UCSF Trauma 2026

Far Lateral Clavicular Fractures- When and How to Fix?

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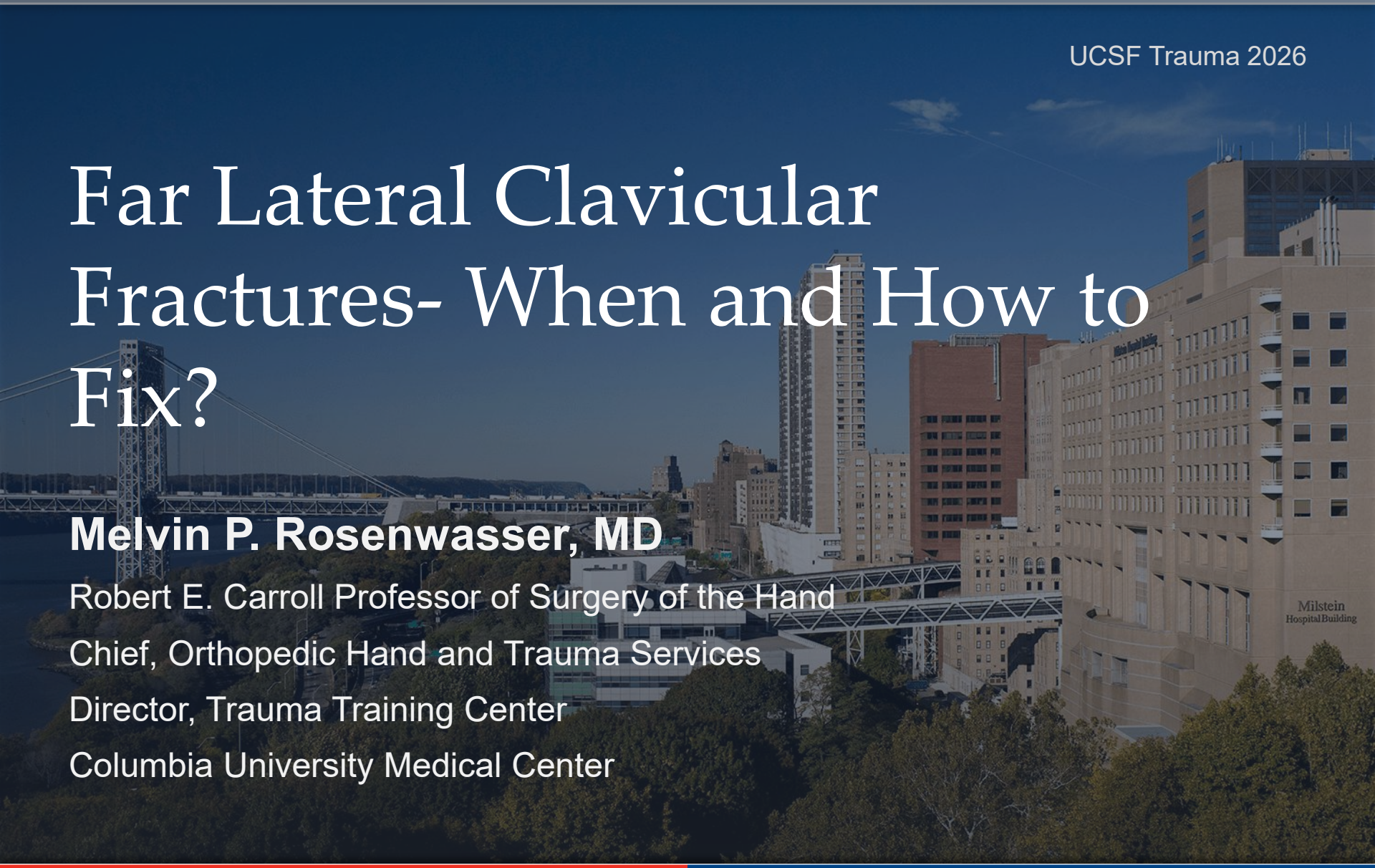

NewYork-Presbyterian

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College of Physicians & Surgeons

