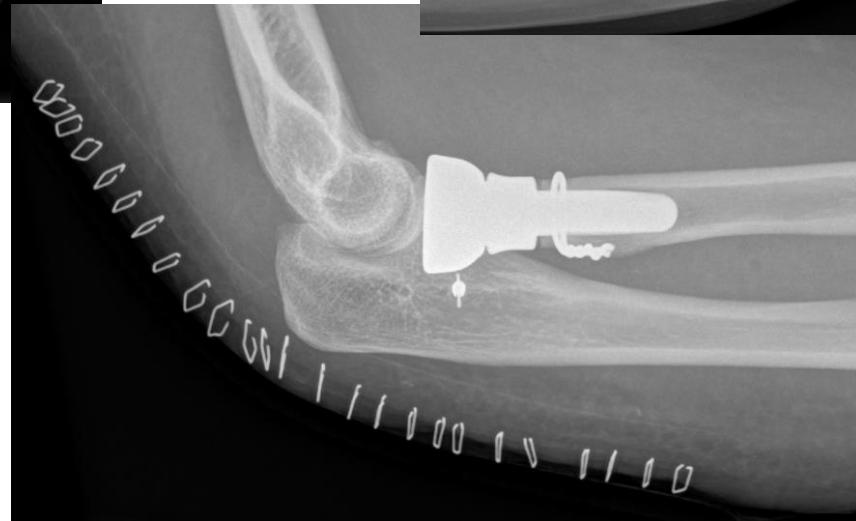


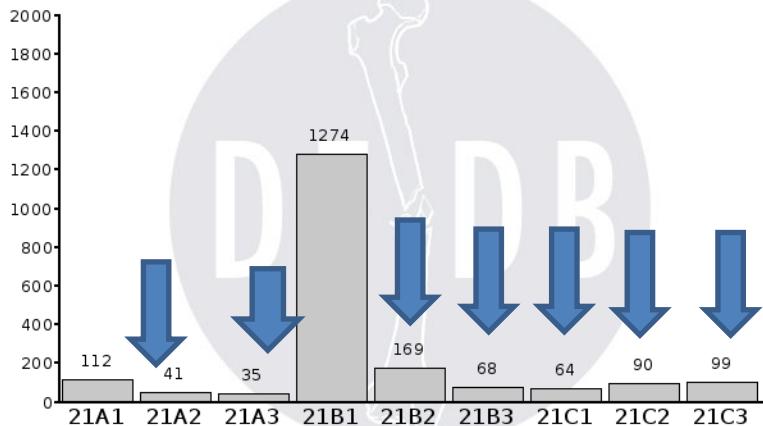
Caput Radi-Fix, Replace or Resect



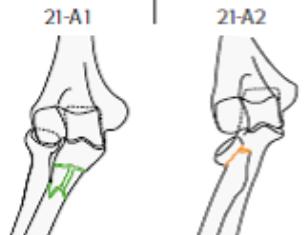
Fracture types

AO klassifikation, voksne

Proksimal Antebrachium



21 proximal



21-A extraarticular fracture

21-A1 ulna fractured, radius intact

21-A2 radius fractured, ulna intact

21-A3 both bones

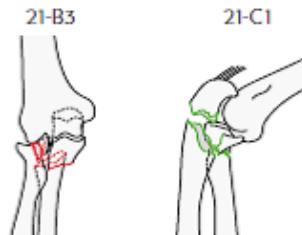


21-B articular fracture

21-B1 ulna fractured, radius intact

21-B2 radius fractured, ulna intact

21-B3 one bone articular fracture, other extraarticular

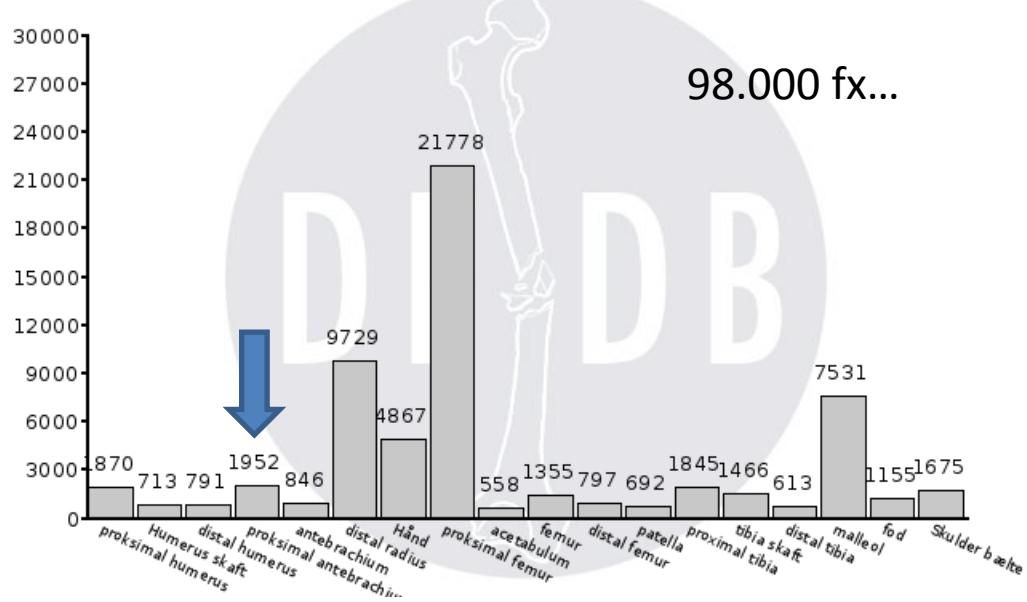


21-C articular fracture of both bones

