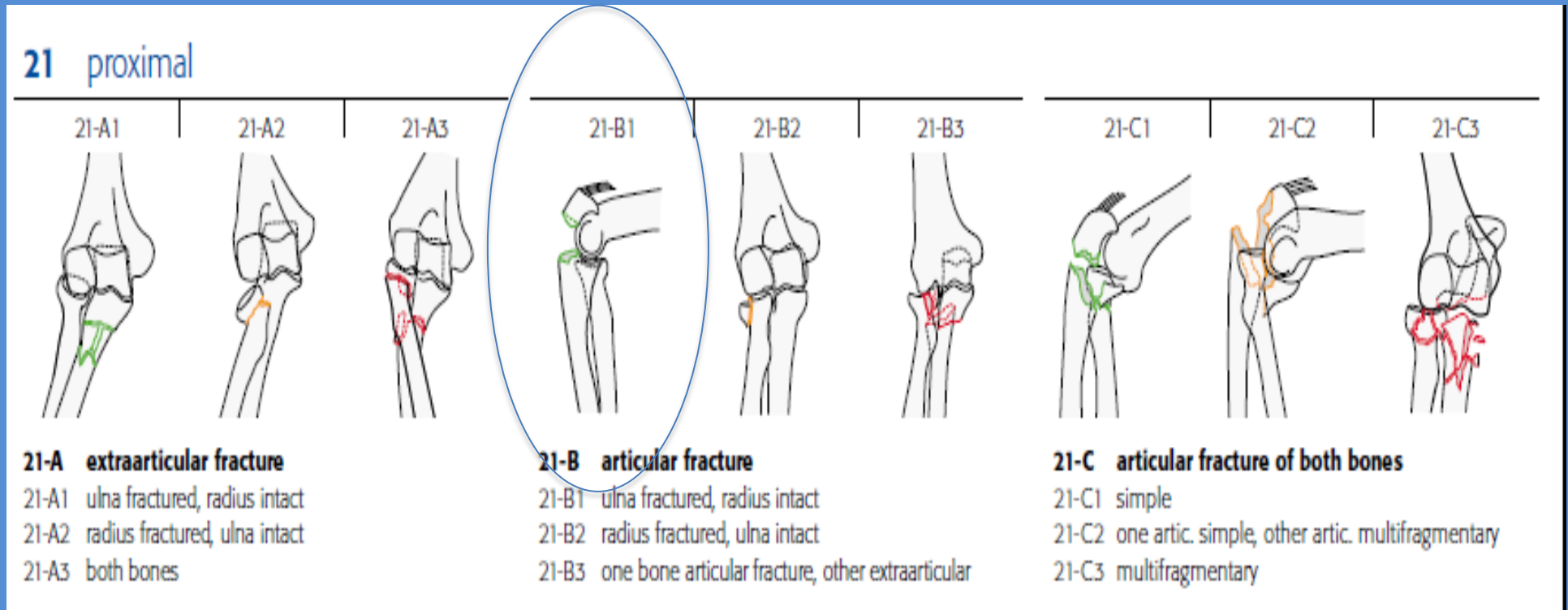


Olecranon fracture



AO BASIC 2019
Marie Fridberg
Rigshospitalet

Müller AO - classification



20% af alle frakturer i proksimale under-arm

Duckworth et Al. The epidemiology of fractures of the proximal ulna. Injury. 2012 Mar;43(3):343-6. Epub 2011 Nov 09

Mayo classification

Mayo Type I

Undisplaced



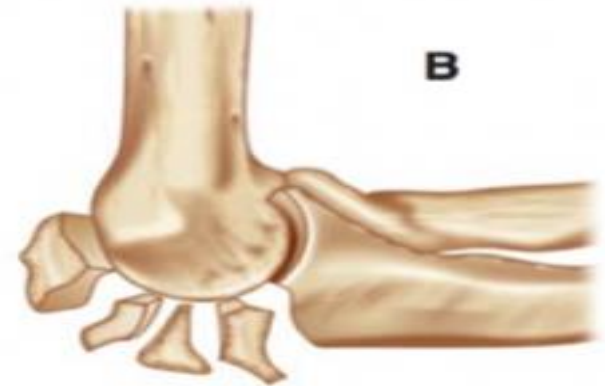
Mayo Type II

Displaced

A-Noncomminuted
B-Comminuted



A



B

Mayo Type III

Accompanying lesions-instability

A-Noncomminuted
B-Comminuted



A



B

Non operative treatment

- *Mayo type I – nondisplaced*
- *Konservativ behandling af olecranonfrakturer har for ældre patienter > 75 år, vist gode resultater i flere retrospektive serier.*
- *Duckworth et al. Prosepective randomised trial of non-operative versus operative management of olecranon fractures in the elderly. Bone Joint J 2017;99-B:964-72*
- *DOS KKR 2018: Det kan anbefales at anvende konservativ behandling til forskudte, stabile, olecranonfrakturer, Mayo type II, hos ældre patienter med lavt funktionsniveau...*

