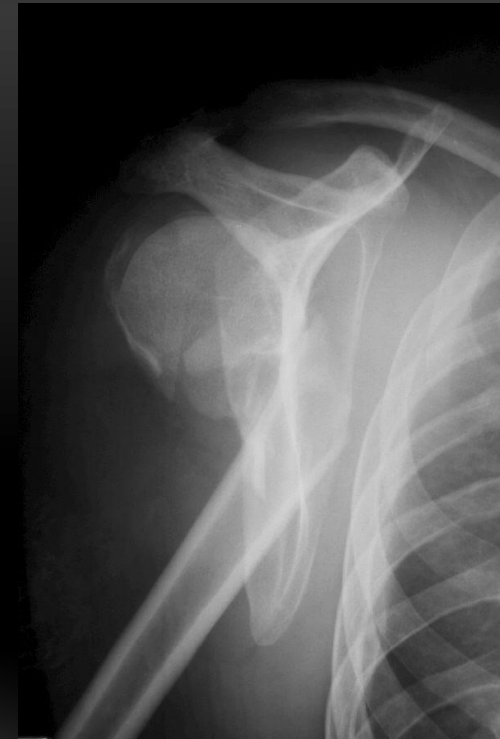




ORU

Orthopaedic Research Unit
Odense • Svendborg



PROXIMAL HUMERUSFRAKTURER

Morten Schultz Larsen

Odense Universitetshospital

Ortopædkirurgisk afd.