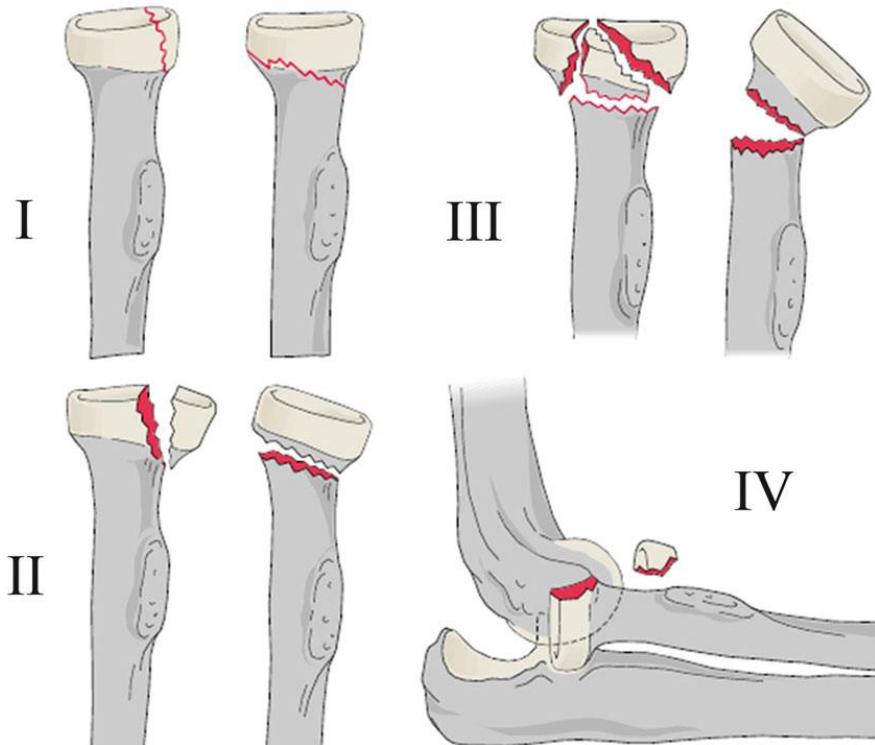
21-C1 simple

21-C2 one artic. simple, other artic. multifragmentary

21-C3 multifragmentary



Mason Classifikation



- Type I
 - Conservativ treatment
- Type II
 - Conservativ/operative
- Type III/IV
 - operative

Mason type II/III/IV

- Operative options
 - Fixation - ORIF
 - Screw
 - Biodegradable
 - Plate
 - Excision
 - Replacement
- Aim
 1. Stability
 2. Painfree
 3. Strong

Most patients has reduced range of motion, but good function

Treatment options

Mason type II

- Conservative – immobilization ?
- Operative
 - Fixation - ORIF
 - Screw
 - Biodegradable
 - Plate
 - Excision
 - Replacement