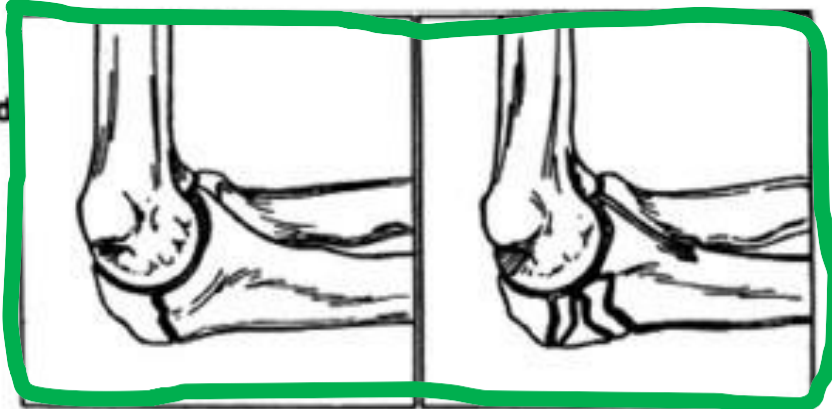
Olecranon fracture

- Why operate?
- Methods of fixation
 - Tension band
 - Plating
- Summary



Konservativ

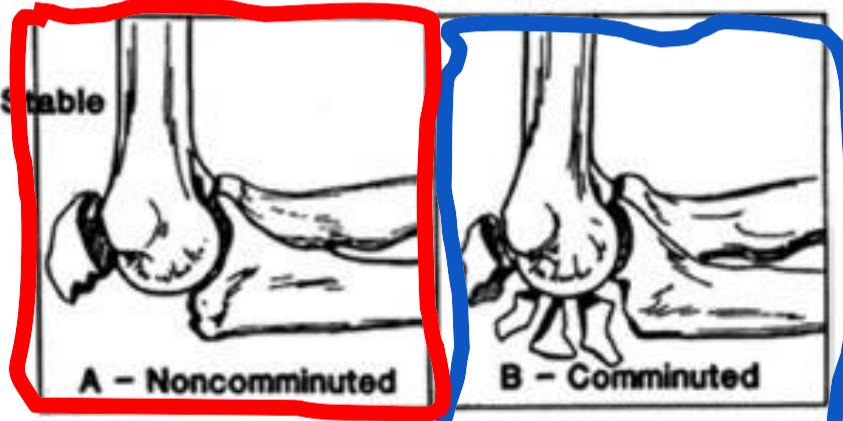
TYPE I
Undisplaced



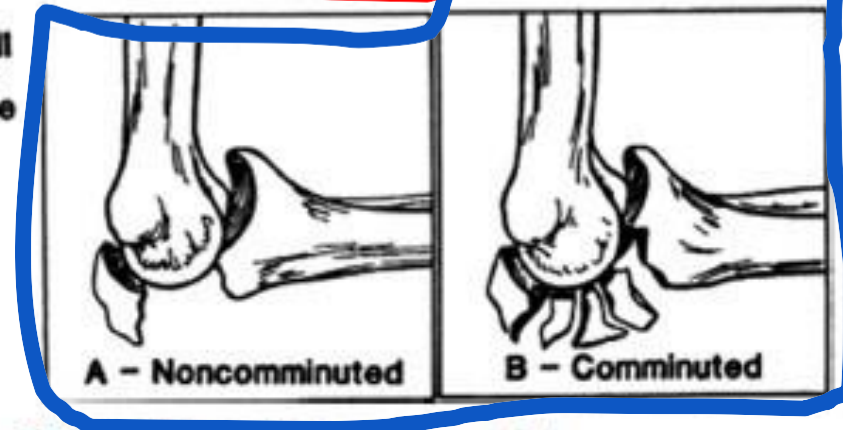
Tension band

Evt. konservativ

TYPE II
Displaced - Stable



TYPE III
Unstable



Skinne

FIGURE 1: Mayo classification of olecranon fractures.

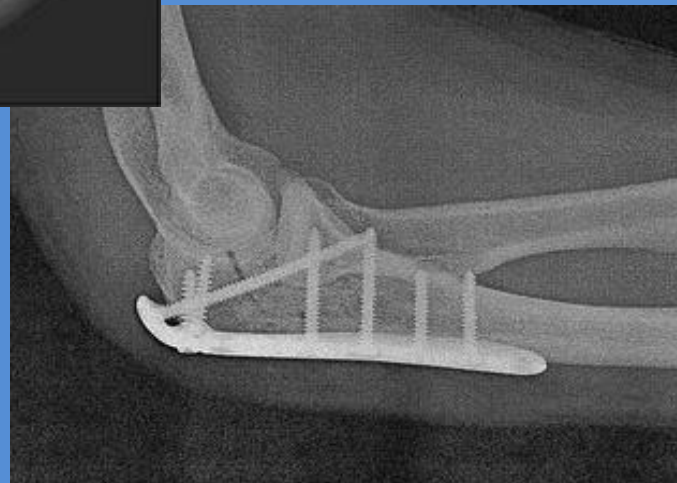
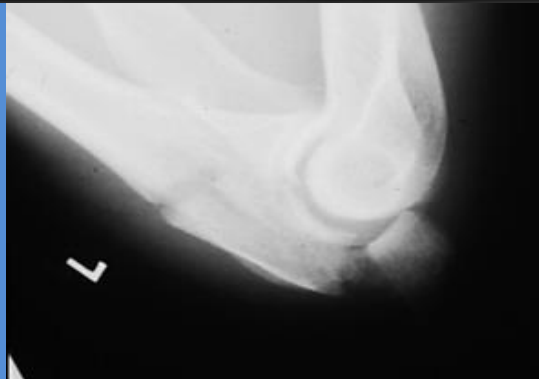
Olecranon fracture

Why operate?

