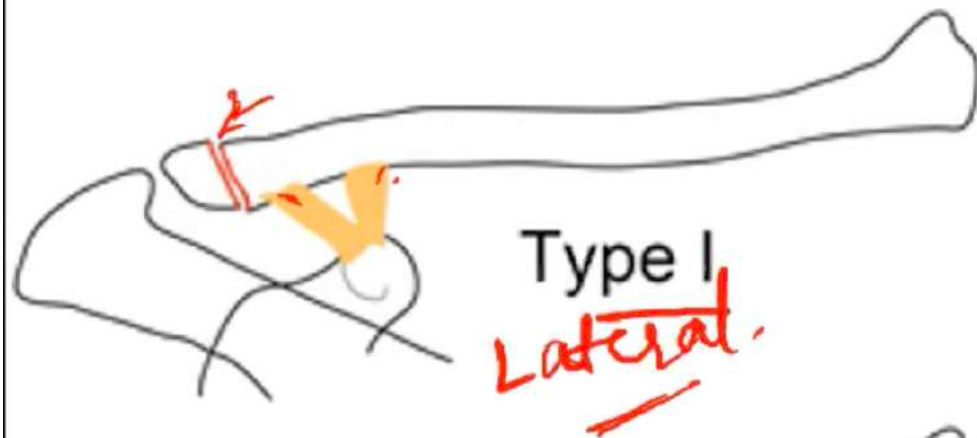
Allman  
· Craig  
Robinson  
AO .