Conservative Treatment

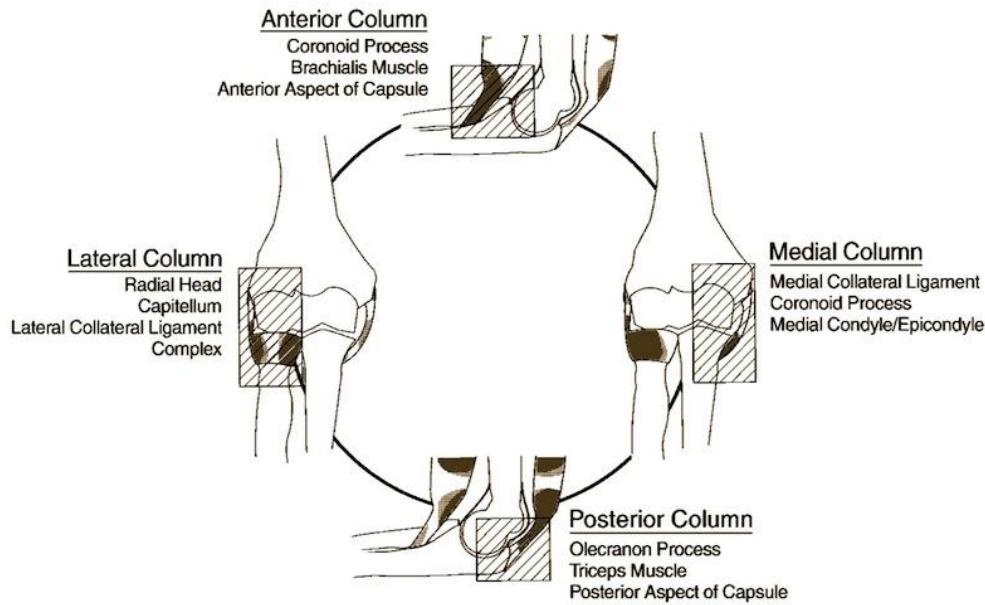
- Mason II
- Systematic review 717 studies
- 9 retrospective case series (level IV) describing 224 patients included
- Nonoperative treatment was successful in 114 of 142 patients (80%) pooled from the studies (42% to 96% success in individual studies).
- Open reduction and internal fixation was successful in 76 of 82 patients (93%) (81% to 100% success in individual studies).



JHandSurgery Vol 37A, July 2012

Ligaments and capsula

- Surgeon must be capable of:
- Handling de-tach and re attach of ligaments
- Reconstruction of ligaments
- Sutur of anterior capsula
- Osteosynthesis and prosthesis surgery



Questions to ask:

Can I fix it?

-

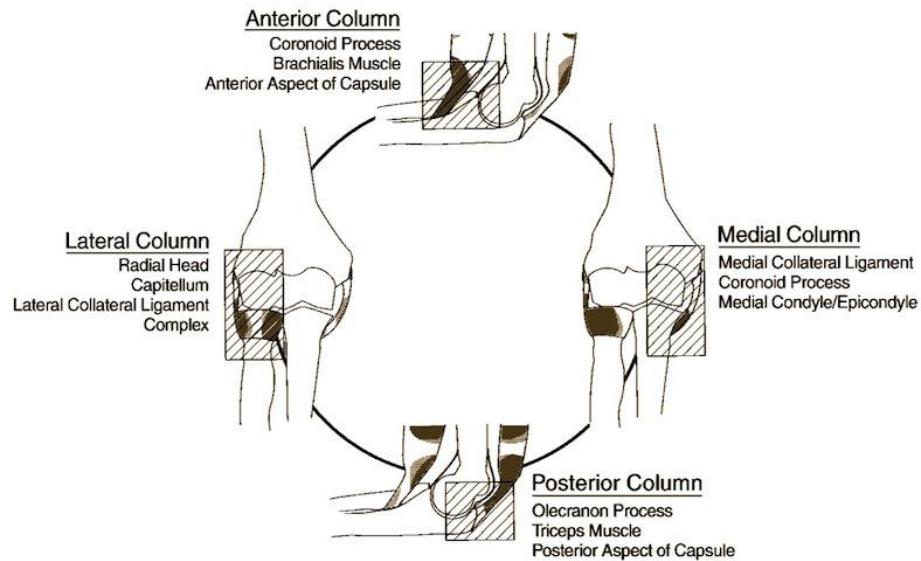
What other concomitant injuries are there?