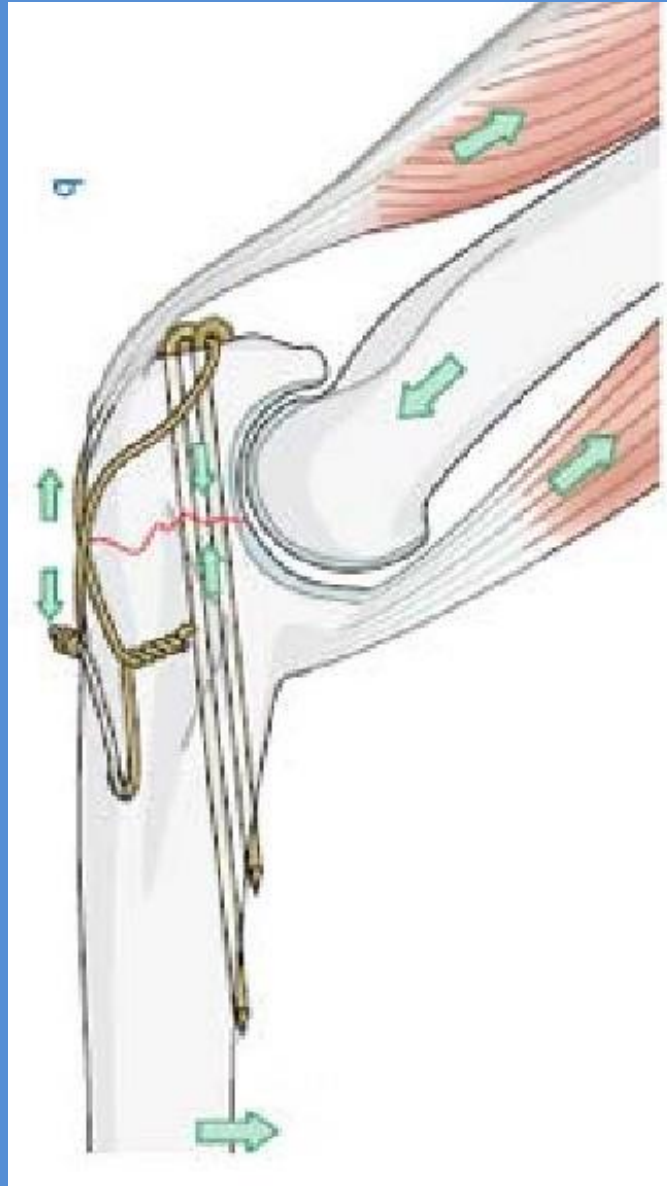
- Restore articular surface
- Achieve absolute stability
- Commence early active movement



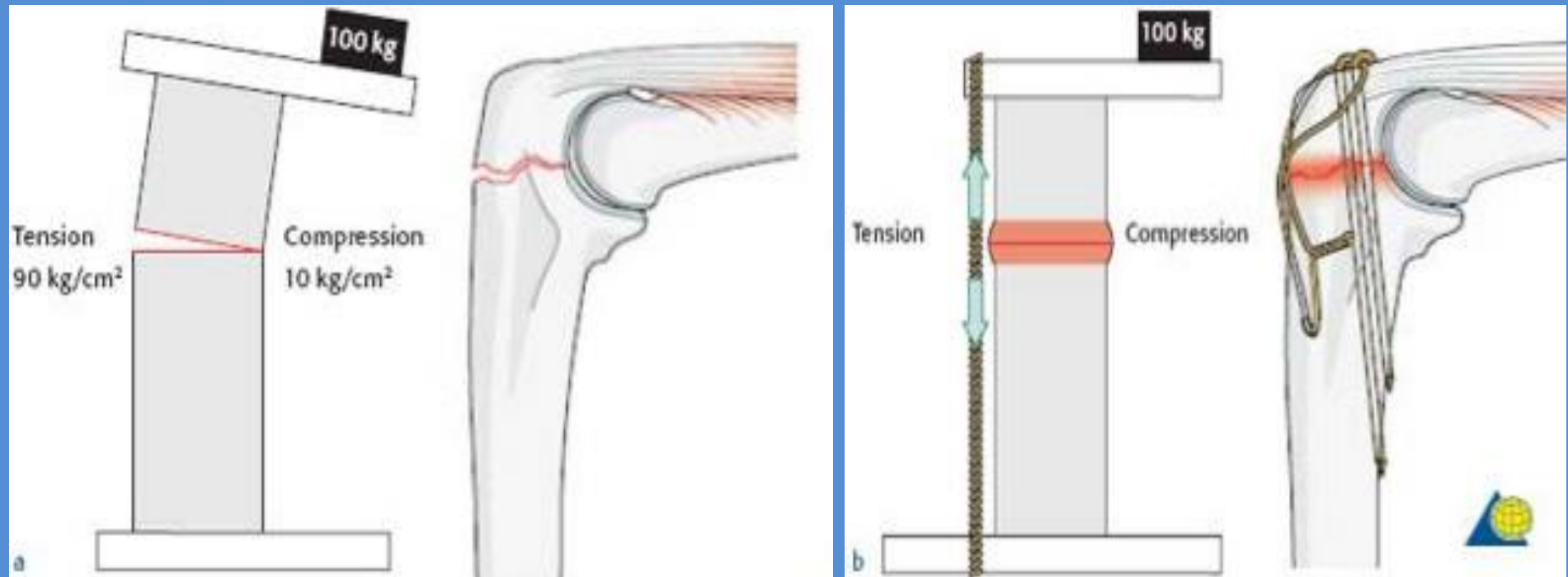
Methods of fixation?