AO  
-



# Lateral end clavicle- Neer's



# Mechanism of injury

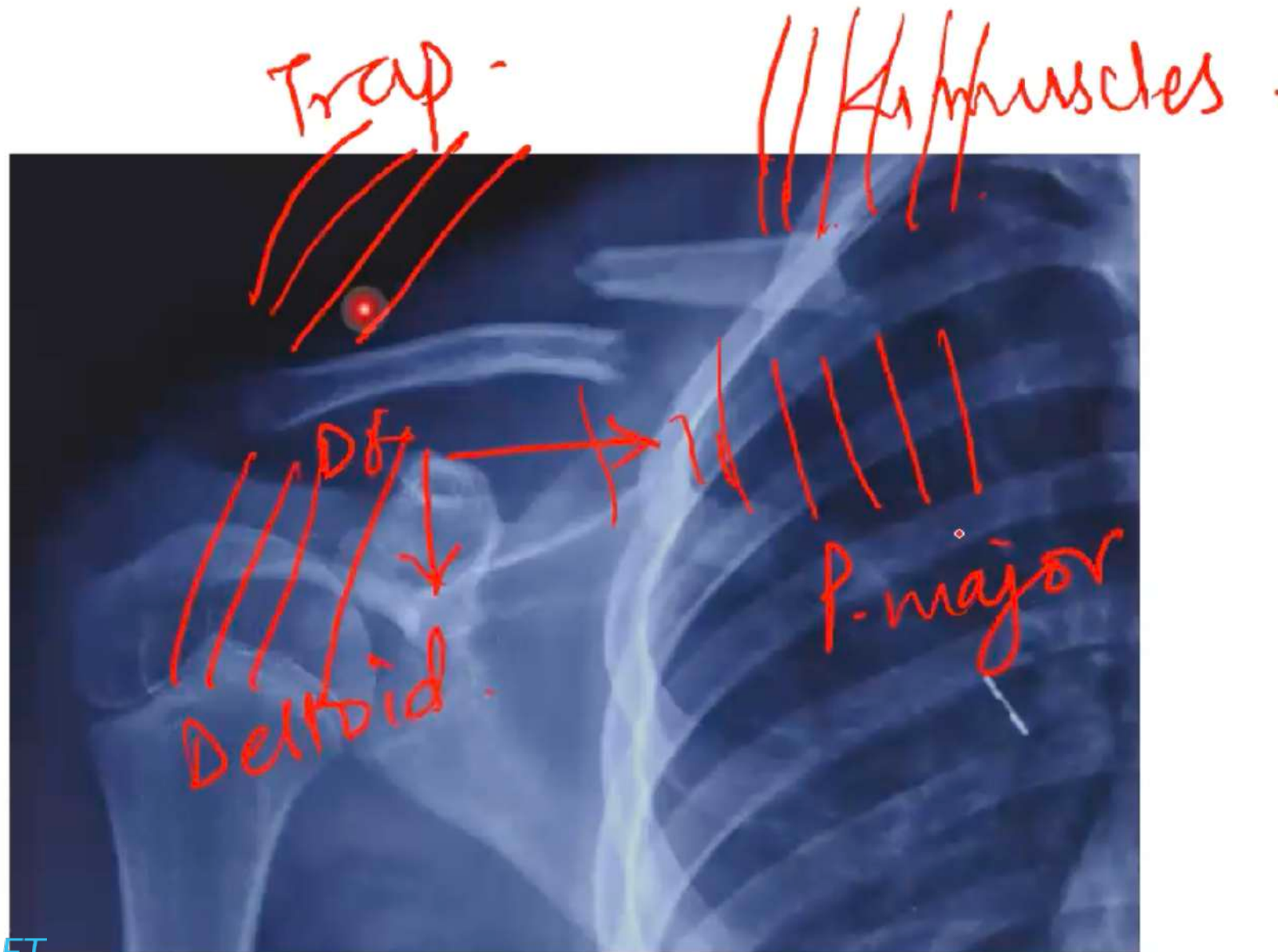


↑  
Direct fall

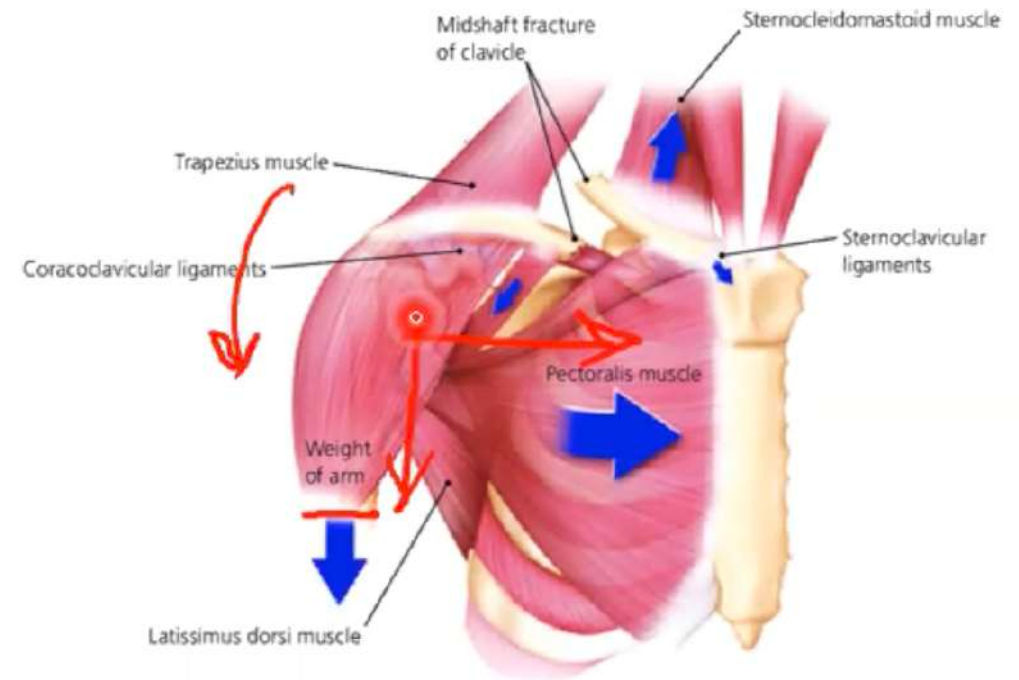
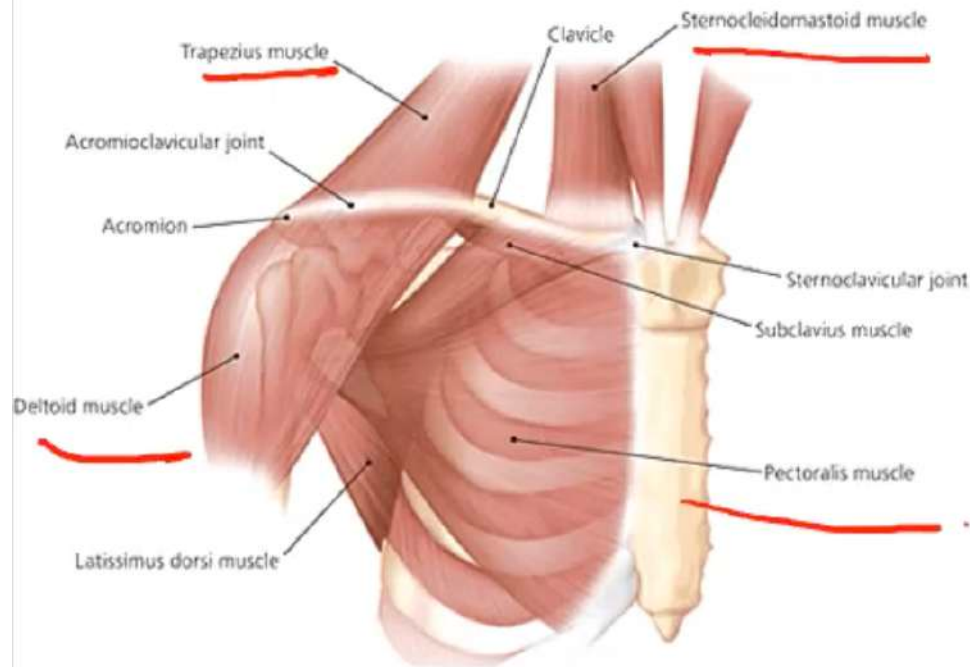


FoOSH

# Displacement



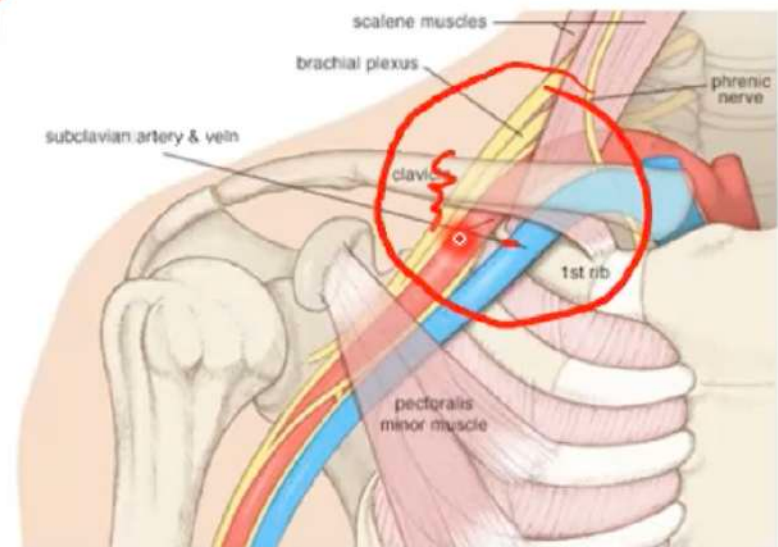
# Displacements



# Clinical presentation

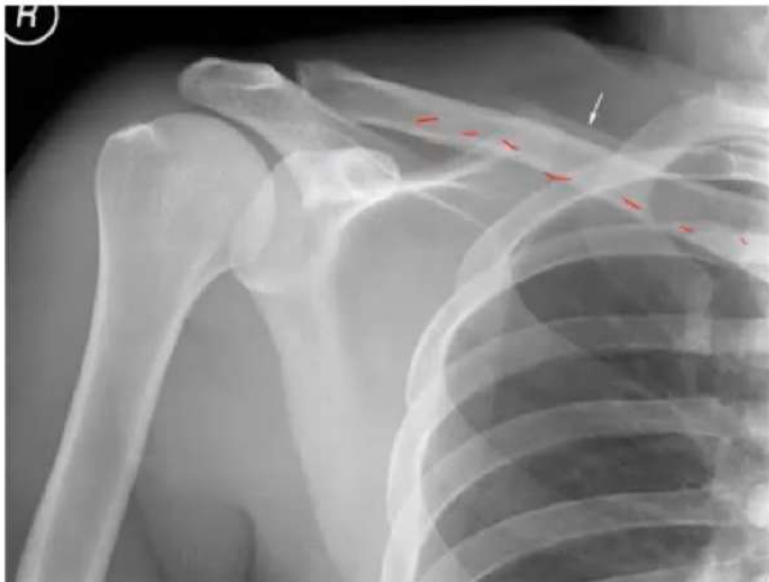
him, swelling, D.C, T,  
Polytrauma/Unconscious -

Sharp.