-

Is there a need for a radial head ?

Surgical strategy

- Lateral position
- Dorsal approach
- Detach annular ligament
- ORIF – lag screws/?
- Replace/Resect
- Re-fixation annular ligament
 - Anchor + fiberwire
- Focus on stability



Treatment of radial head Mason type II fractures

Review 2017

- No clear evidence.
- Amount of acceptable intraarticular displacement and angulation has not been conclusively defined.
- The best operative technique is still undefined.

Jordan & Jones
. Open Orthop Jour.
2017.

Indications for ORIF – Mason II fractures

Mason II (segmental fractures):

1. Fracture size > 25 - 33%
2. Displacement > 2 - 3 mm
3. Instability.
4. Mechanical block of motion

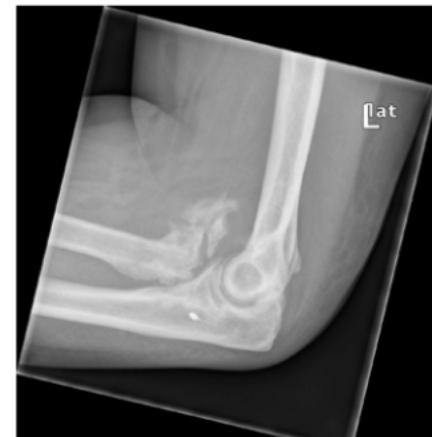
Generally more complications and reoperations with operative treatment.

- Shmueli & Herold. J Bone Joint Surg Br. 1981.
Sanders & French. Am J Sports Med. 1986.
McArthur. Clin Orthop. 1987.
Geel & Palmer. Clin Orthop. 1992.
Esser et al. J Orthop Trauma. 1995.
Ring et al. J Bone Joint Surg Am. 2002.
Struijs et al. Arch Orthop Trauma Surg 2007. (syst review)
Ring. Injury. 2008.
Ruschelsmann et al. JBJS. 2013.
Keil et al. J Orthop Surg & Res. 2018.

Mason II Radial head fractur

Conclusions

1. Consider associated lesions!
2. Be aware of instability. Probably most important!
3. Mechanical block of flexion and rotation.
4. With up to 50% radial involvement, no instability and no block to motion we offer conservative treatment.
5. We do early x-ray.
6. We do early mobilisation within 2 weeks.
7. Surgical treatment is rare.
8. Be careful with early radial head resection, we prefer delayed resection when indicated.



Mason type III Resect.



CT



Ligament repair-stability





A comparison of the open reduction-internal fixation and resection arthroplasty techniques in treatment of Mason Type 3 radial head fractures

Yunus Emre Akman ^{a,*}, Erhan Sukur ^b, Esra Circi ^b, Osman Nuri Ozyalvac ^a, Fatih Ozyer ^c, Yusuf Ozturkmen ^b

^a Metin Sabanci Baltalimani Bone Diseases Training and Research Hospital, Istanbul, Turkey

^b Istanbul Education and Research Hospital, Istanbul, Turkey

^c Fethiye Ozel Letoon Hospital, Muğla, Turkey

2009-2013, 34 patients with **isolated** comminuted fractures of the radial head (**Mason T** had been operated