Nothing to Disclose

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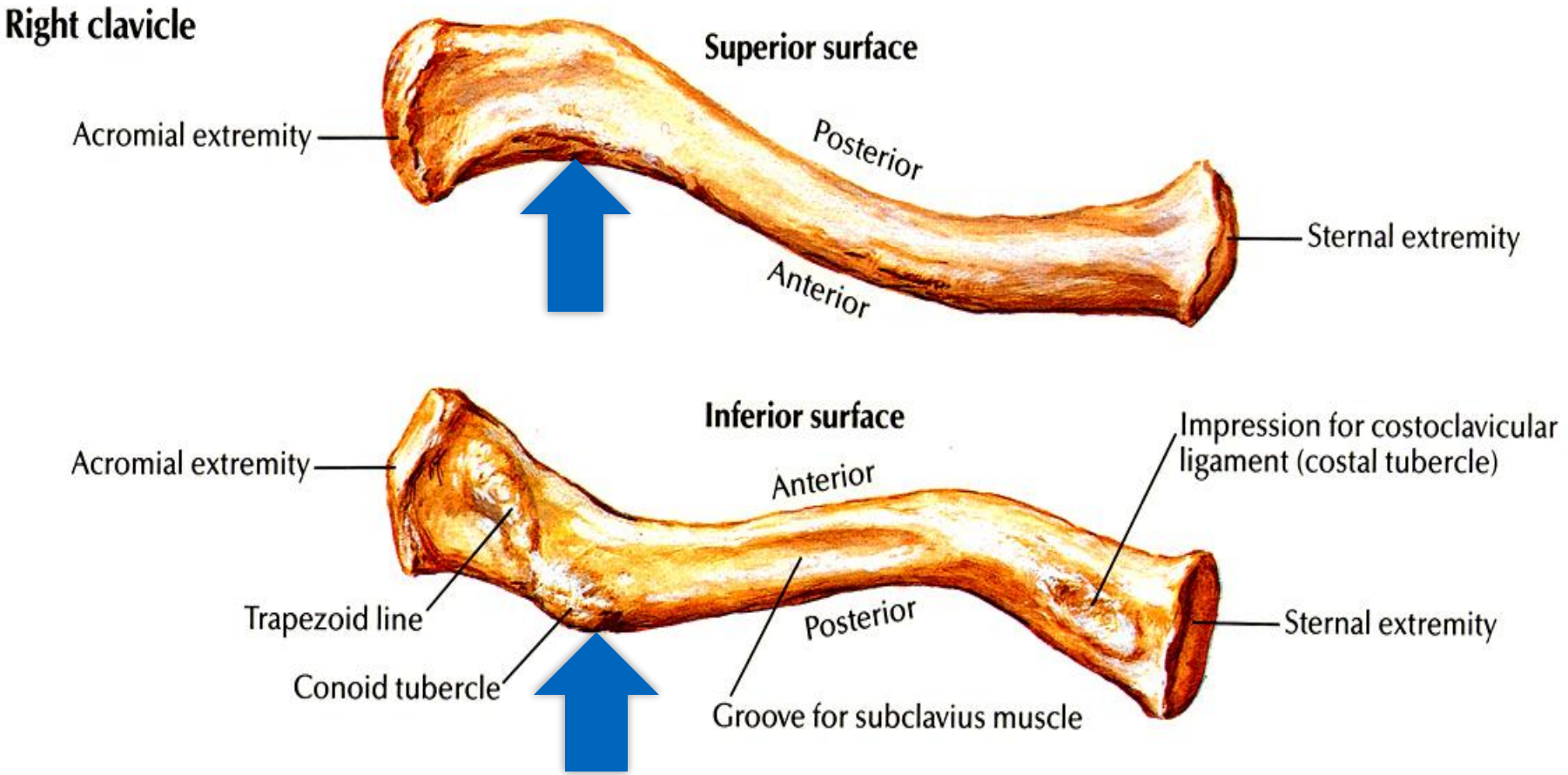
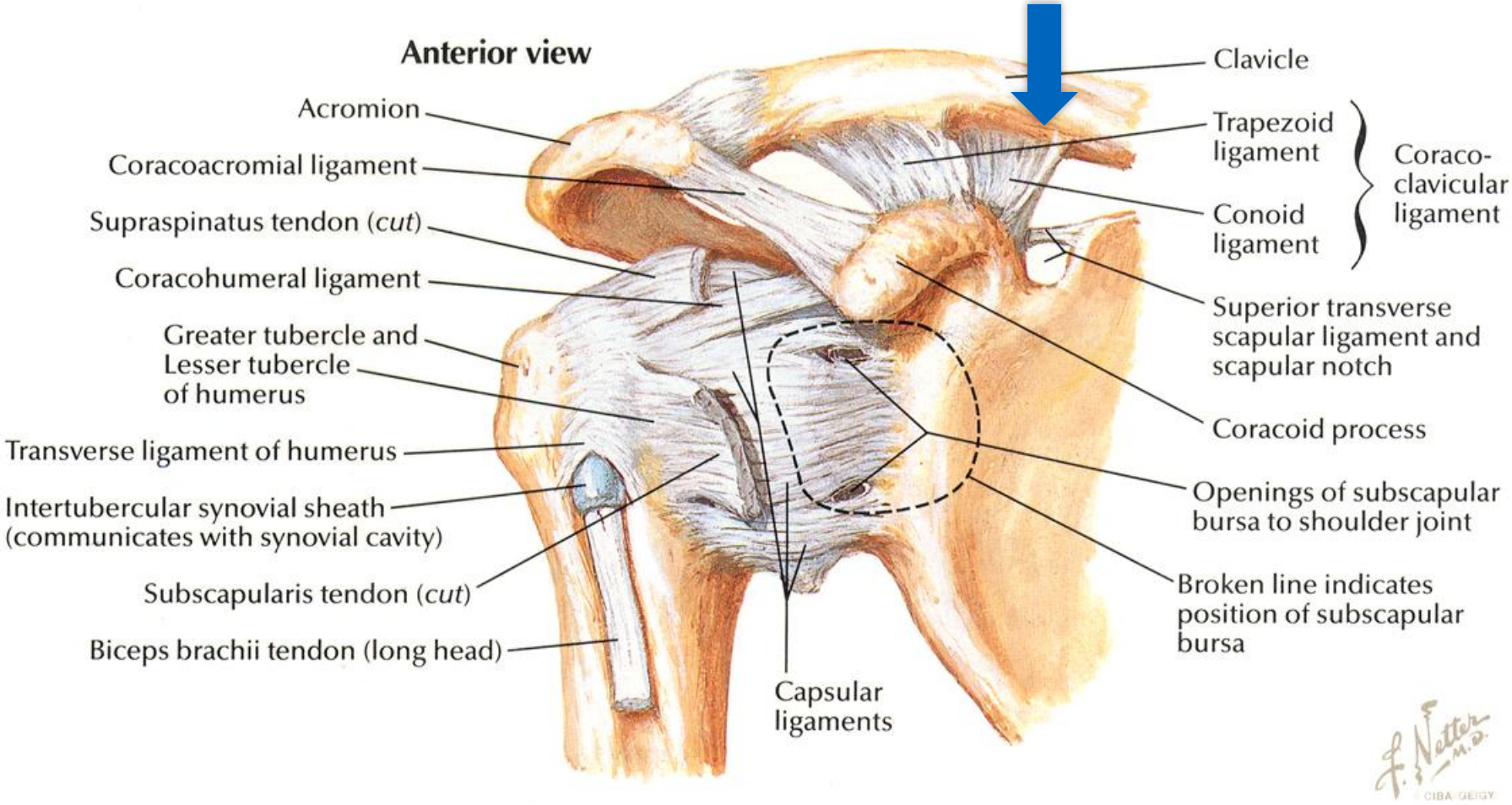
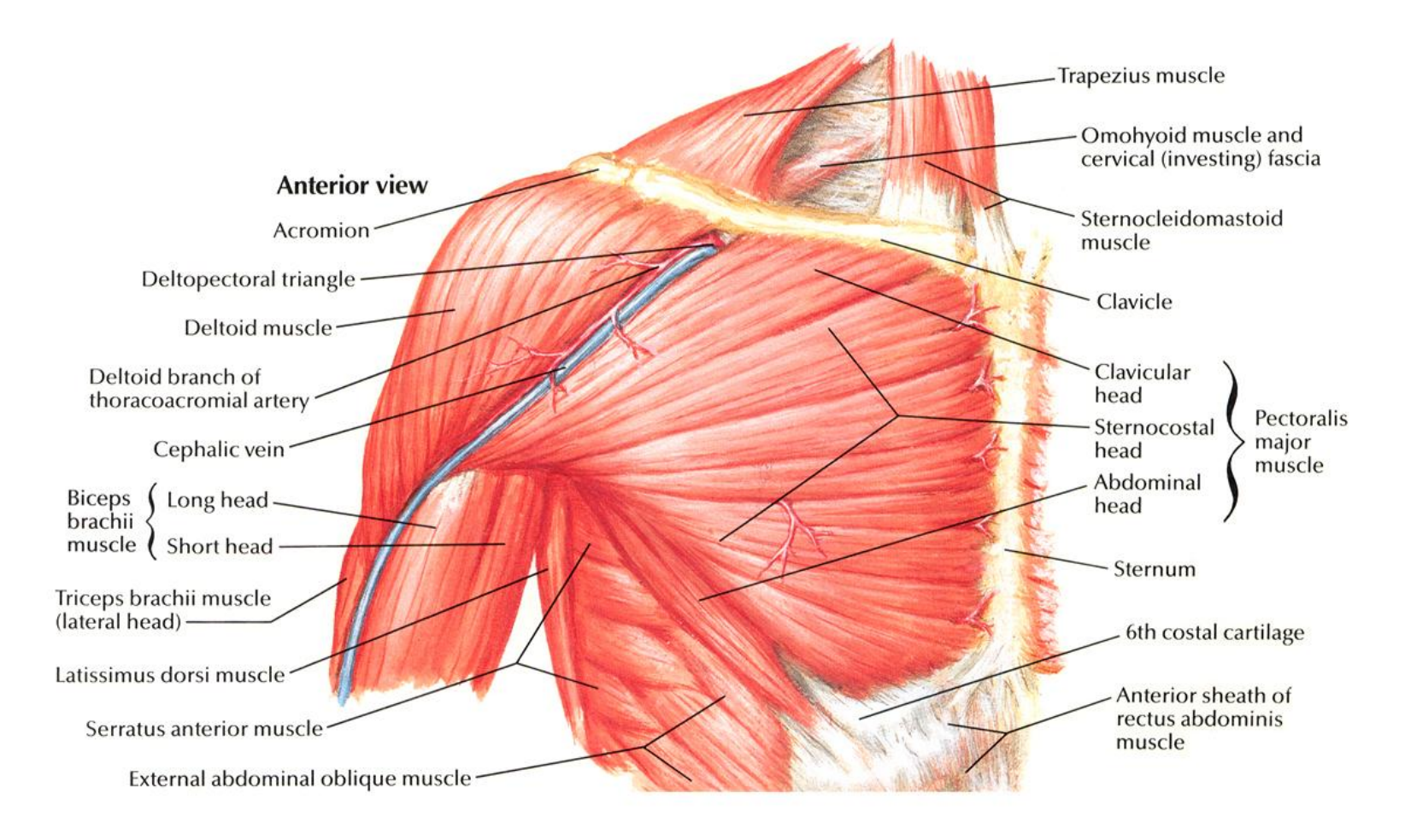
Distal Lateral Clavicle