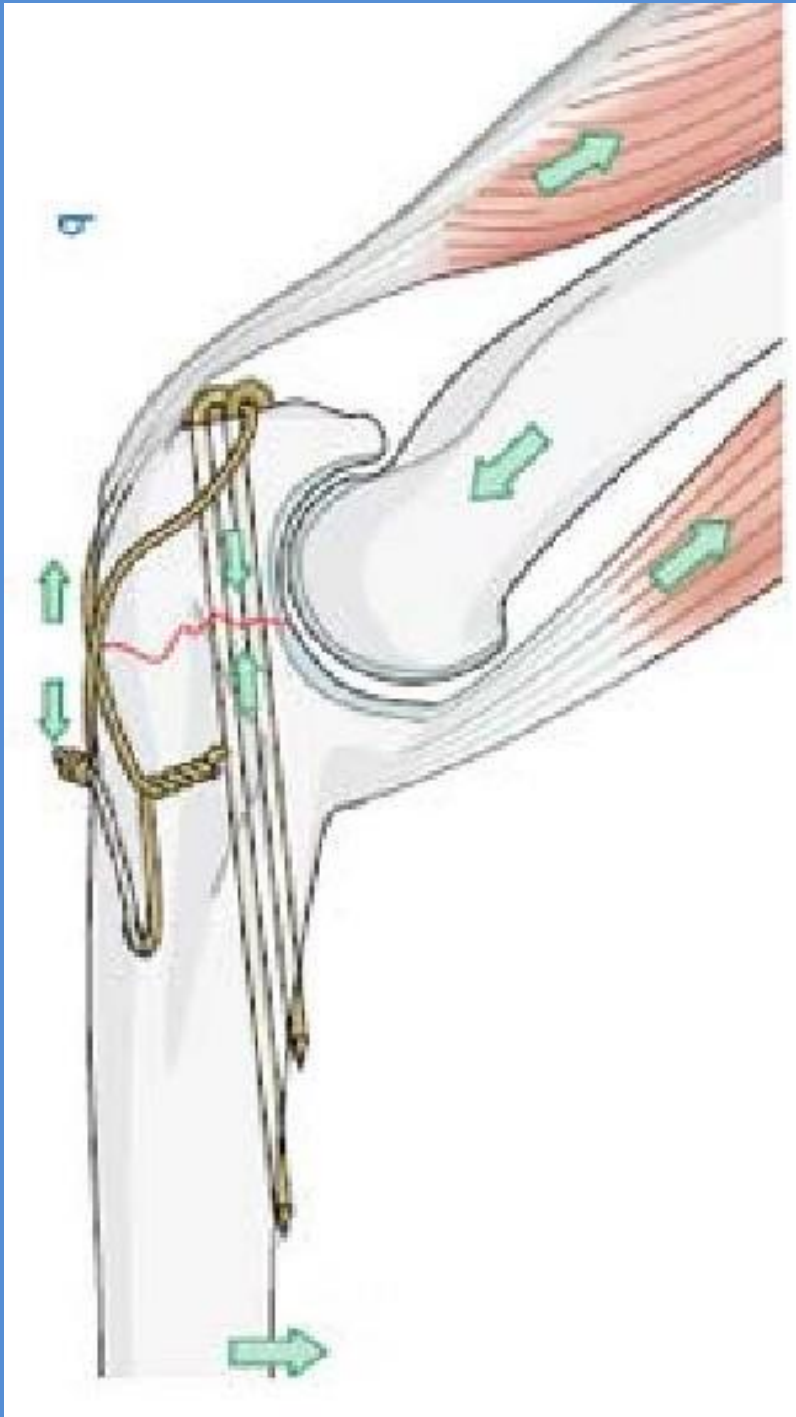


Tension band



Tension band princippet





Nøglen til at forstå.....
Tension band princippet

Tensile Force



Compression Force

How to place K-wires?



Tension Band Wiring for Olecranon Fractures: Relative Stability of Kirschner Wires in Various Configurations. Huang, Tsan-Wen et al. Journal of Trauma-Injury Infection & Critical Care. 68(1):173-176, January 2010

Tension band



Tension band

Hvad er der galt?



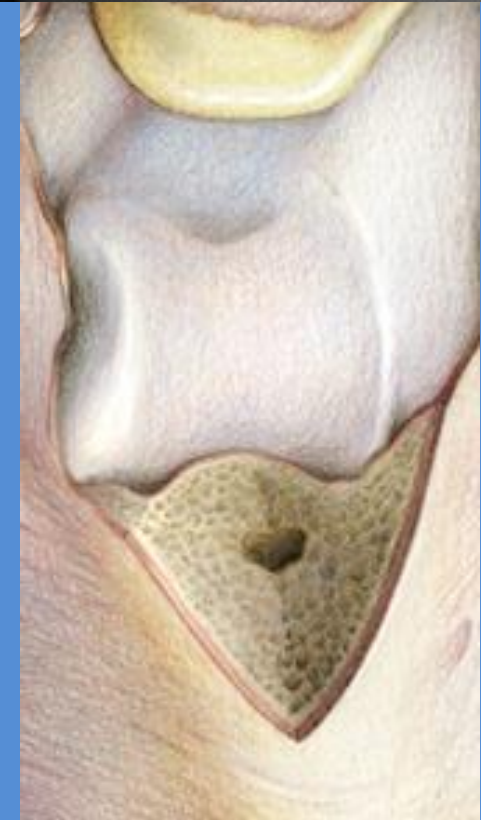
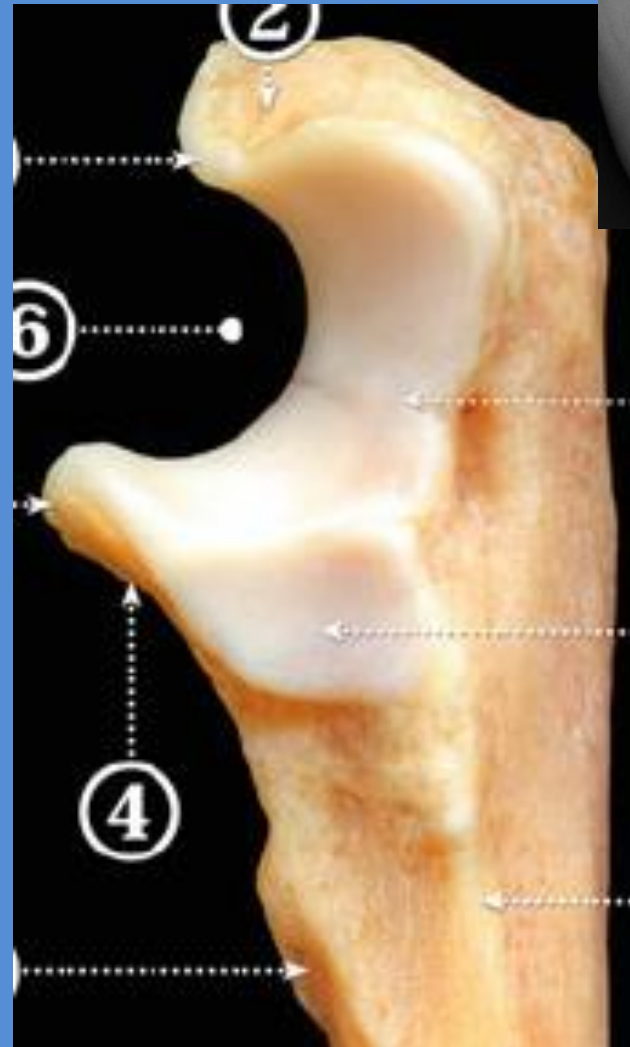
Tension band