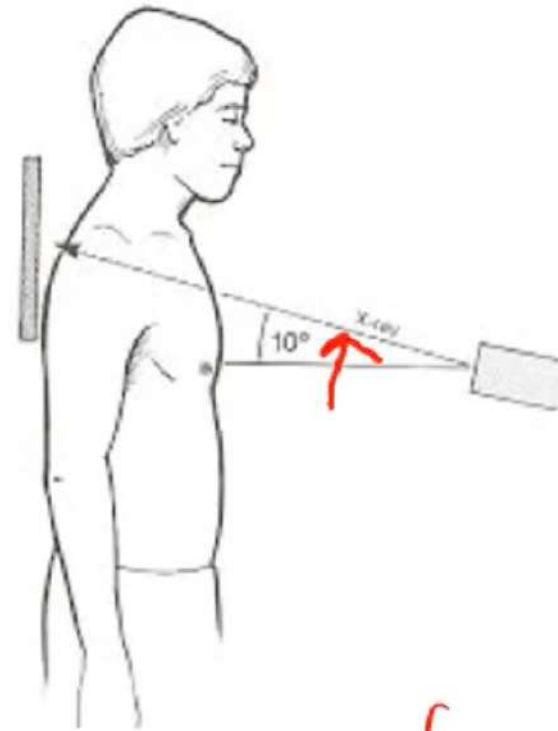


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# Xray



AP -





- Classification ✓
- Comminution ✓
- Displacement ✓
- Shortening ✓

# Treatment

- Non operative



→ Sling Vs clamcun  
fig. of 8.

- CR.X

- Operative

(Selected)



ORIF Plate/screw.

# Indications of surgery



Displ. > 2cm  
=



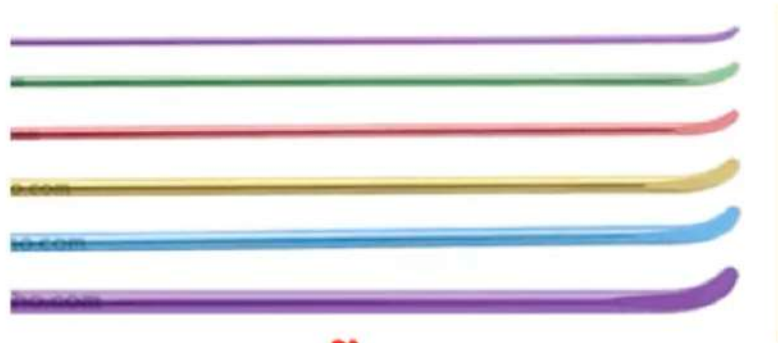


Floating Shoulder

Open  $\pm$   
A-V injury - skin  
Impending  
Breach



- Implant Choice



Plating  
Plate →

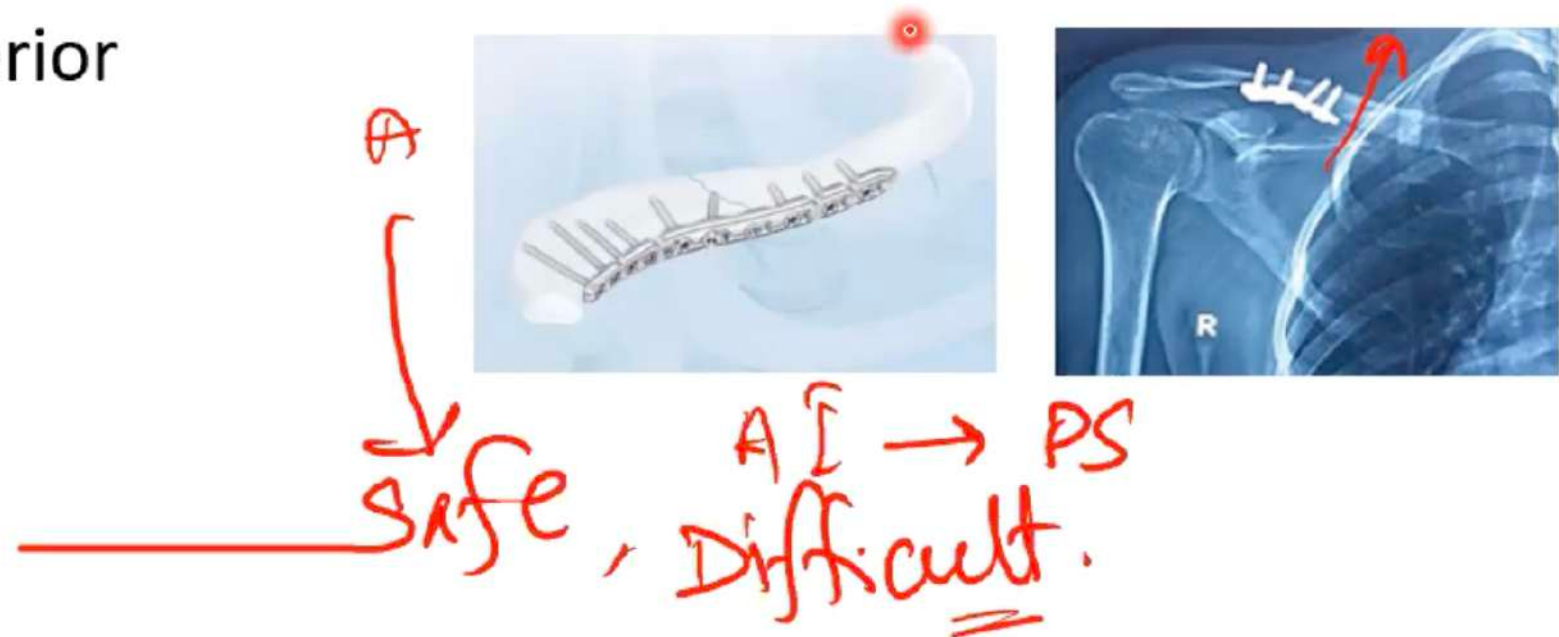


# Approaches

- Anterosuperior



- Anteroinferior



# Nail

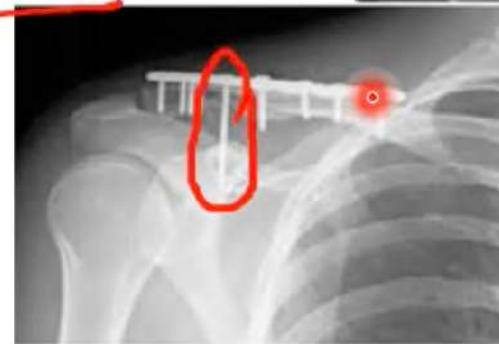
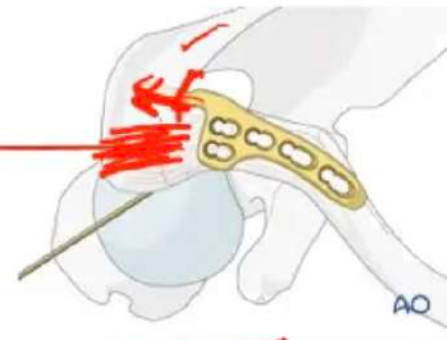