Classification based on Integrity of CC Ligaments



Surgical Access Easy

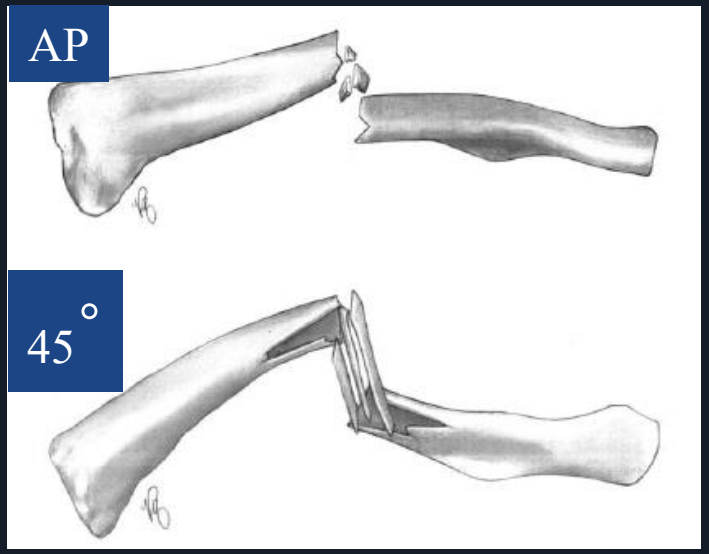


Radiographic Evaluation

Anteroposterior View

30-degree Cephalic Tilt View

Axillary view



Location of Fractures

Middle third

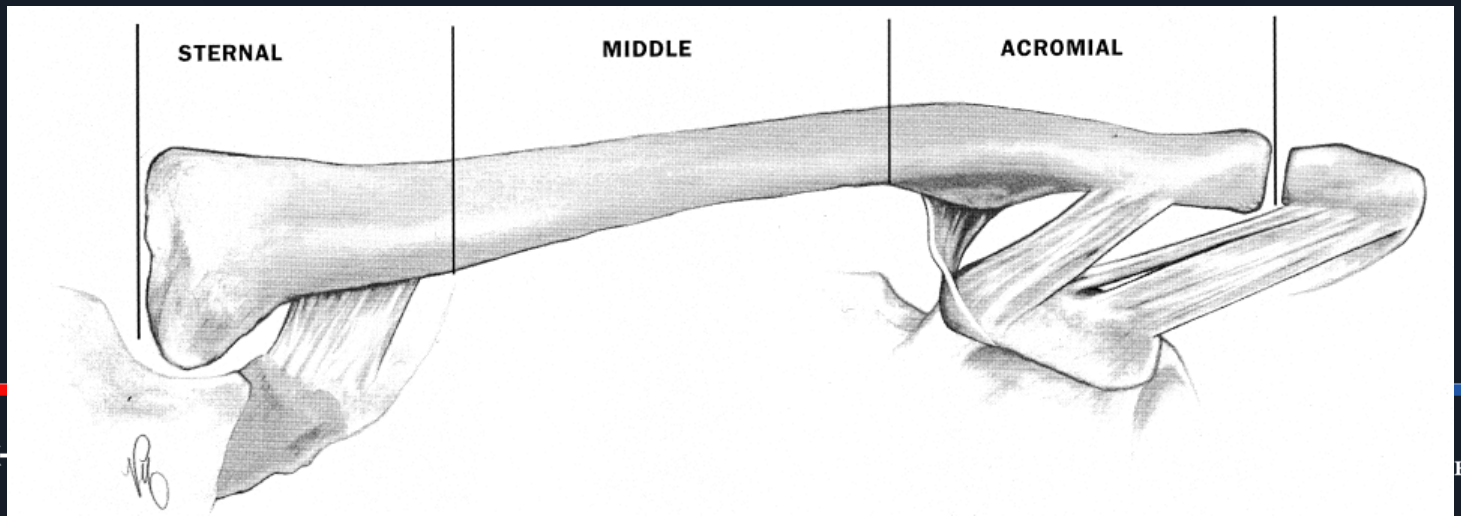
- 80% of fractures

Distal third

- 10-15%
  - **Non-union 15%-44% with closed tx**

Medial third

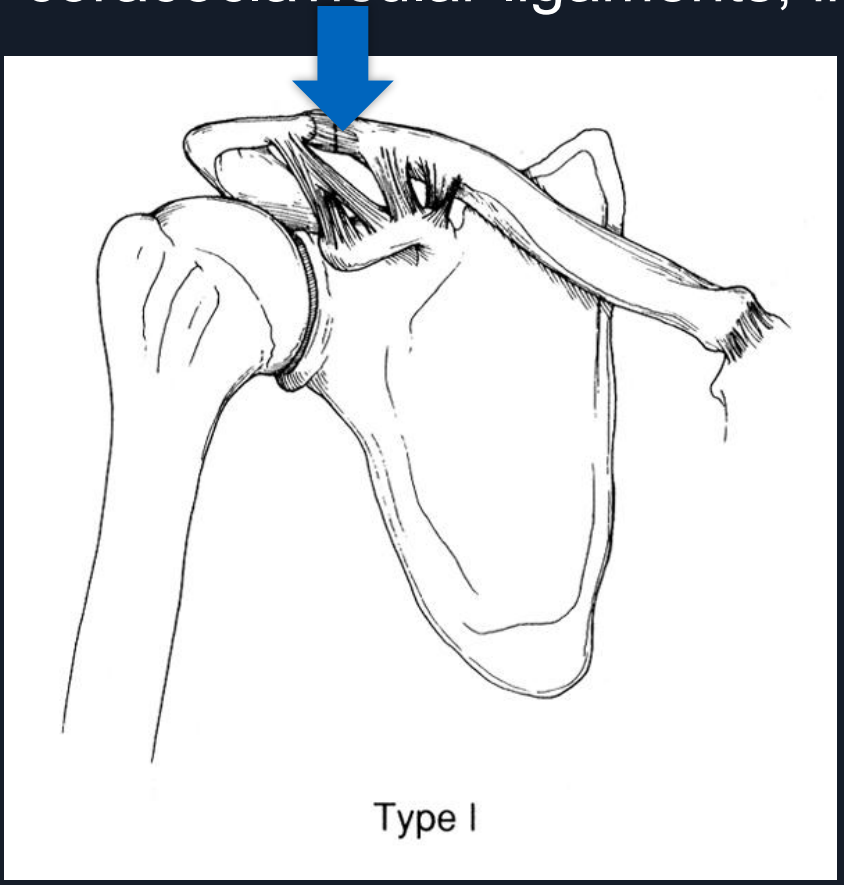
- approx. 5%



Neer Classification of Distal Clavicle Fractures

Type I- usually stable, managed conservatively

- Distal to the coracoclavicular ligaments, intact AC joint



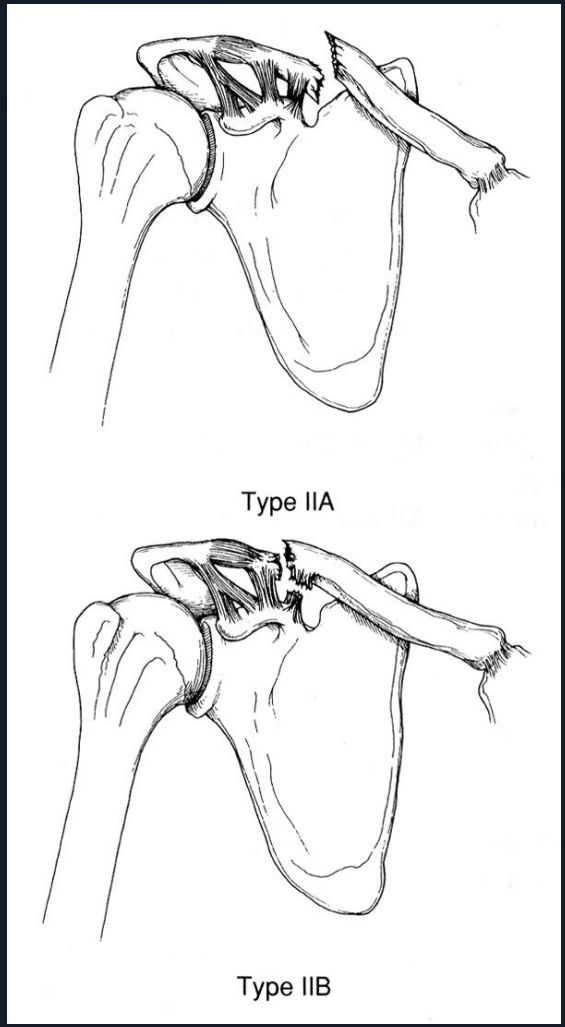
Classification of Distal Clavicle Fracture

Type IIA- unstable

- Medial to the coracoclavicular ligaments

Type IIB- unstable

- Between the coracoclavicular ligaments with conoid torn



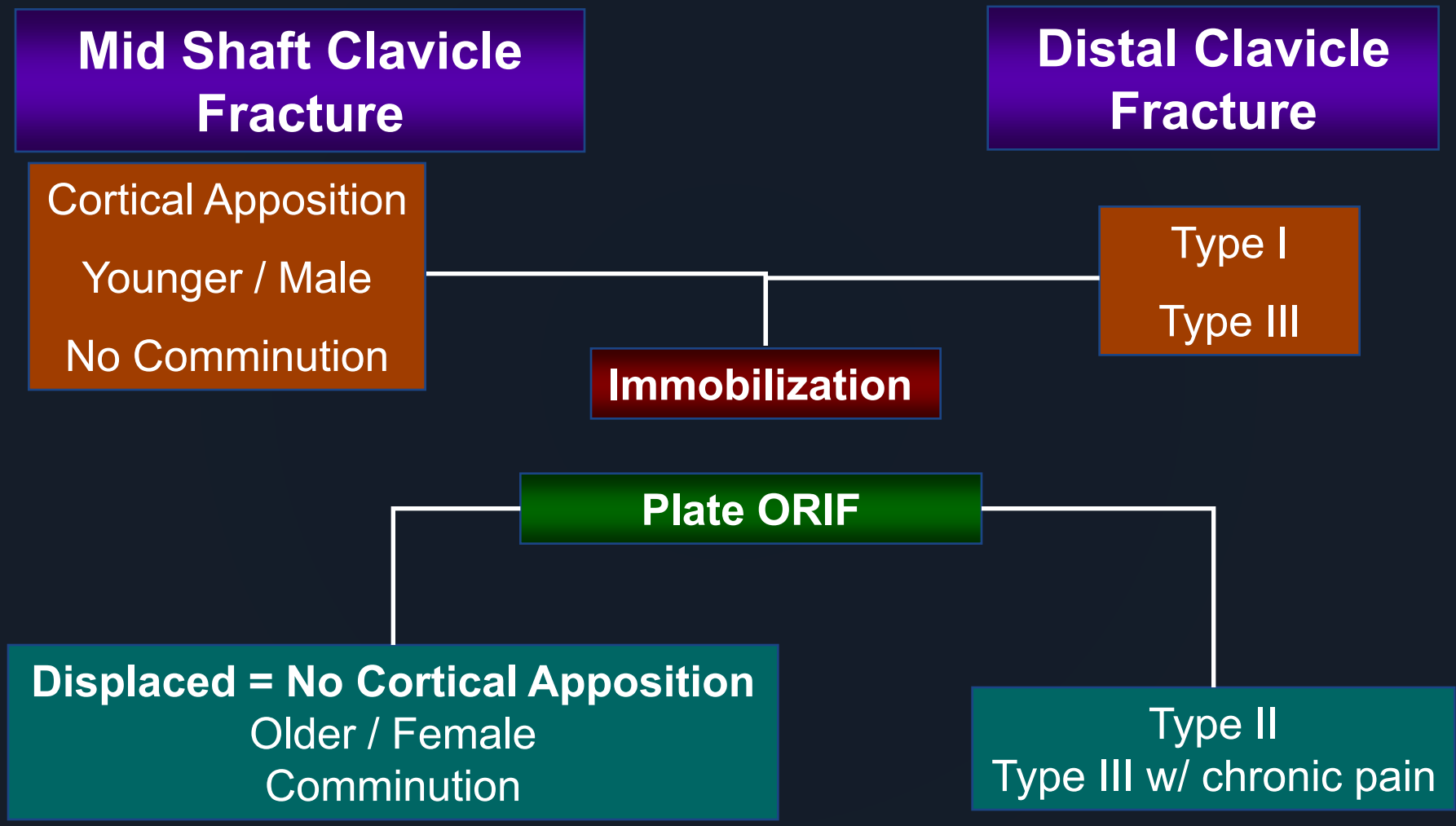
Classification of Distal Clavicle Fracture