Anatomisk overvejelse



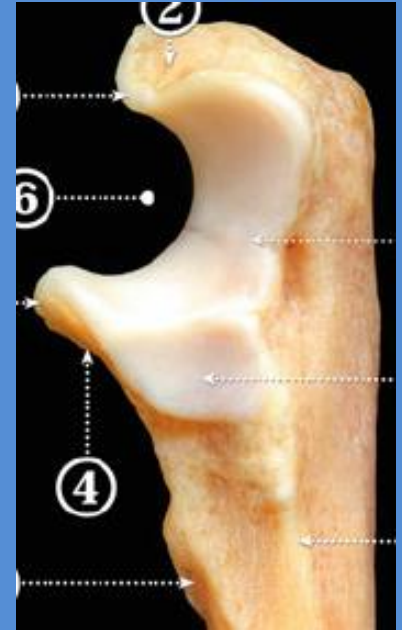
Tension band

Pitfalls



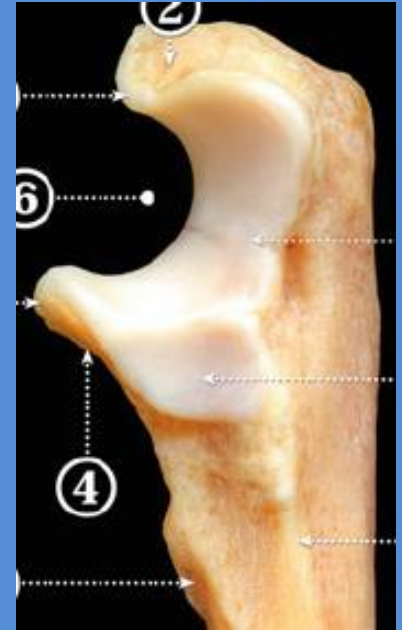
Tension band

Pitfalls



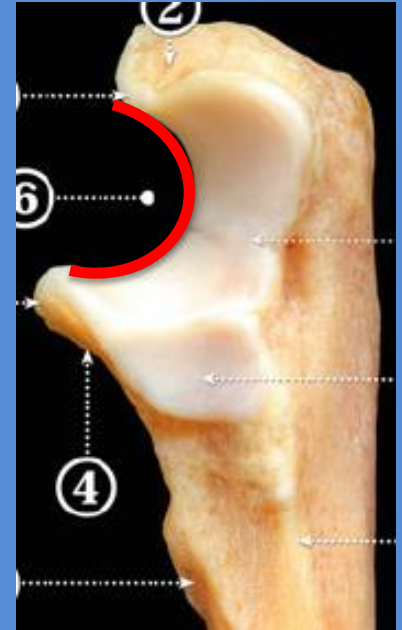
Tension band

Pitfalls



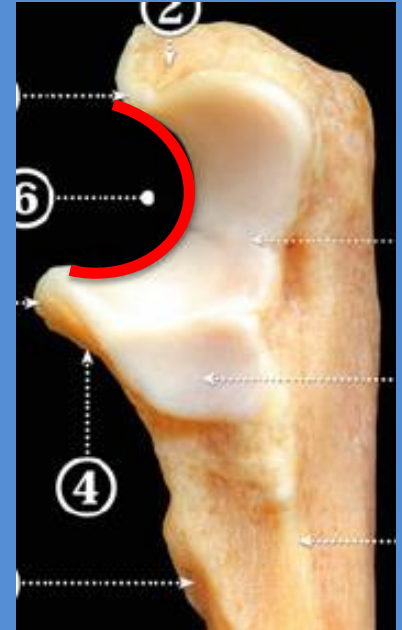
Tension band

Pitfalls



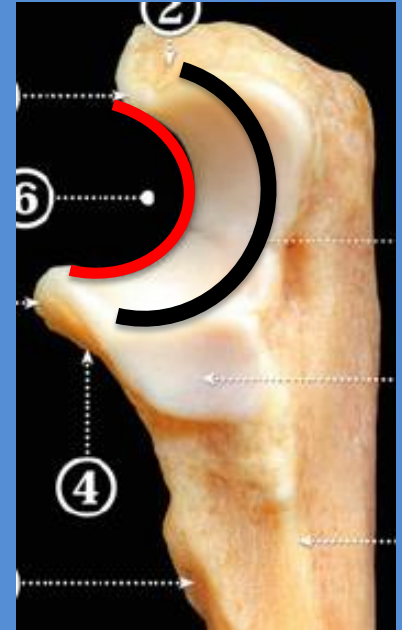
Tension band

Pitfalls



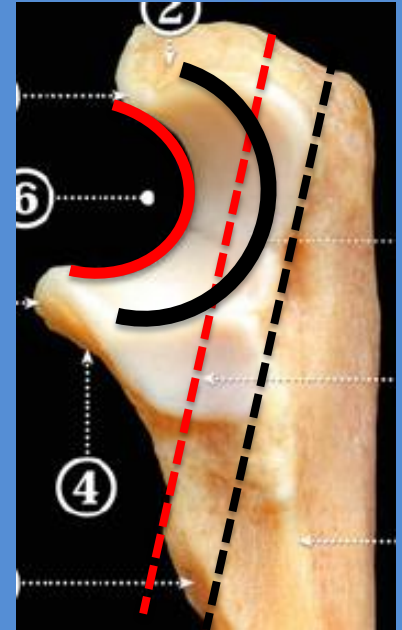
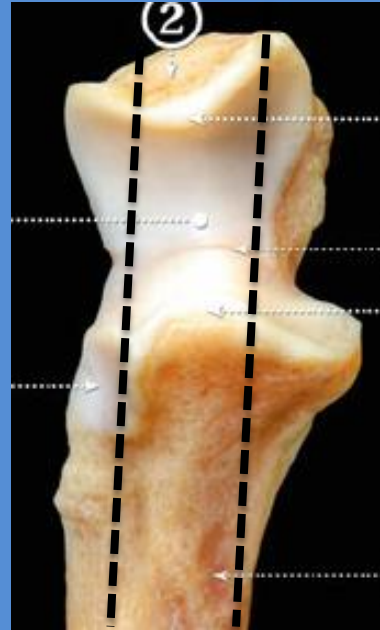