# Implant for lateral end clavicle #

## • Challenges

- Distal frag. Small.
- Cancellous. x Good Purchase
- High forces

## • Solutions

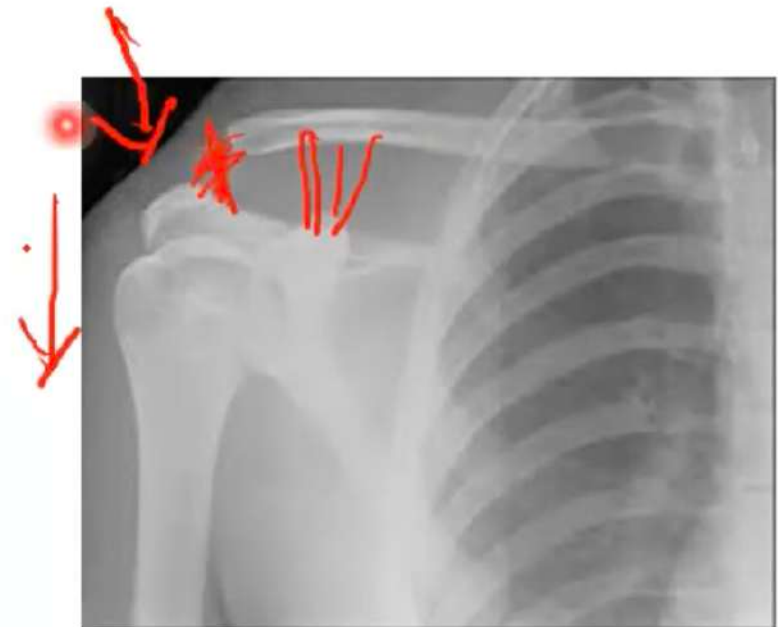


# Complications

- Early-  
Infection  
Hardware prominence  
Neurovascular injuries
- Late-  
Non union  
Malunion  
Stiffness



# Mechanism of injury



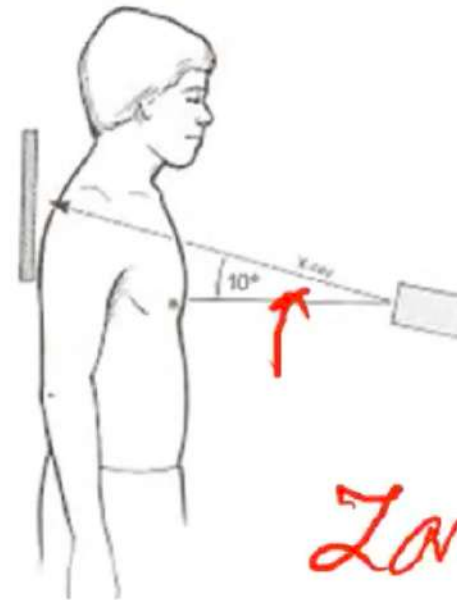
# Clinical examination

- Standing or sitting



# Xrays

- AP view
- Zanca with 50% less penetrance
- Stress view
- Axillary Lateral



Lamea ;