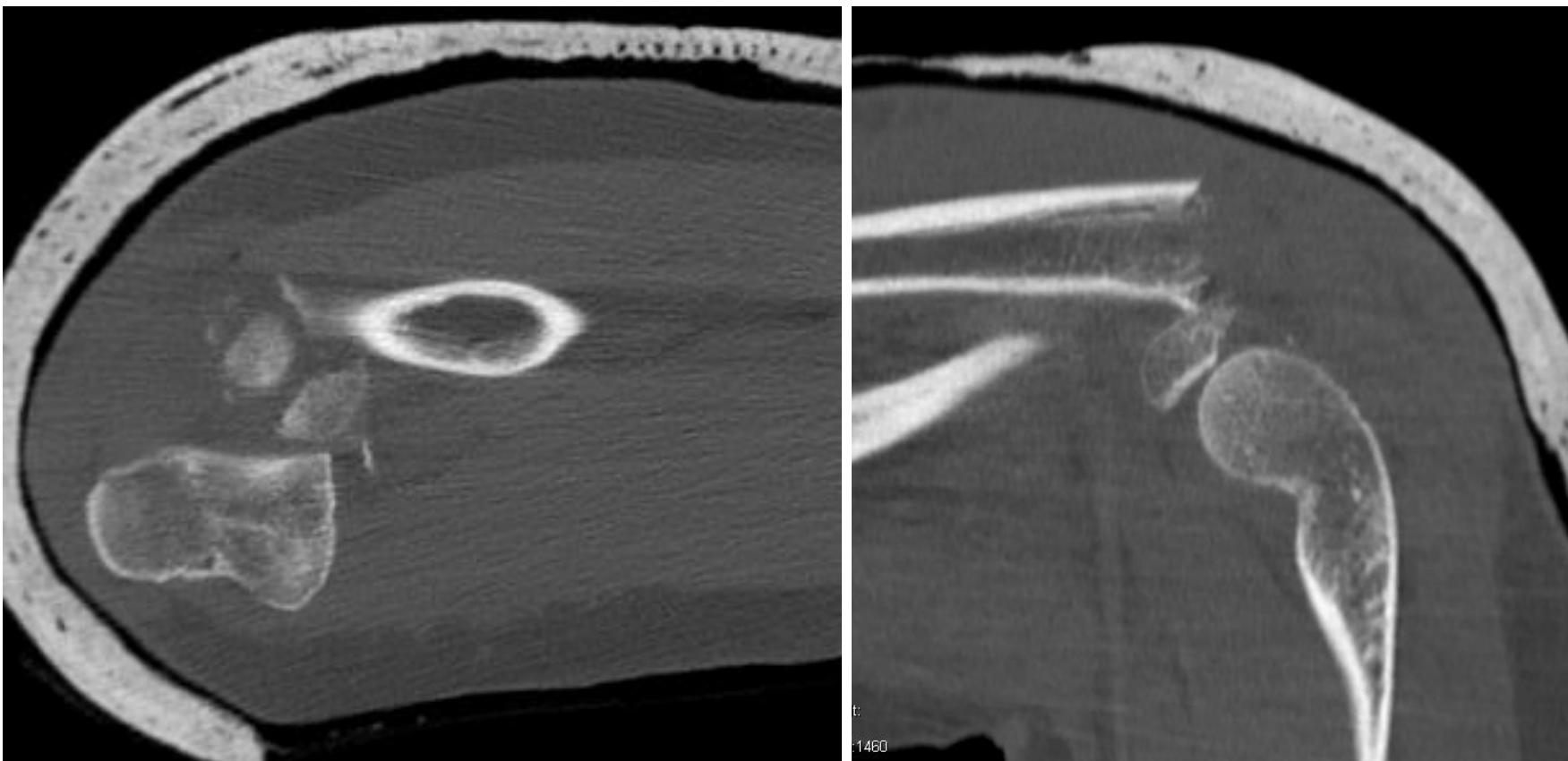
- ORIF in 19 patients
- Resection arthroplasty in 15 patients
- Mean follow-up 44 months