Type III- stable

- Intra-articular frequently without ligament disruption
  - Often little or no displacement
  - Frequently missed or misdiagnosed

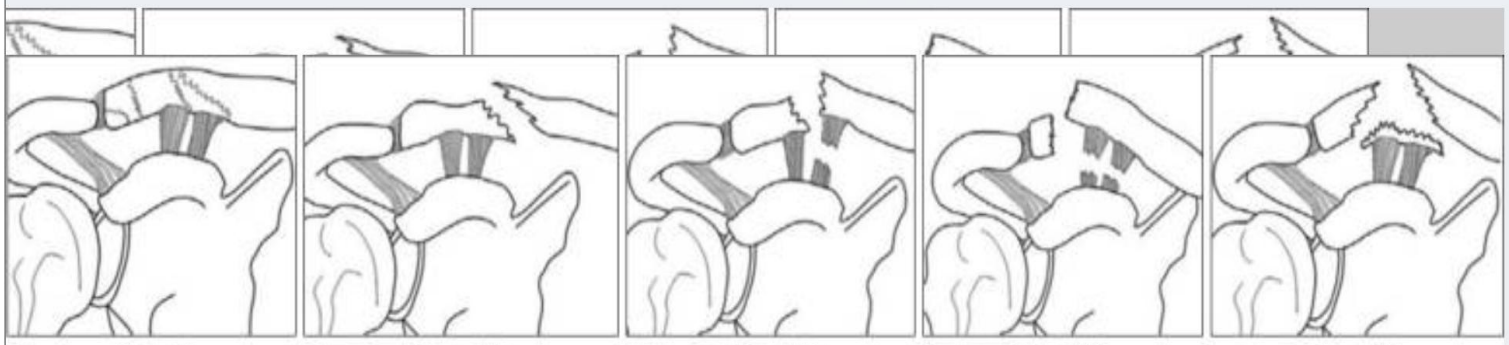
Type III

Treatment Algorithm
Acute Clavicle Fractures



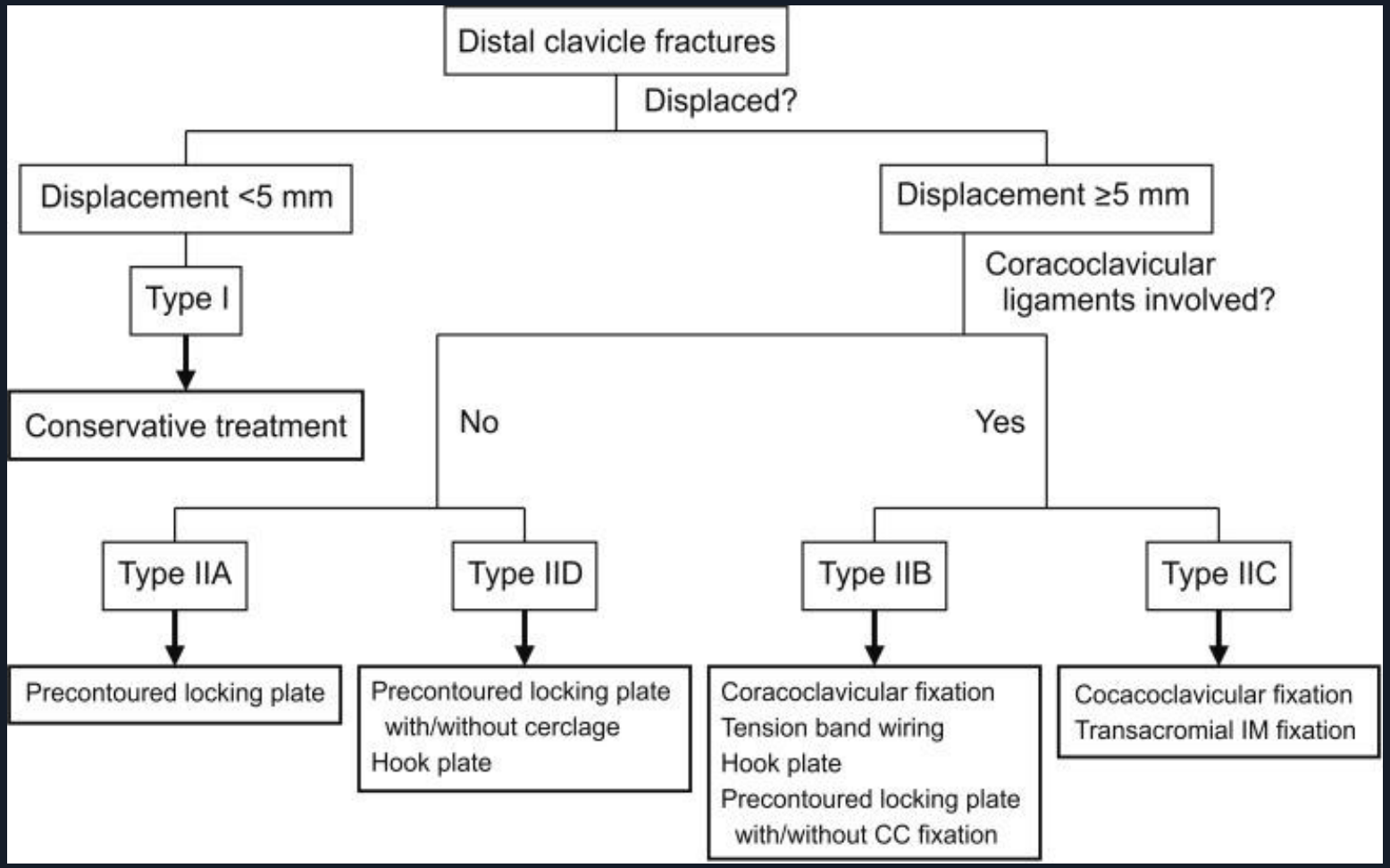
CHO Classification
Descriptive and Helpful for Rx

Click on image to magnify.



Type I-stable	Nondisplaced or minimally displaced (<5 mm) regardless of location
Type II-unstable	Displaced (≥5 mm)
IIA	Fracture medial to the CC ligaments: conoid and trapezoid intact
IIB	Fracture medial to the CC ligaments: conoid torn, trapezoid intact
IIC	Fracture lateral to the CC ligaments: conoid and trapezoid torn
IID	Comminuted fracture: CC ligaments attached to inferior ligament

Algorithm for Treatment – Cho-2018



Distal Clavicle FX

10-30% of all Clavicle fxs

10-44% Non Union Rate

Op vs. Non Op : pain, fct, strength =

Complications: ORIF- 41%, Re Op 40%

: Conservative NU-15-44%

3.5 mm Hook Plate
For very very distal and comminuted
Unfortunately hook abrades the rotator cuff

ORIF Complications

Hook Plating 40-76%

Locked Plating 23%

HWR hook plates 87%

HWR locked plates 27%

Alternative Internal Fixation Options for very small distal fragments

CC ligament repair

IM K wire or screw

Tension band wire

My Preference for ORIF

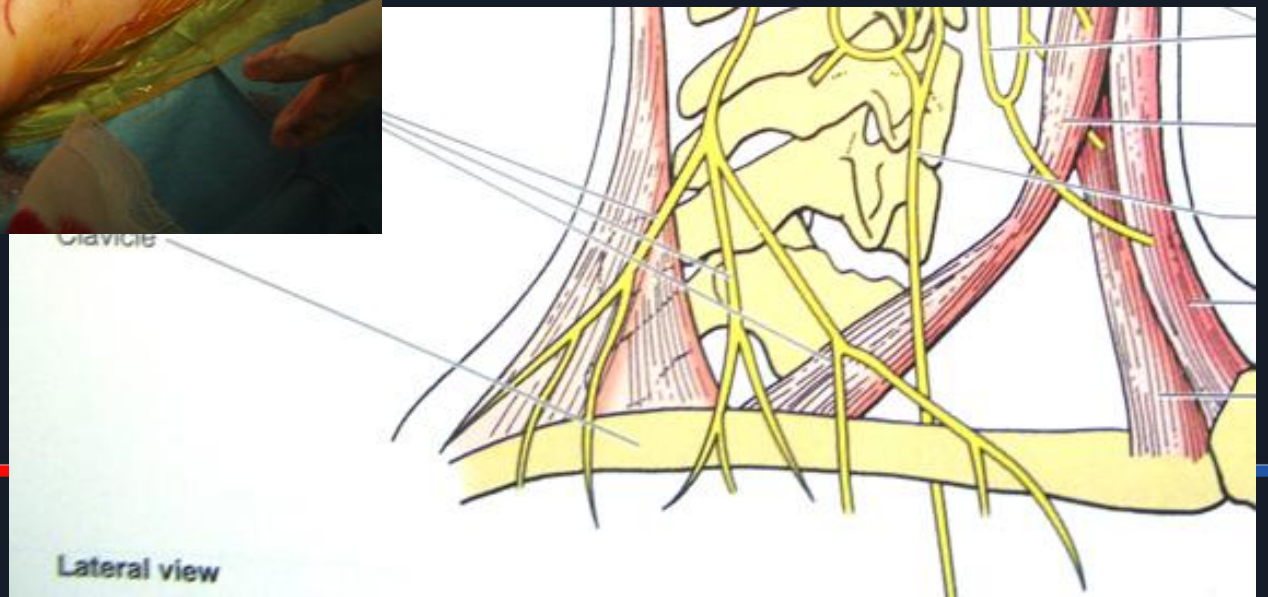
- Pre-contoured locking plate
- Distal plate has multiple screw options-locking
- In rare caes a double plating construct may be used