✓ AP.  
Overpenetration

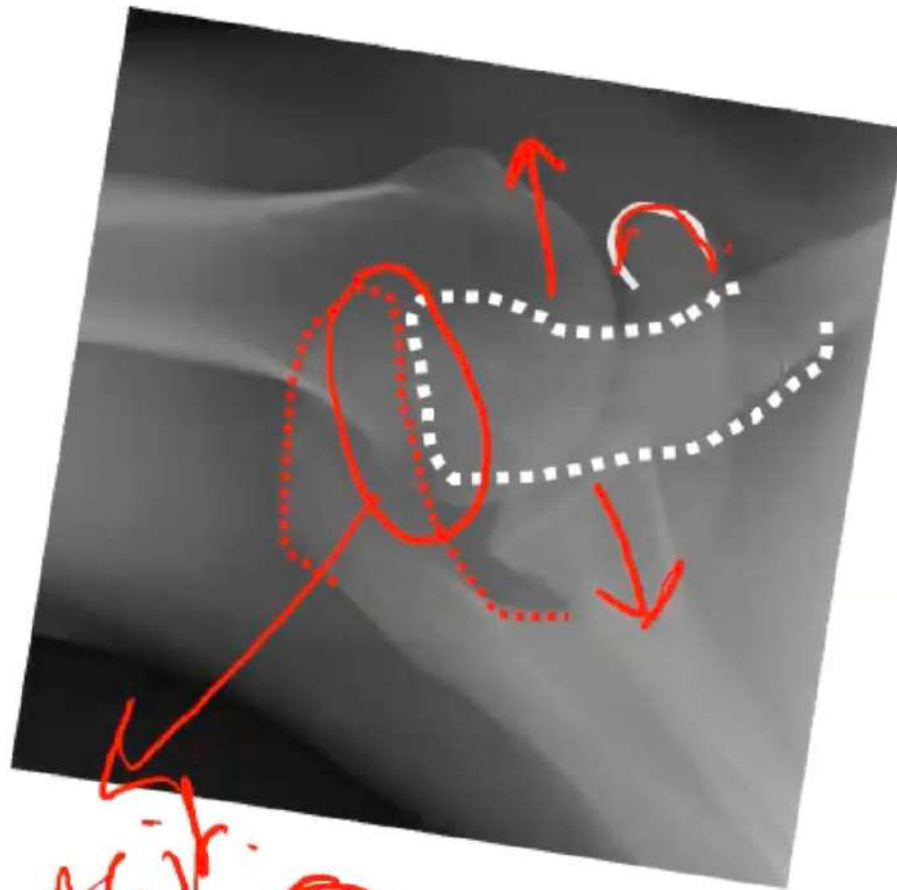


50% Penetration

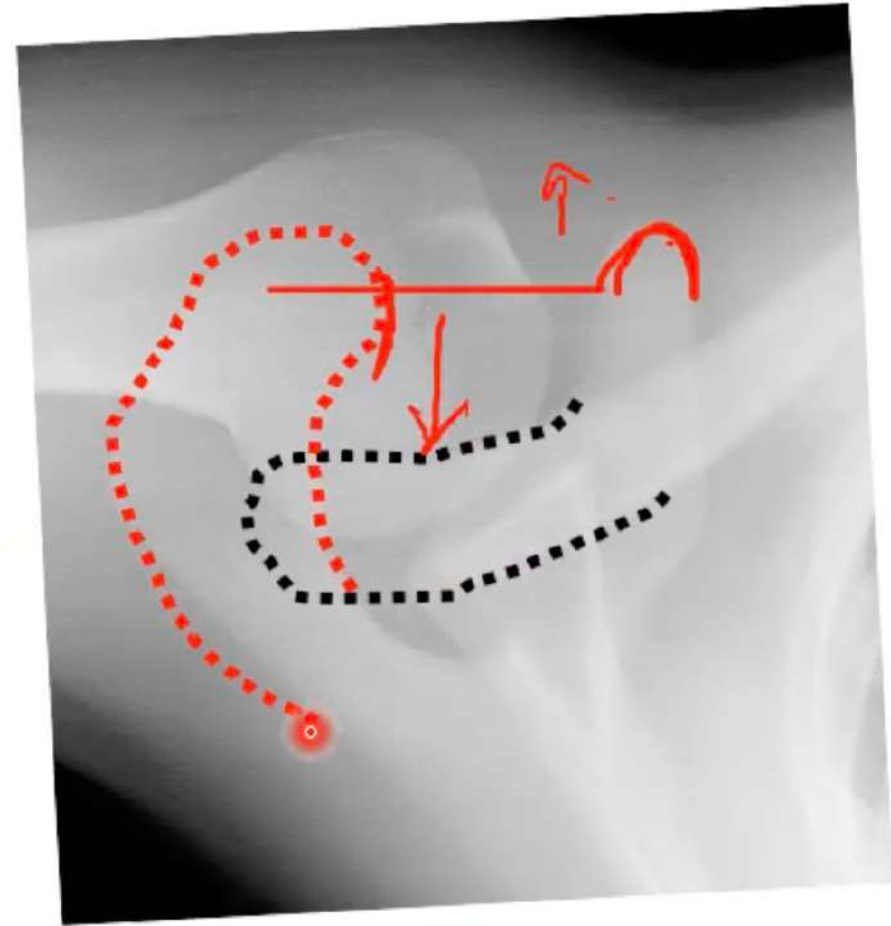
# Stress view



# Axillary lateral view

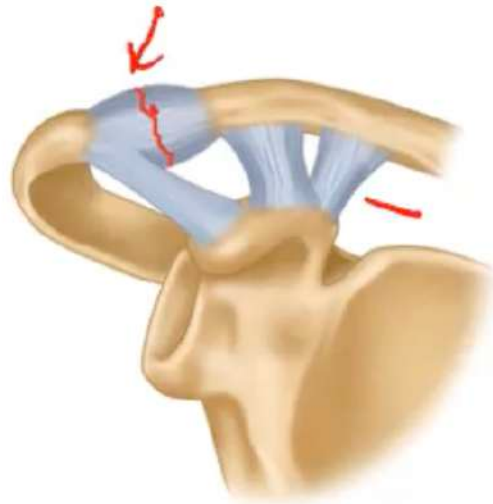


ACJr. (N)



Ab (N)

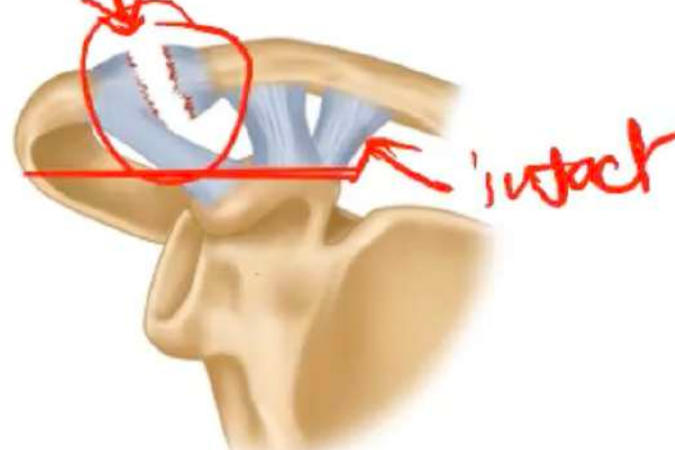
# Classification



Type I

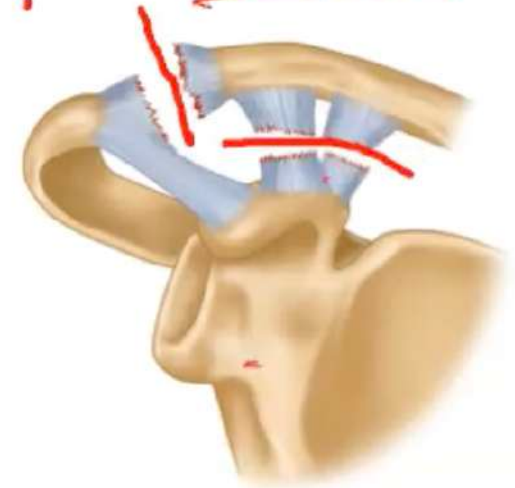
"Sprain"

Acting "ROCKWOOD" (I - V)