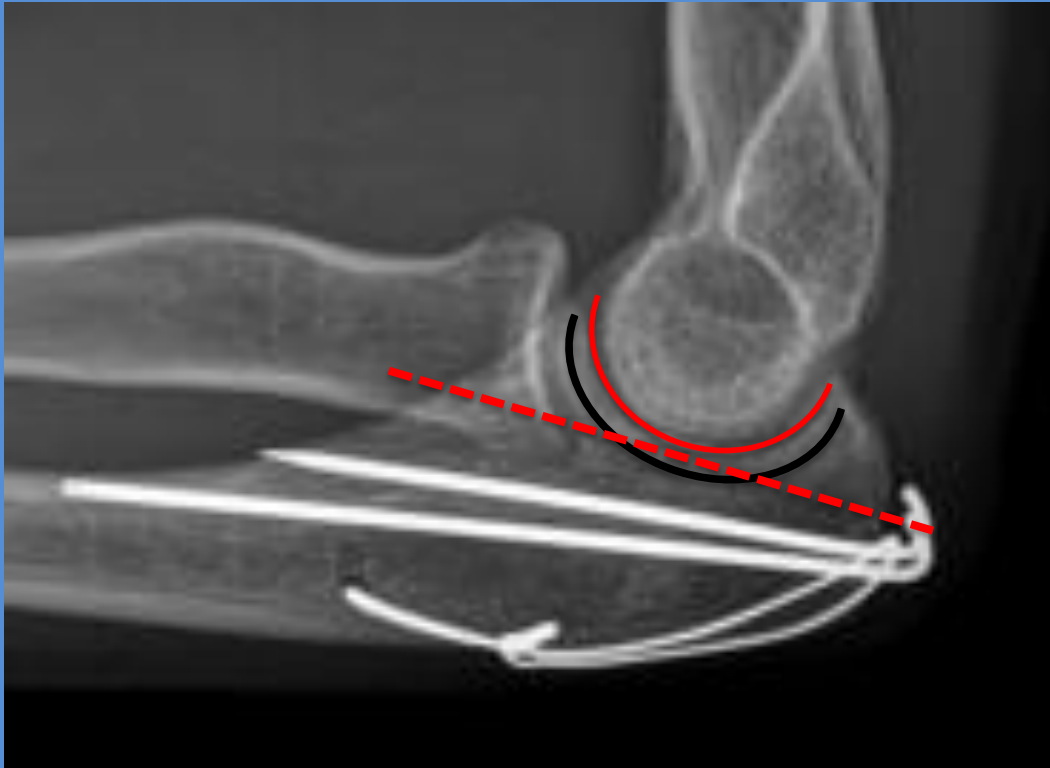
Tension band

Pitfalls



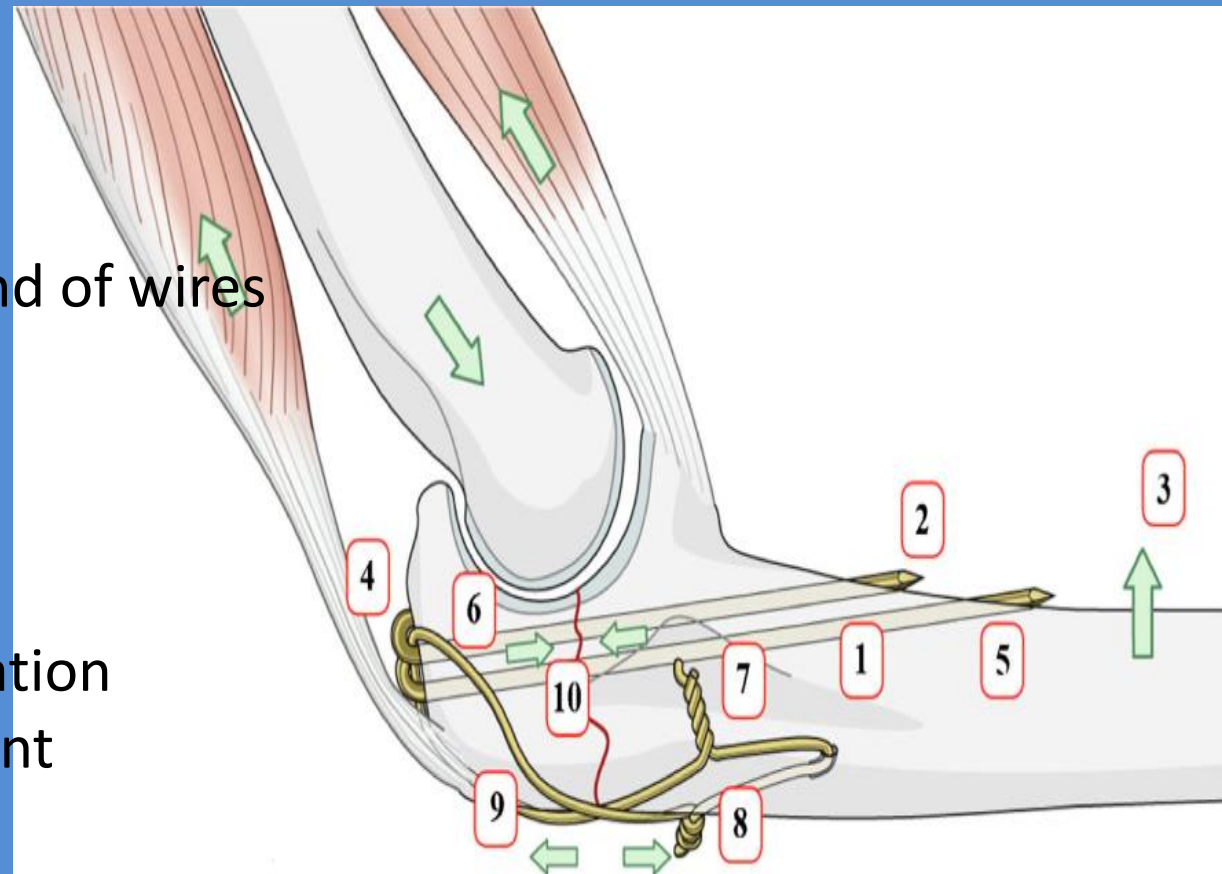
Tension band

Pitfalls



Pitfalls to success

1. Non-parallel K-wires
2. Too long K-wires
3. K-wires extending radially
4. Insufficient fixation of prox. End of wires
5. Short intramedullary K-wires
6. Perforation of the joint
7. Single wire knot
8. Jutting wire knot
9. Loose figure of eight configuration
10. Incorrect repositioning the joint