Good functional outcomes after resection arthroplasty

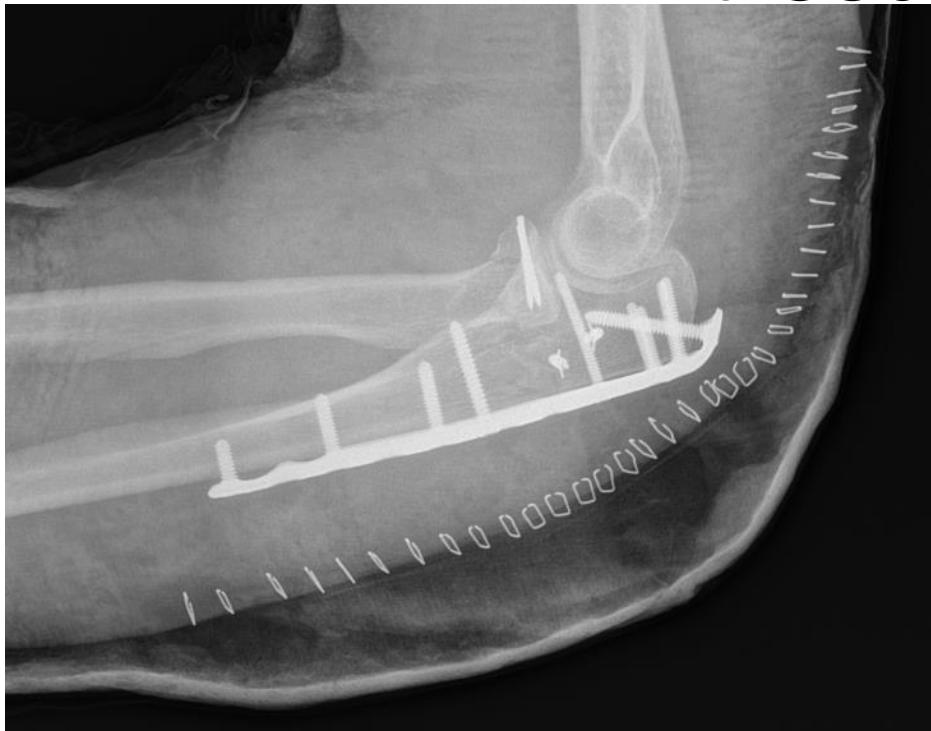
Mason IV-Fixation



CT



Post-op



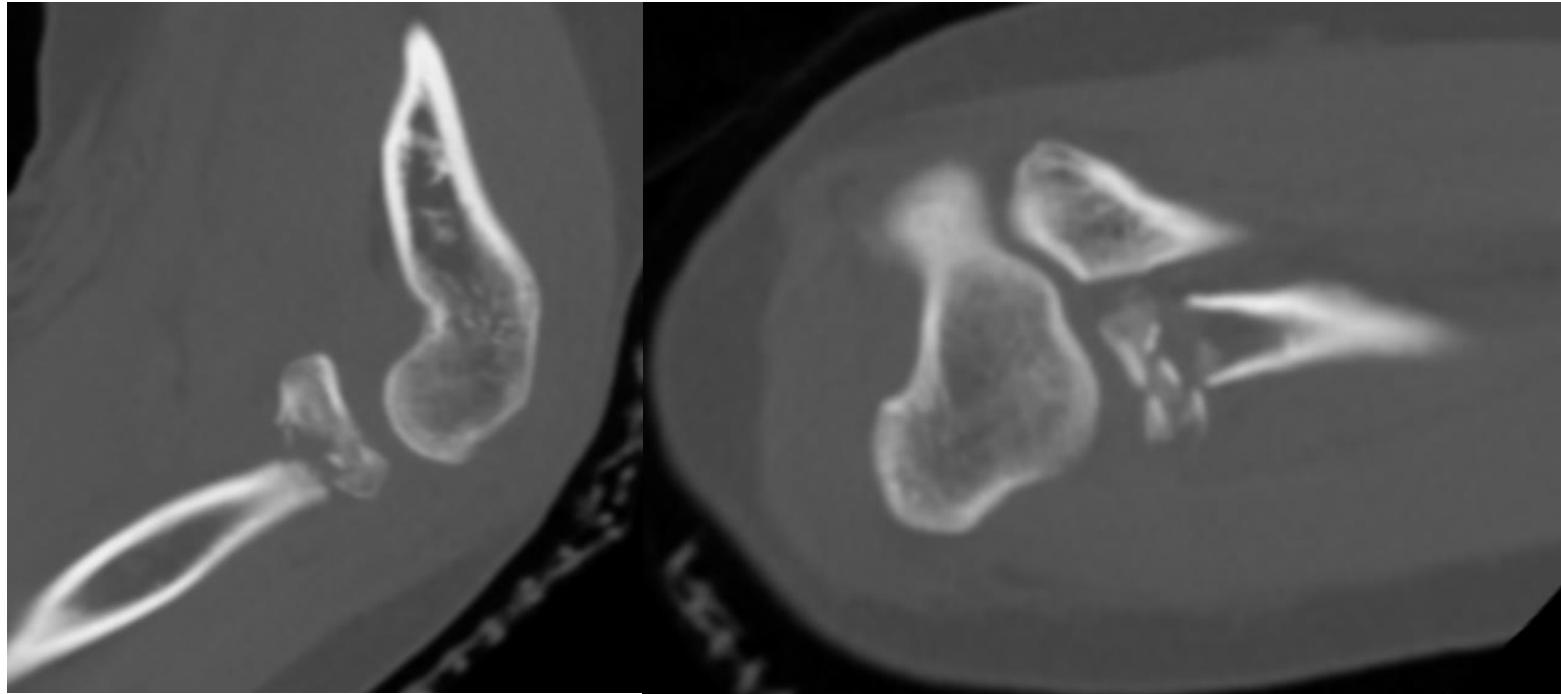
Mason IV - replace



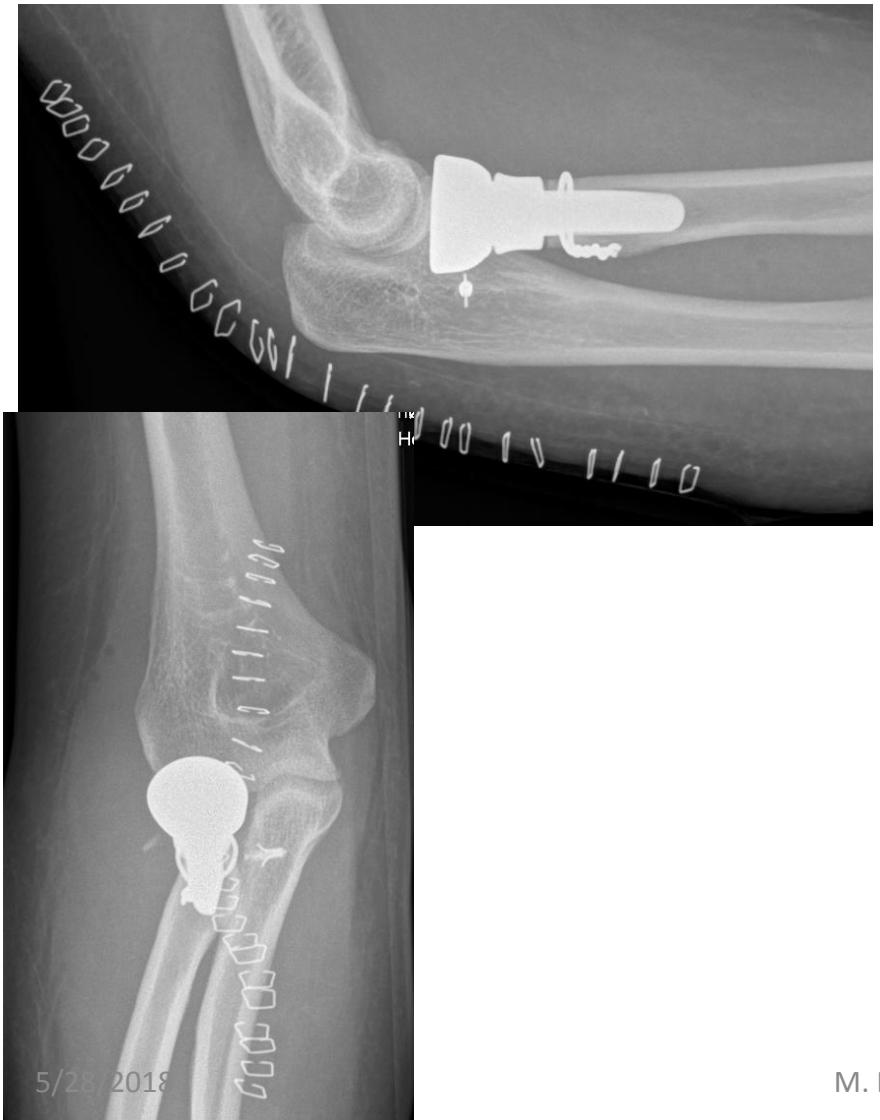
After reduction