Type II

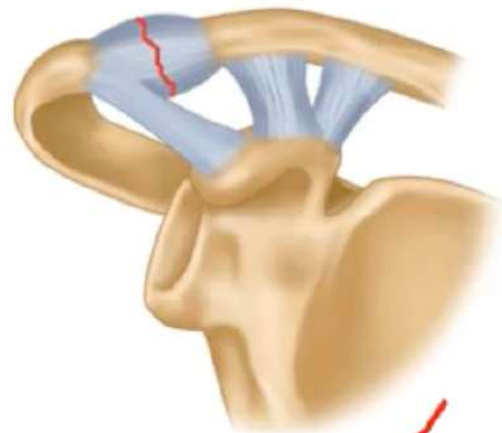
Subluxation



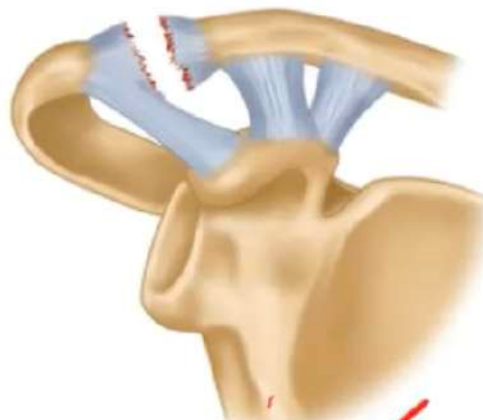
Type III

Dislocation

# Classification



Type I



Type II



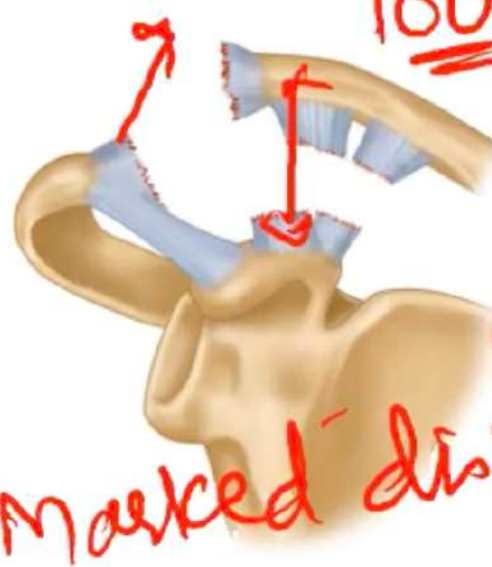
Type III

25-100%



Deltotrapezial musculature

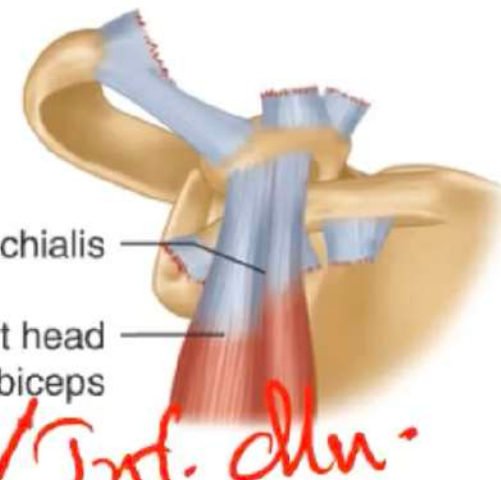
Post.



100-300%

marked disp

Type V



Coracobrachialis

Short head of the biceps

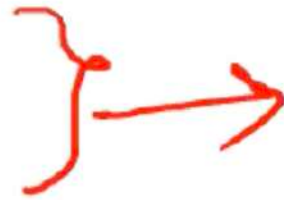
Inf. dis.

Type VI

# Treatment

(RW)

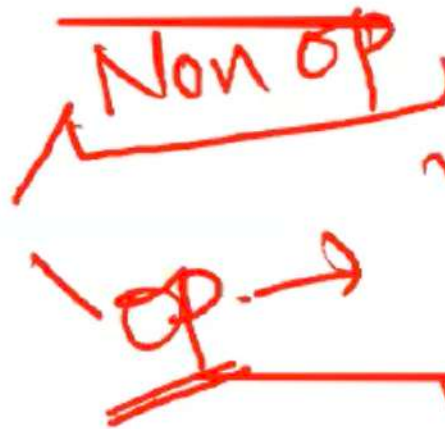
- I-
- II-



Non operative

• III

?



young, demanding  
sports, athlete  
manual labour

- IV
- V
- VI



Operative

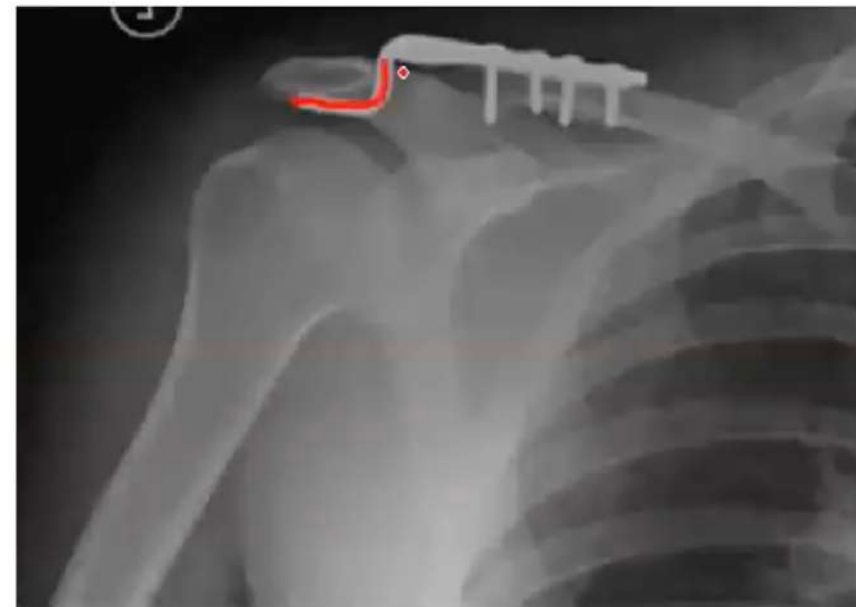
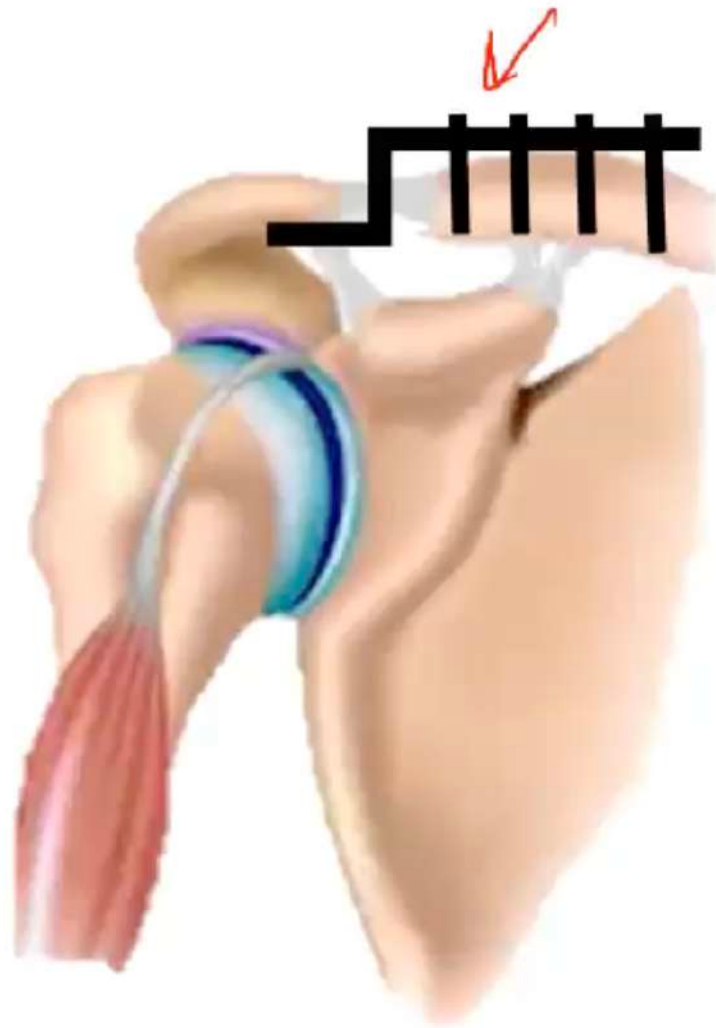
# Treatment options