Konservativ

Tension band

Evt. konservativ

Skinne

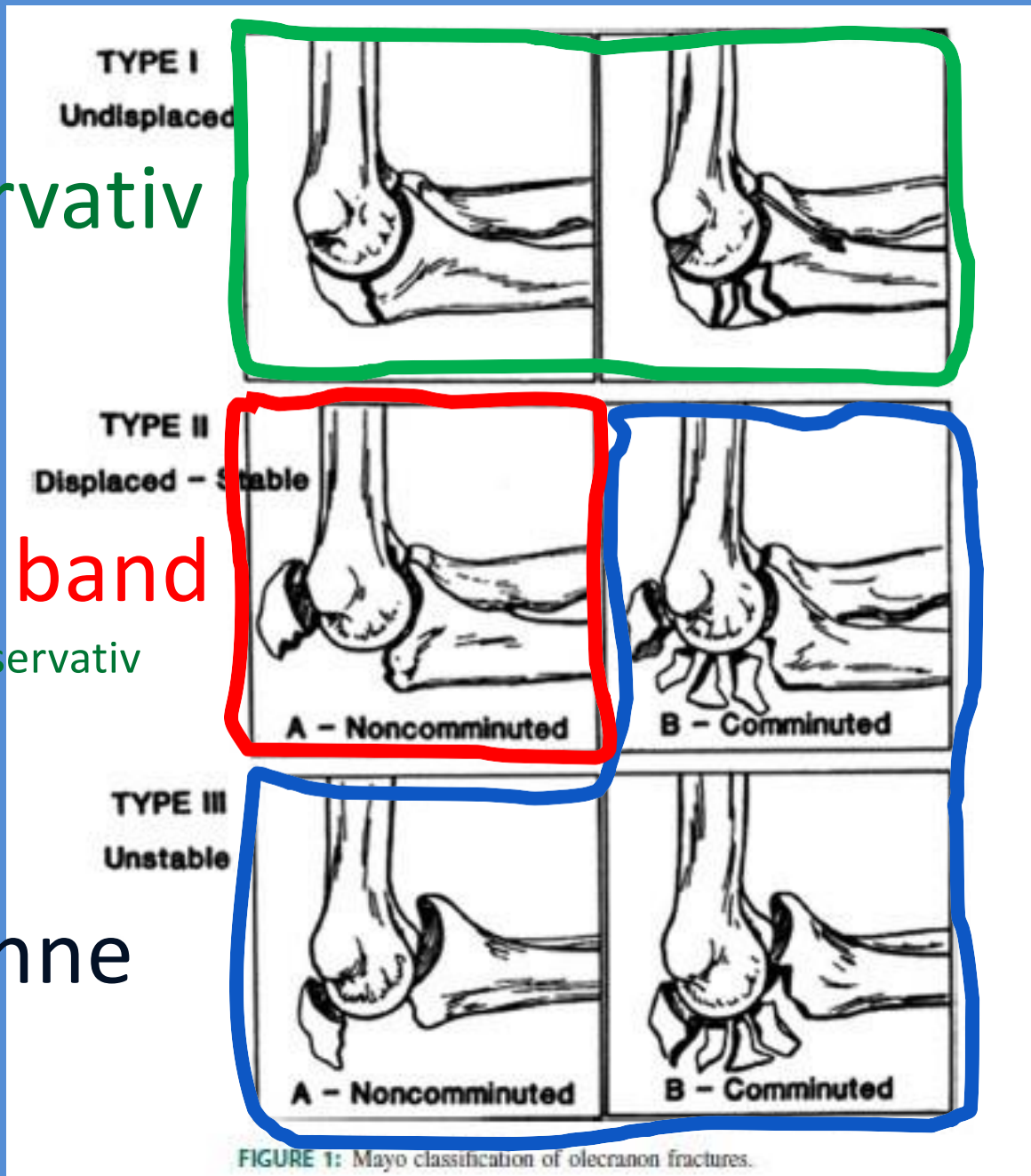
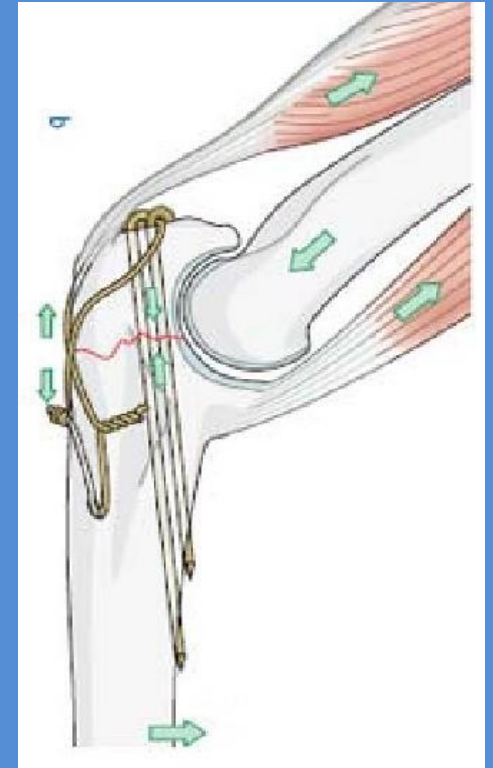
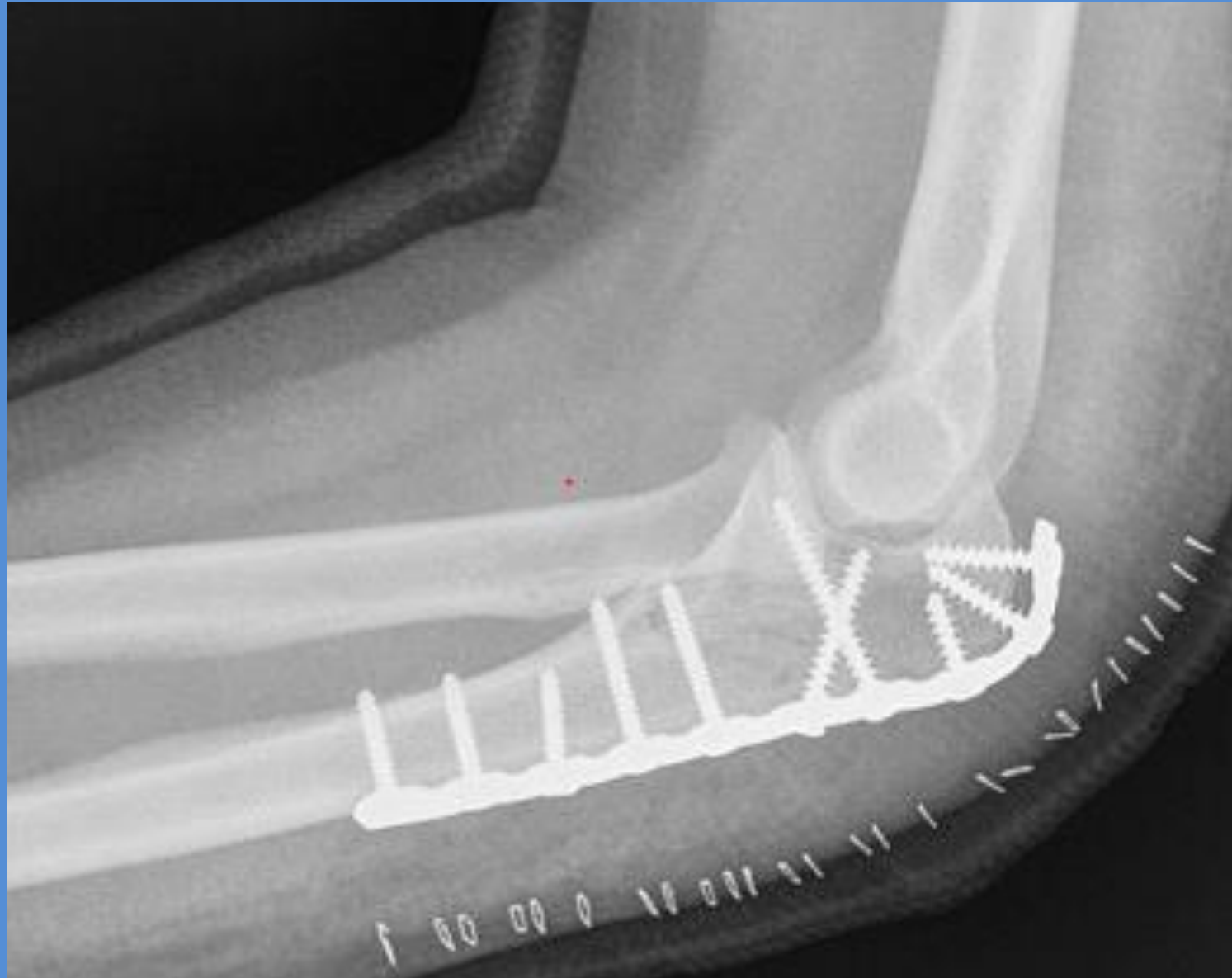