Positioning : Beach Chair

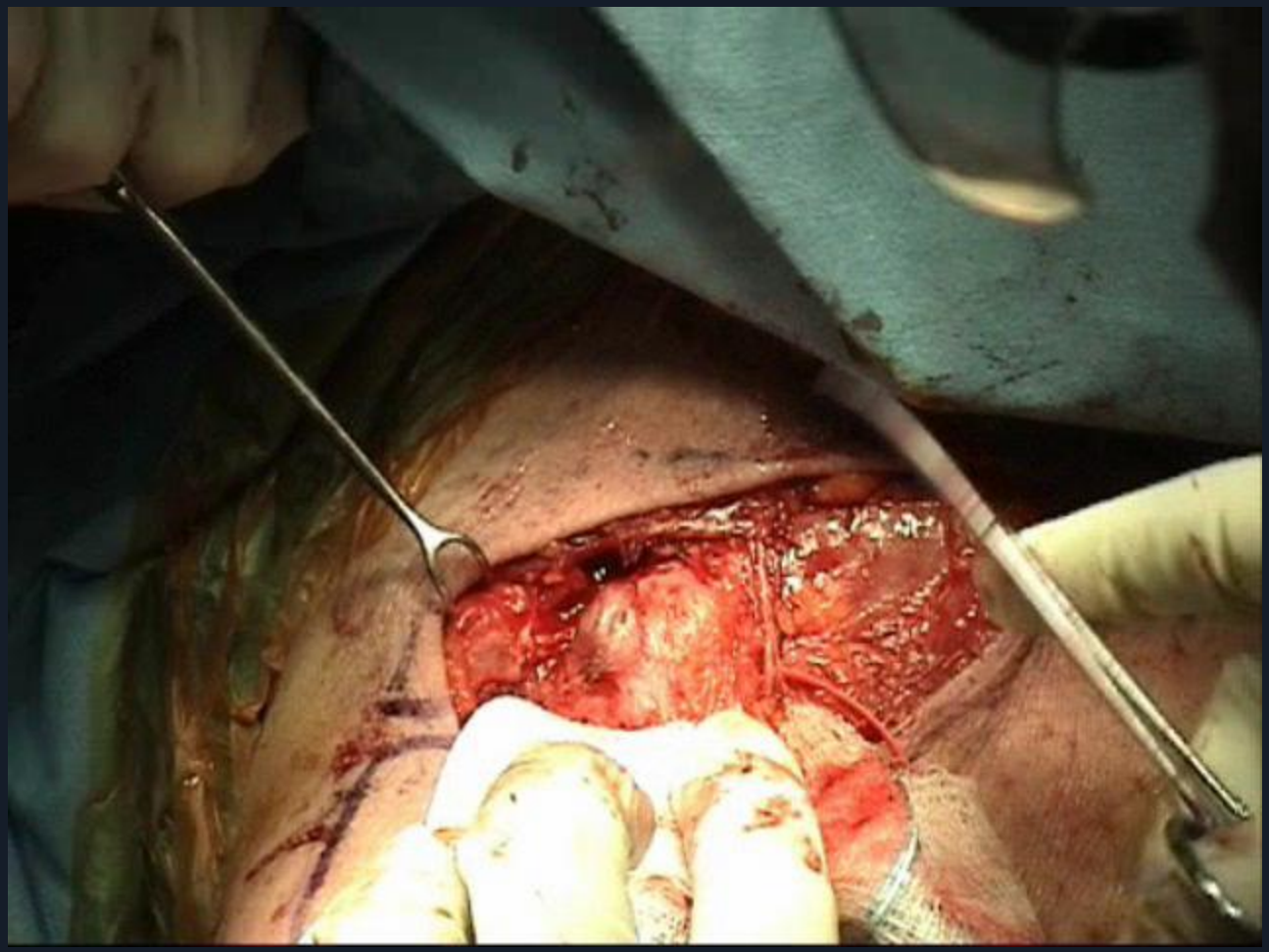
Incision

Exposure

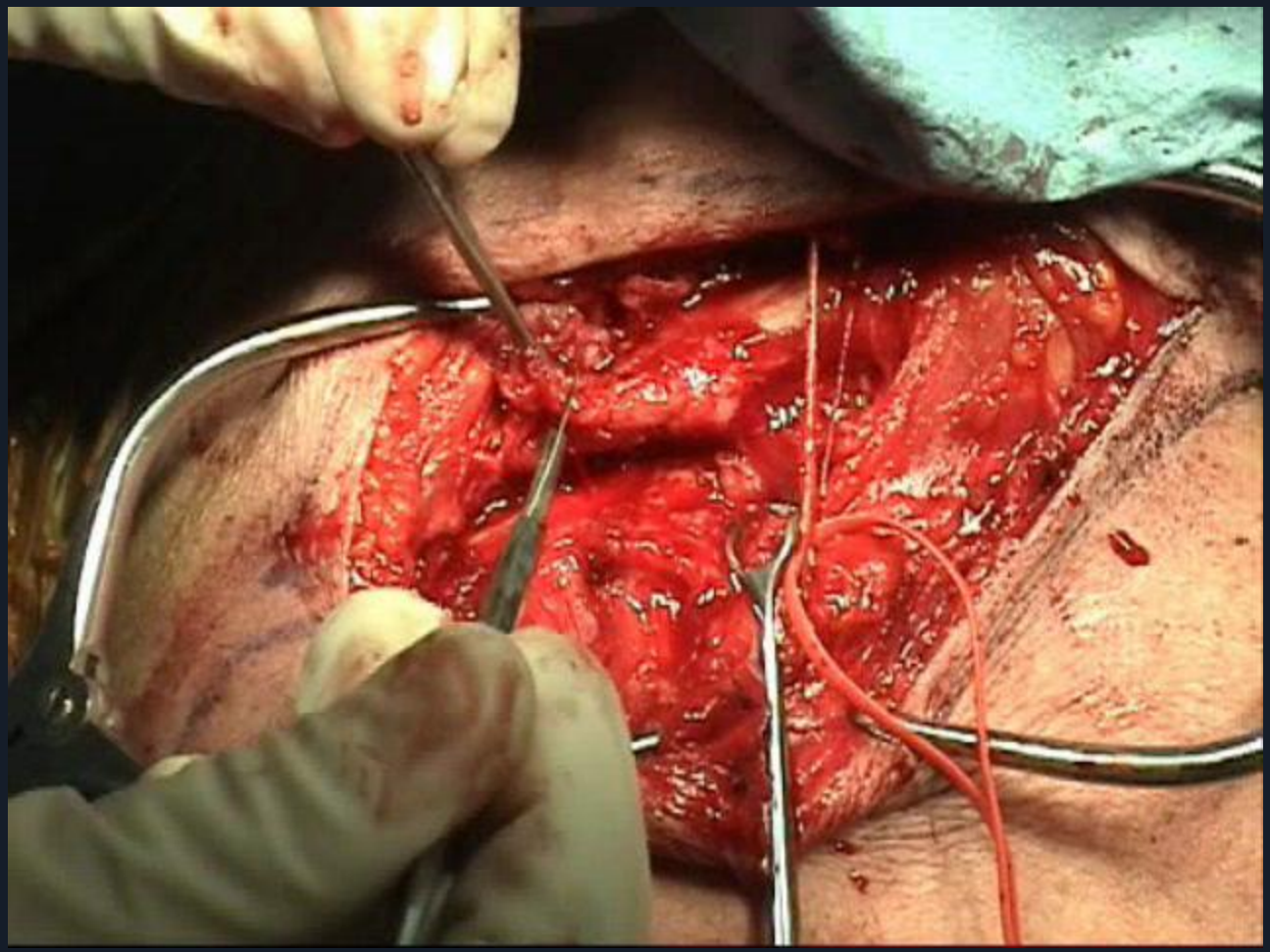
Supraclavicular nerve protected



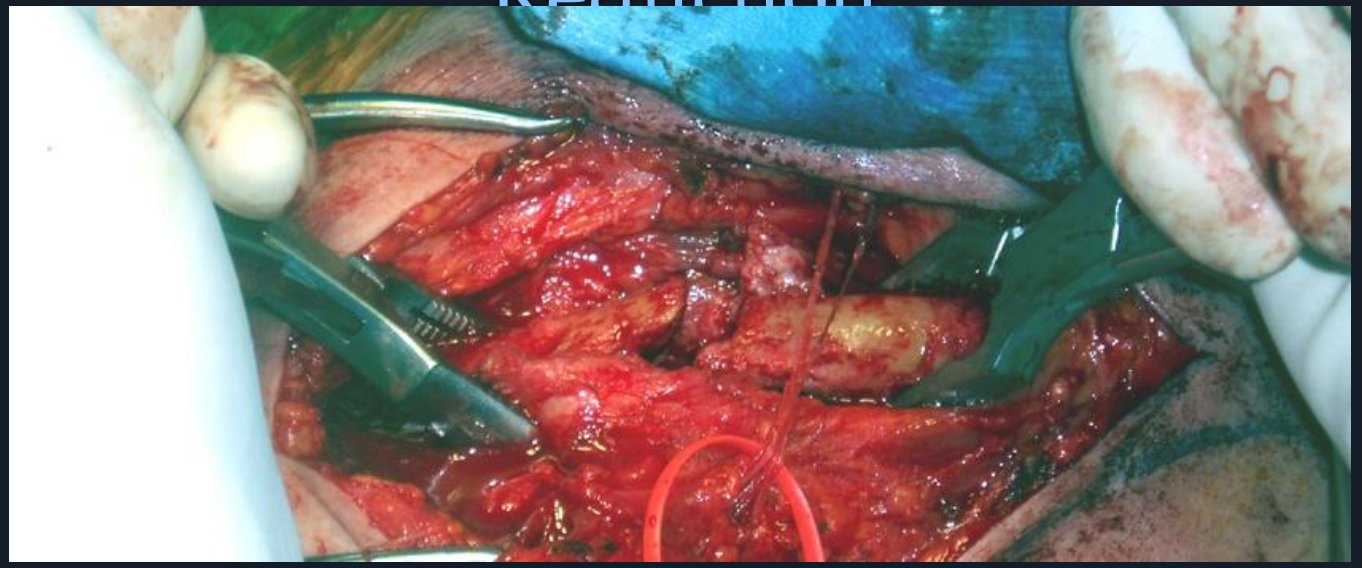