Reduction  
& Maintain



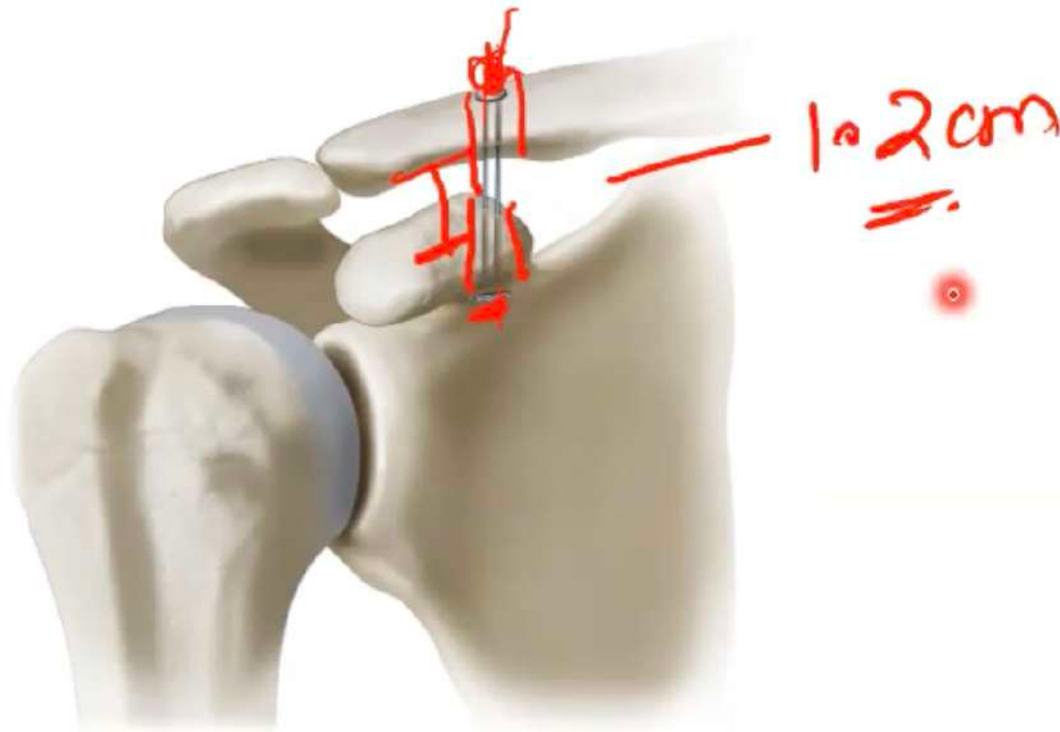
'Hook Plate'