FIGURE 1: Mayo classification of olecranon fractures.



Plate



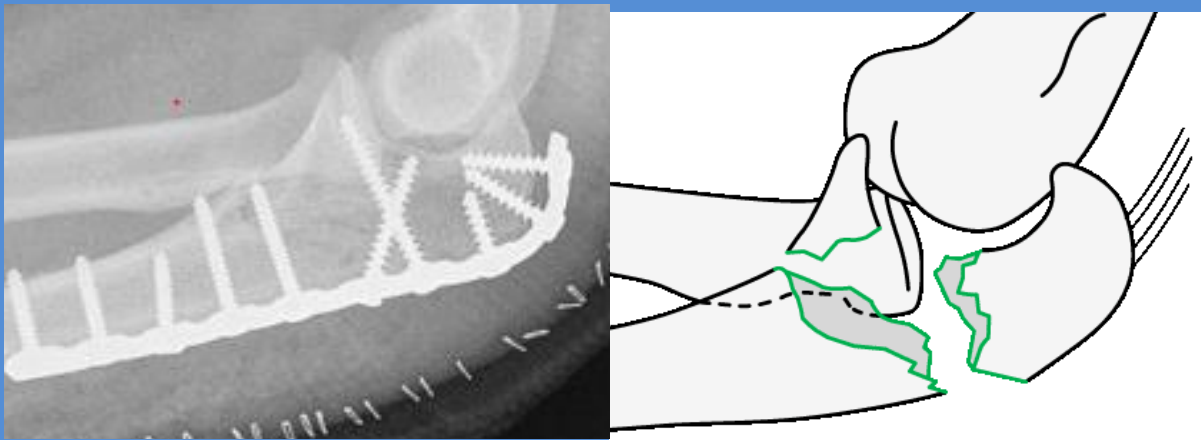
Summary – Tension band fixation

- Fracture: Transverse not comminute
- K-wire: 1.6mm. Anterior cortex or distal ulnar canal
- K-wire penetration: <10 mm beyond the anterior cortex
- Tension band: 1.0 mm stainless steel wire, 2 knots



Summary – Plating and non operative treatment

- Non displaced MAYO I and Displaced MAYO II in elderly
NON OPERATIVE
- Comminute fracture
PLATE



?