Fracture Exposure



Callous,Muscle, Debrided



Reduction



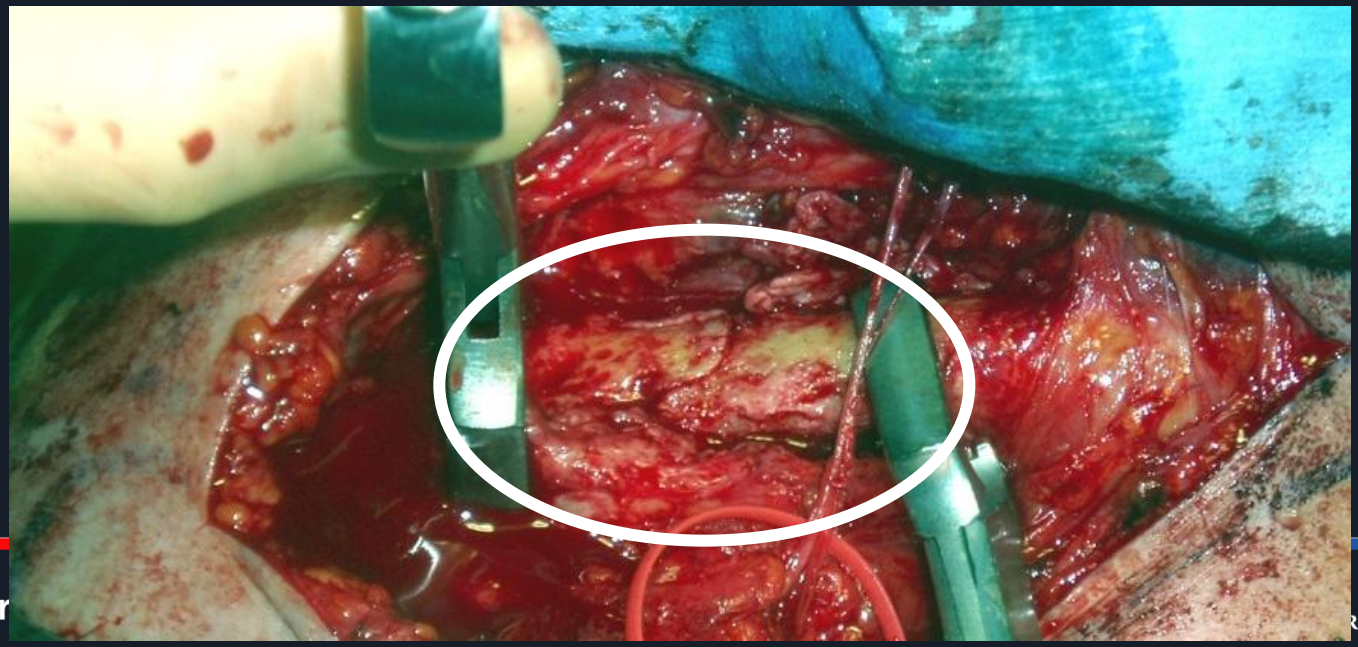
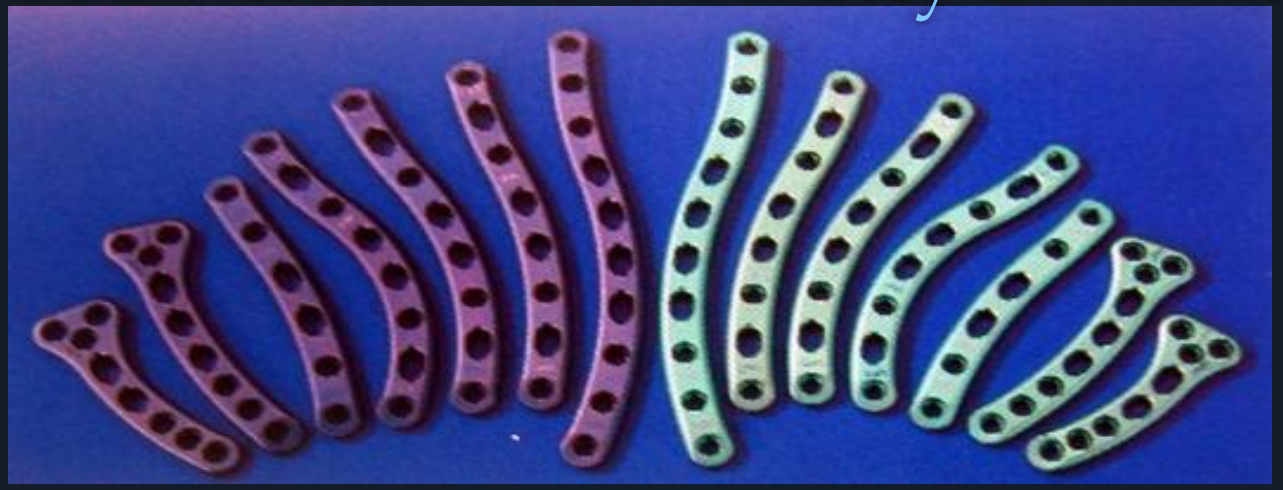
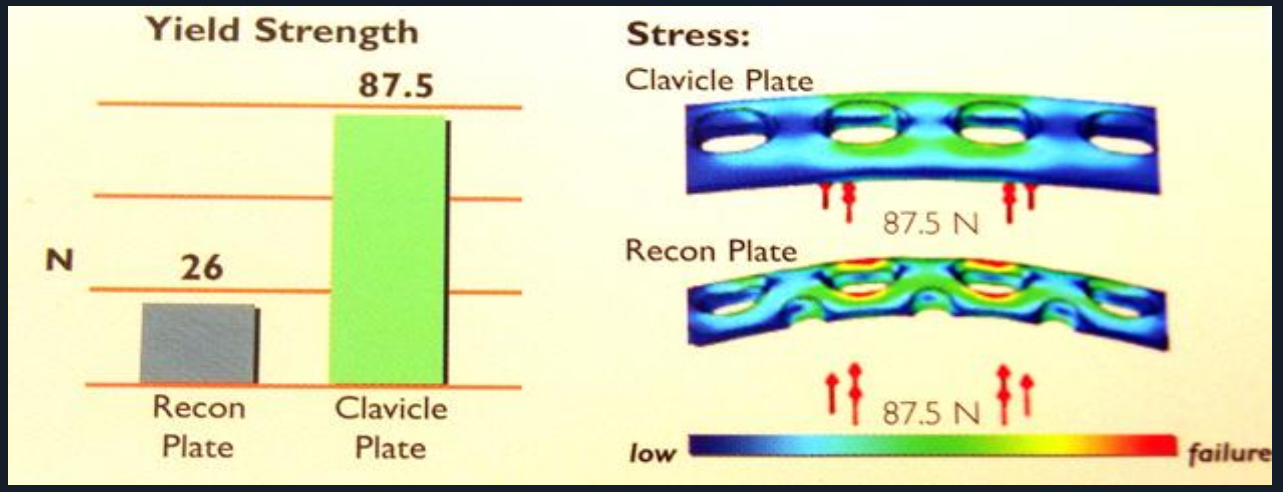