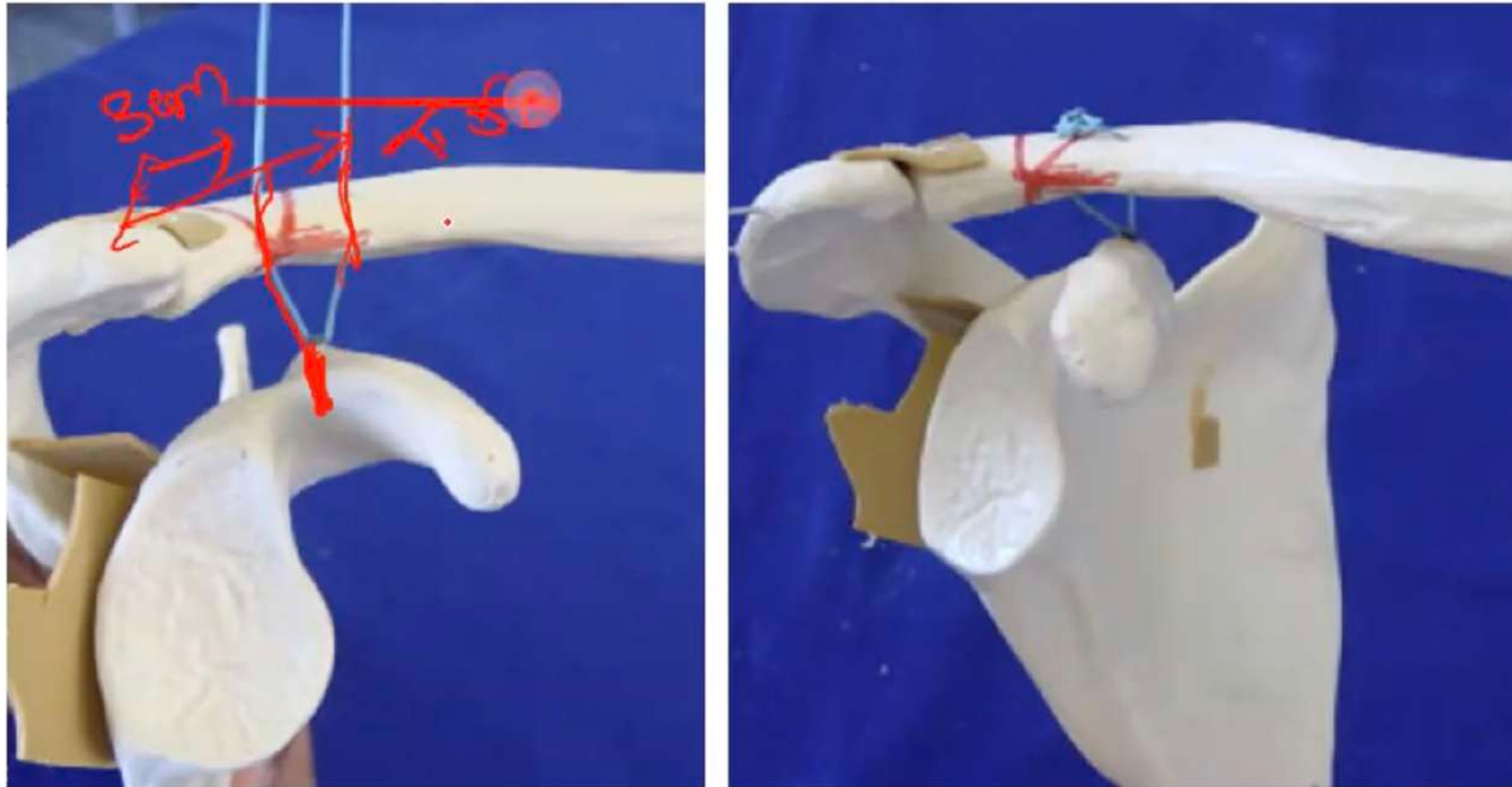
# BOSWORTH

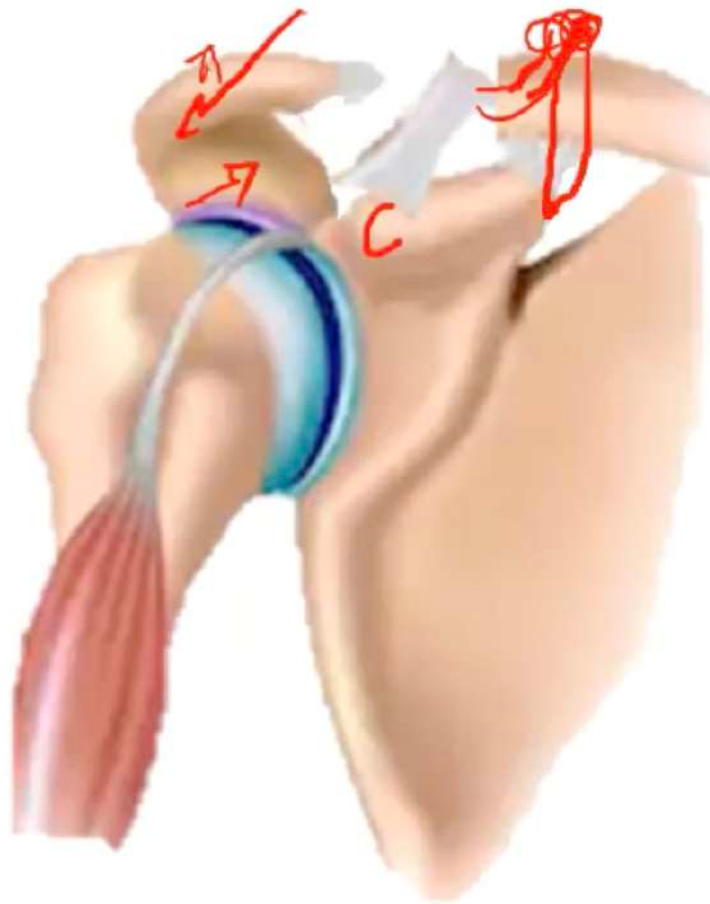


# Tight rope



# Suture anchor



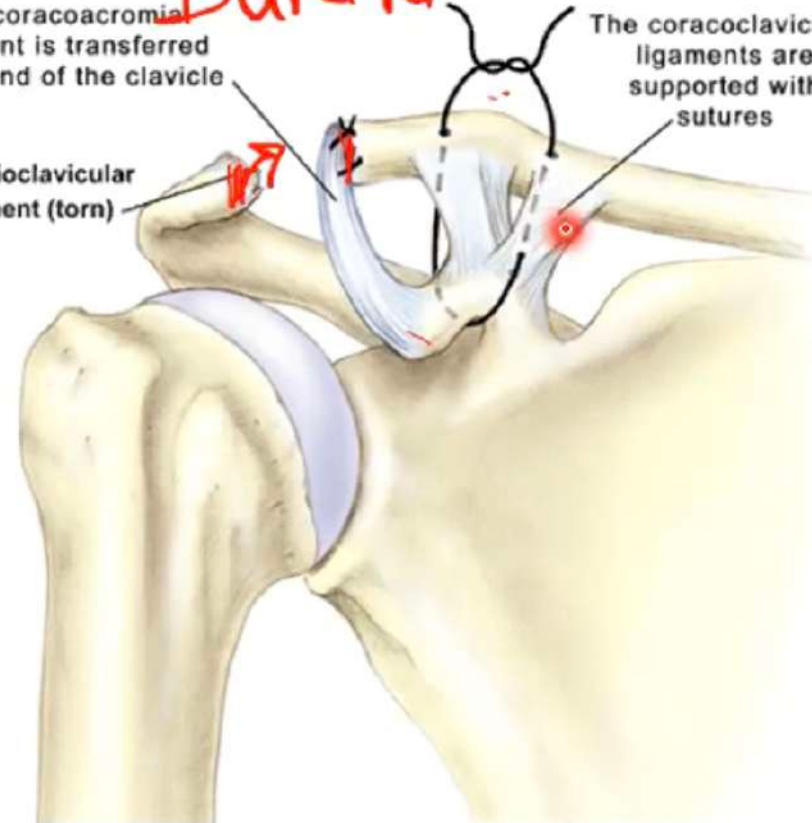


## WEAVER DUNN

The coracoacromial ligament is transferred to the end of the clavicle

The coracoclavicular ligaments are supported with sutures

Acromioclavicular ligament (torn)



# Reconstruction using tendon autograft

*Anatomic reconstruction*



# Treatment

- I-
- II-
- III
- IV
- V
- VI

Non operative → AC arthritis

?

Operative



# Distal clavicle excision



# To Summarize....