CT Scan is a must in complex elbow fractures



Post op



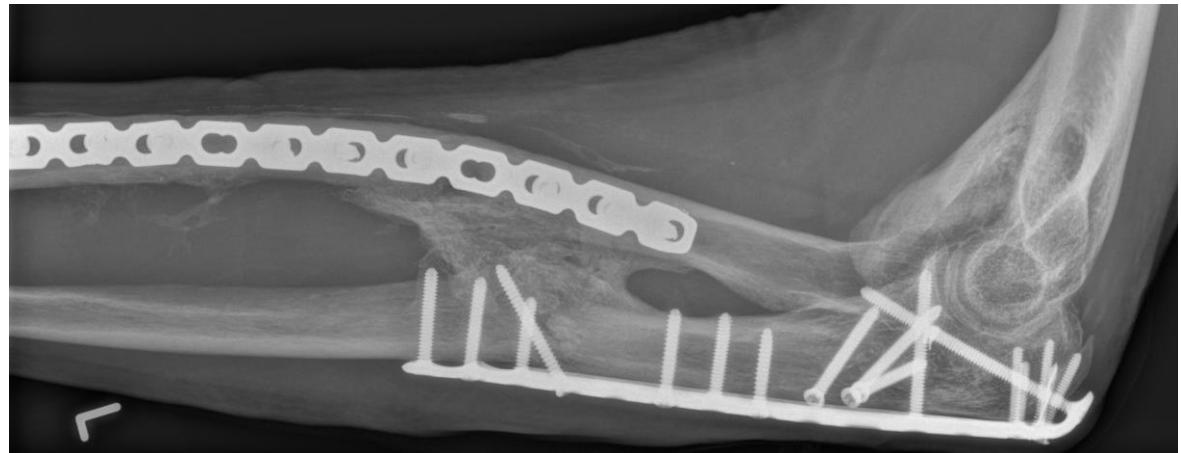
3 months



Heterotrophic ossification

- In complex-combination fractures.

- Be aware of heterotrophic ossification



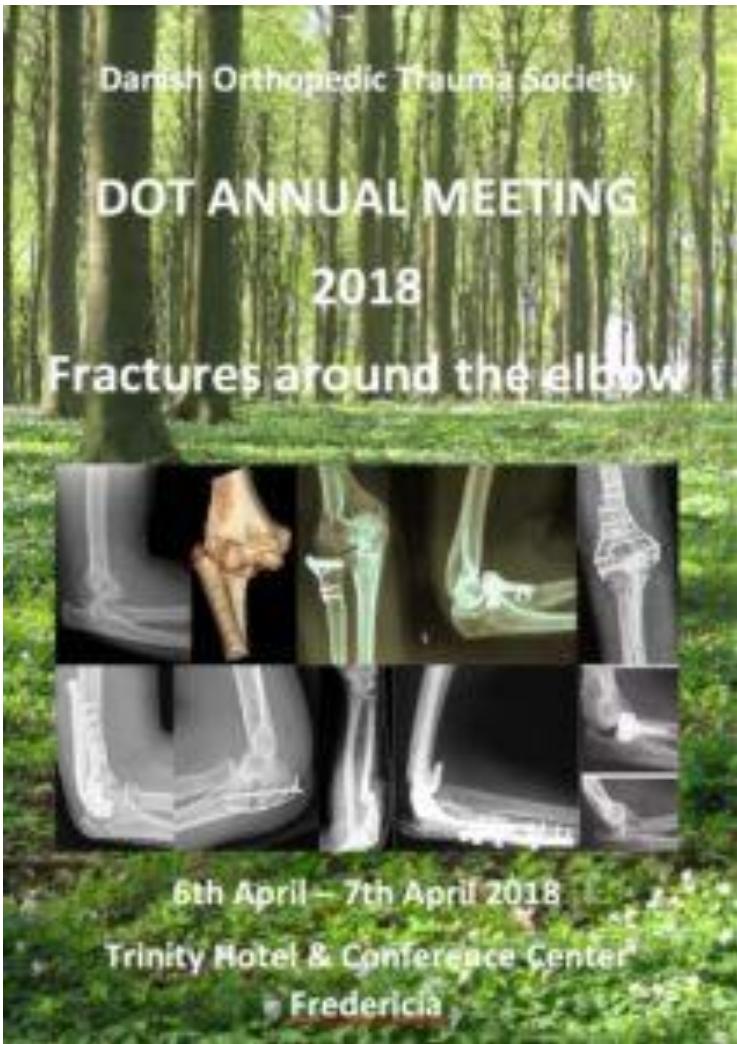
- Prevent with N.S.A.I.D

Take home message

- Mason type 1- conservative.
- Mason type II/III/IV
- Always CT for planning
- Surgical goal is stability
- And a painfree strong elbow
- Complex surgery



Further information



- More than 20 lectures on fractures around the elbow
- www.traumeselskab.dk