Plate Choice

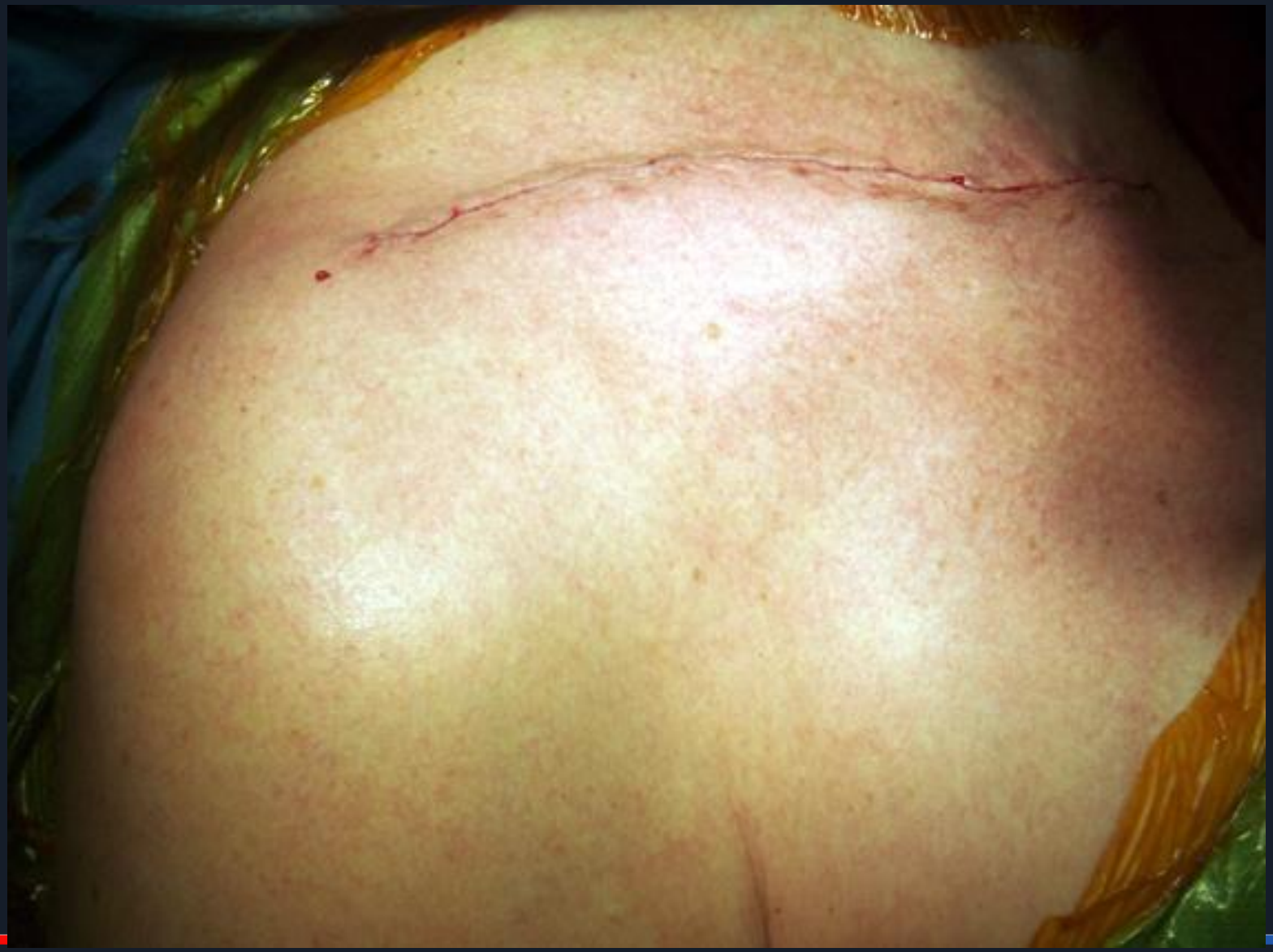
First Generation Plates
Not sufficient screw density in distal frag





New Plates have increased screw density distally

Cosmetic Closure

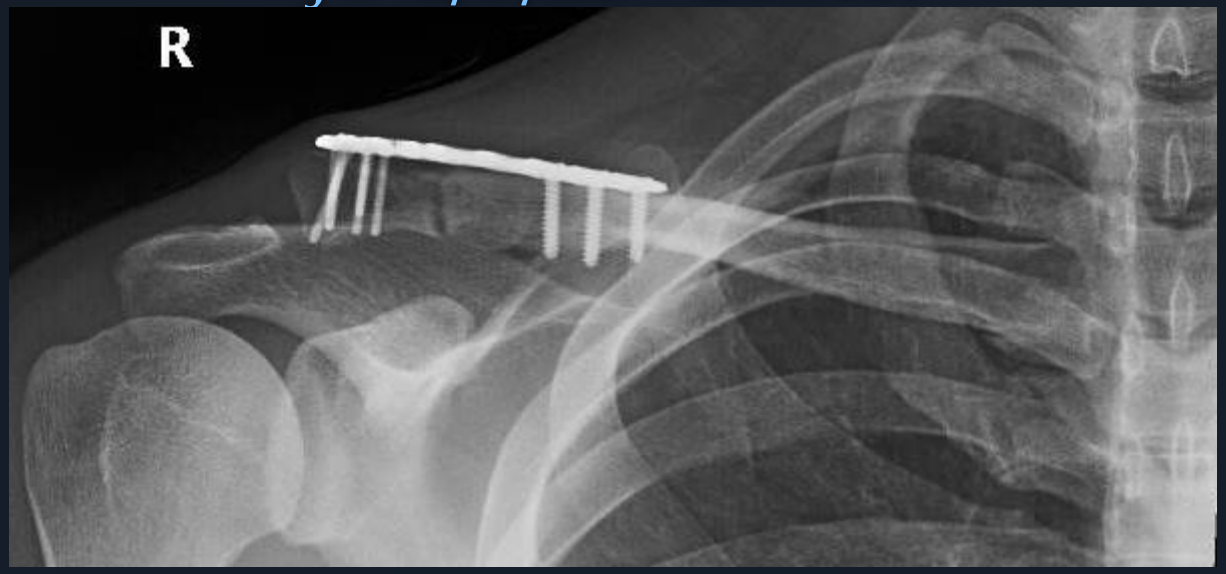


Patient JT

- **36 year old male**
- **Snowboarding accident**
- **DOI 1/4/2025**

JT 1/6/25- 2B Fx

JT 4/8/25- Union



Patient AO

- **29 year old male**
- **Fall from scooter**
- **DOI 7/16/2025**

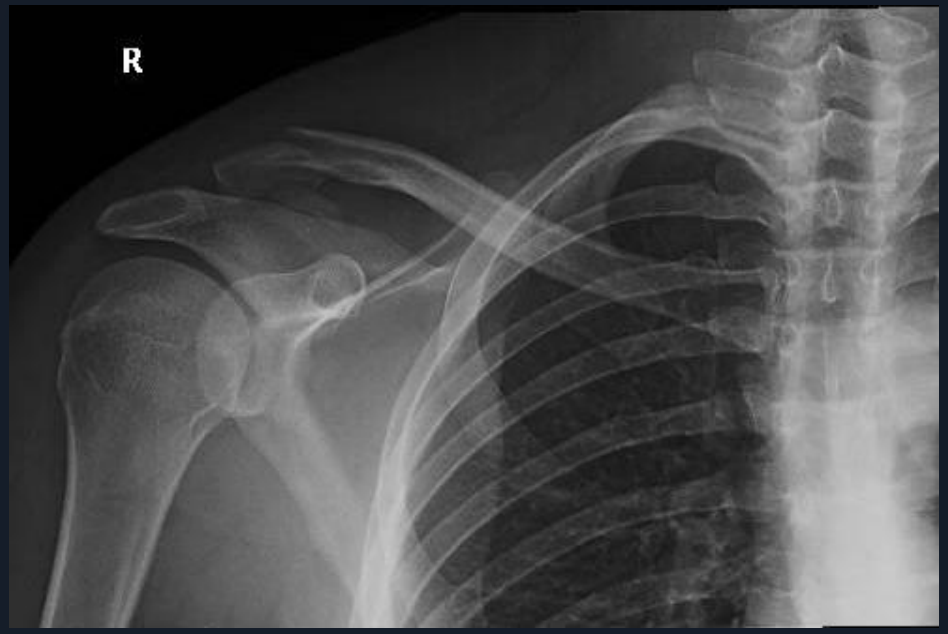
Patient AO 7/31/2025- 2C Fx

Patient AO 11/11/2025- Union

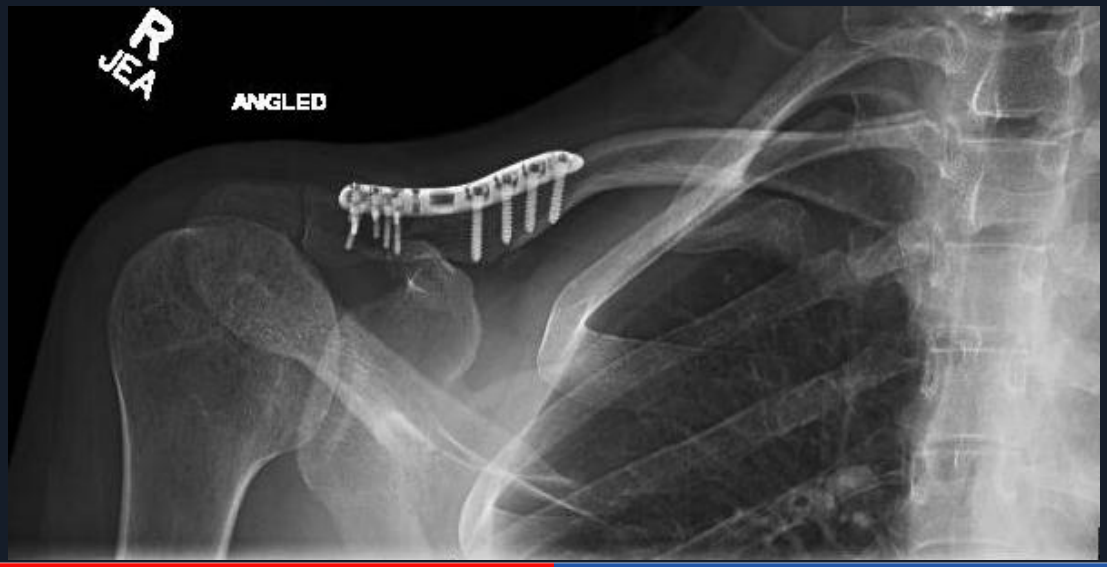
Patient PO

- 30 year old male
- Fall while skiing
- DOI 2/10/2025

Patient PO 2/13/2025- 2D Fx



Patient PO 5/29/2025-Union

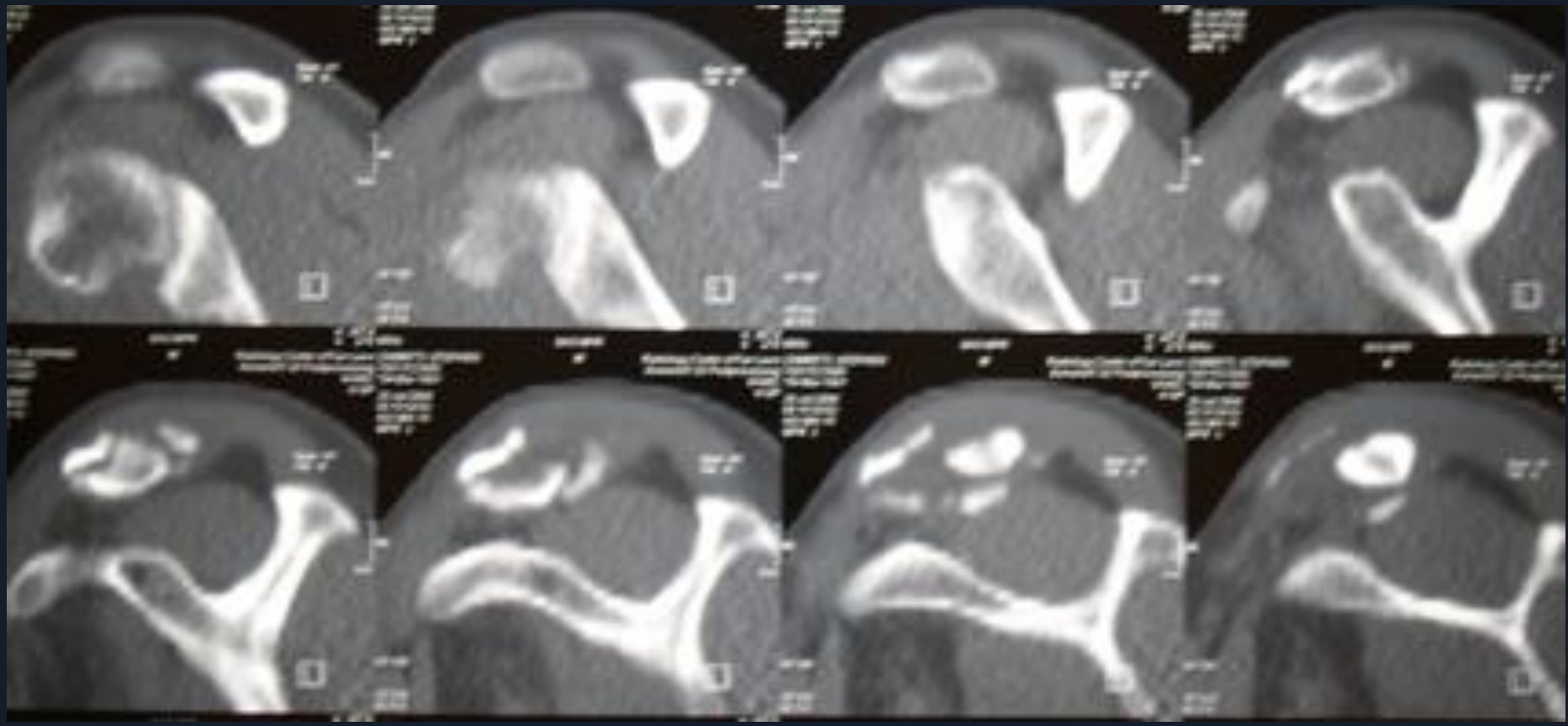


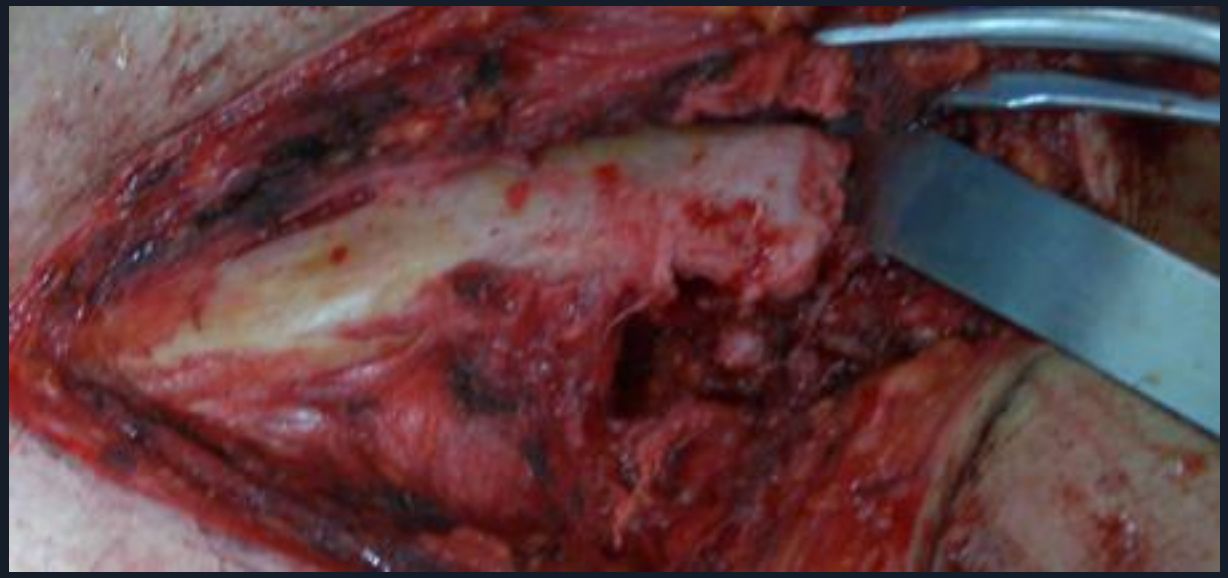
Case: 43 y/o M, Type 2 A LT distal clavicle Fx while playing soccer

- Closed treatment attempted: sling/protection
- Shoulder Painful
- Limited overhead activities

8 months post closed treatment: painful distal nonunion- 2A Fx

CT : Pre-OP Planning

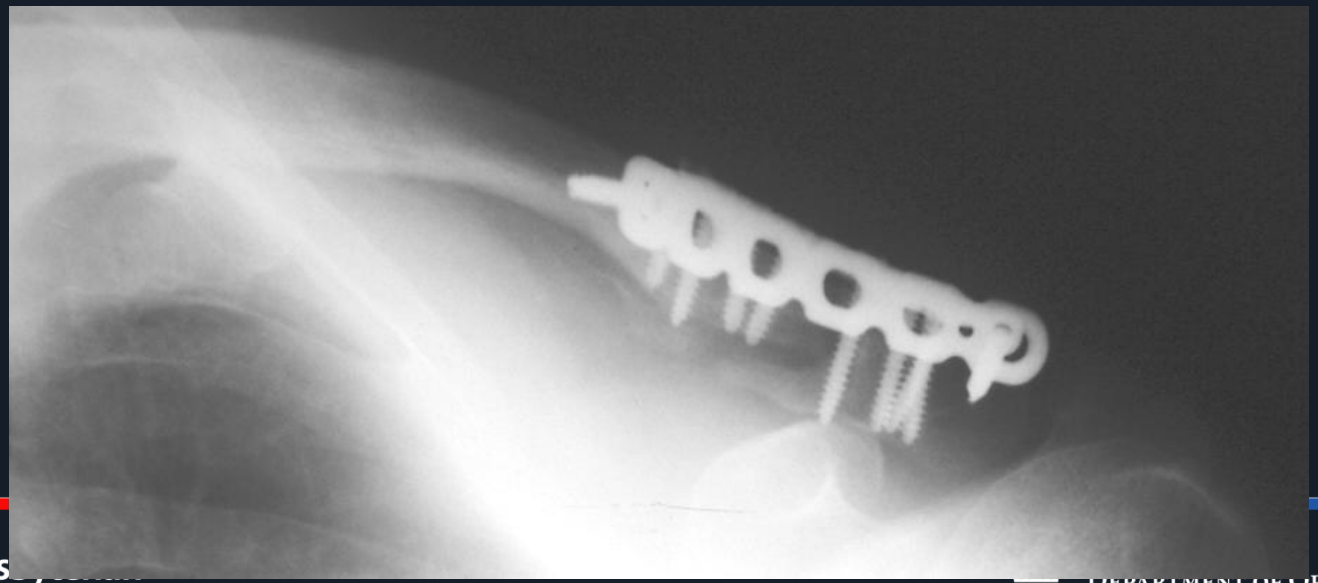




Allograft Cancellous Chips
Double 90/90 Plating

Superior and Anterior Plating

8 month Follow Up: Union



Thank You

AMAZING
THINGS
ARE
HAPPENING
HERE

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