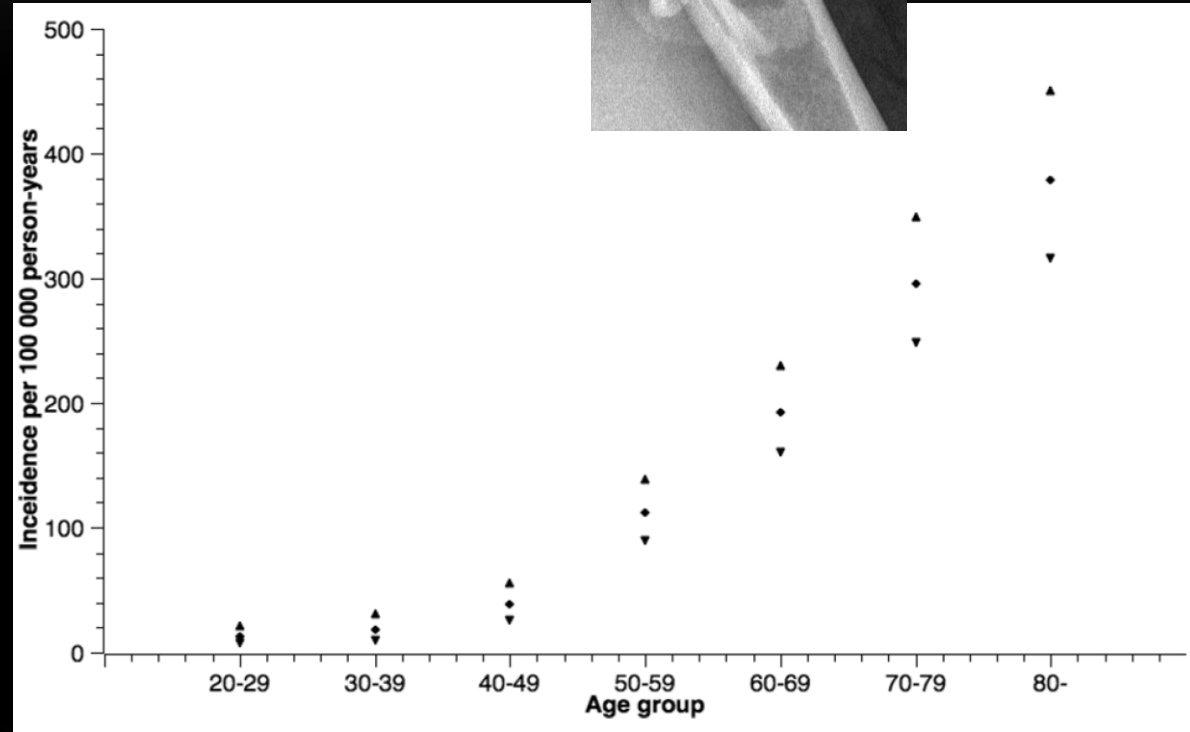


EPIDEMIOLOGY



↑ INCIDENS MED ALDER

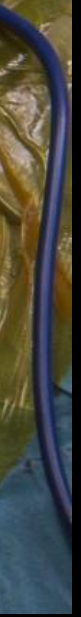
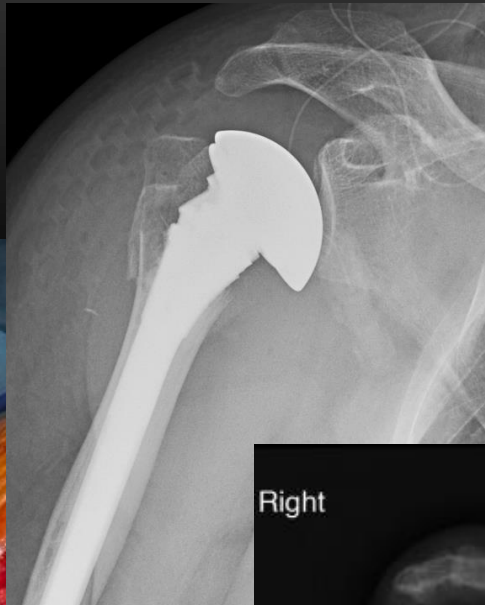
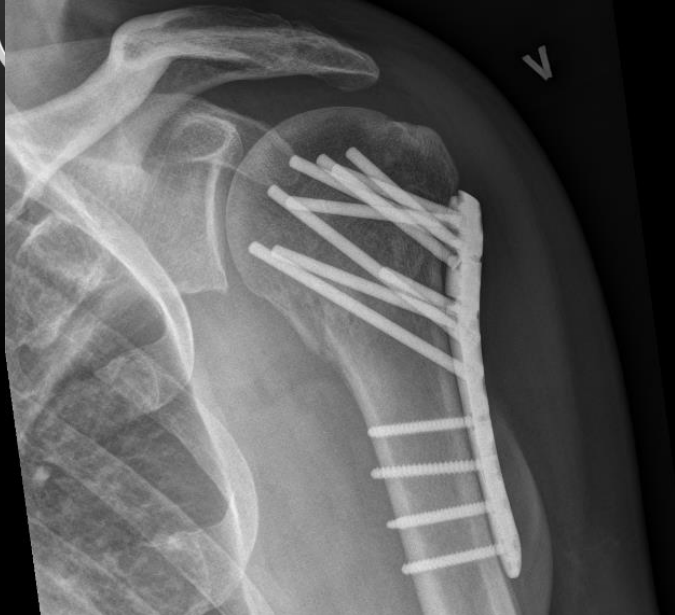
- 5 % AF ALLE FRAKTURER
- 45 % AF HUMERUS FX
- FLEST (75%) WOMEN



Launonen et al. Arch Osteoporos 2015

BEHANDLING





BEHANDLING

KORT KLINISK RETNINGSLINJE (DOS 2019)

- Alder > 60 år Displacerede frakturer efter Neers klassifikation
- Ingen studier af moderat eller høj kvalitet har fundet nogen klinisk eller statistisk relevant forskel mellem kirurgisk og ikke-kirurgisk behandling af displacerede proximale humerus frakturer hos ældre.
- Vi anbefaler derfor at behandlingen af disse frakturer som udgangspunkt bør være ikke kirurgisk ↑↑
- I de inkluderede studier indgår patienter med displacerede 2-, 3-, og 4-part frakturer. Det er muligt at andre frakturtyper (for eksempel luksationsfrakturer eller caput-split frakturer) samt yngre patienter kan have gavn af operativ behandling ✓

PROFHER STUDY

- RCT
- Alle > 18 år
- Ingen forskel
 - Oxford Shoulder Score
 - EQ-5D



■ TRAUMA

Five-year follow-up results of the PROFHER trial comparing operative and non-operative treatment of adults with a displaced fracture of the proximal humerus

H. H. Handoll,
 A. Keding,
 B. Corbacho,
 S. D. Brealey,
 C. Hewitt,
 A. Rangan

*From University of
 York, York, United
 Kingdom*

■ H. H. Handoll, DPhil, Reader
 in Orthopaedics, School of
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 and Social Care Institute,
 Teesside University,
 Middlesbrough, Tees Valley
 TS1 3BA, UK.

■ A. Keding, BSc, MSc,
 Statistician
 ■ B. Corbacho, BSc, MSc,

Aims

The PROximal Fracture of the Humerus Evaluation by Randomisation (PROFHER) randomised clinical trial compared the operative and non-operative treatment of adults with a displaced fracture of the proximal humerus involving the surgical neck. The aim of this study was to determine the long-term treatment effects beyond the two-year follow-up.

Patients and Methods

Of the original 250 trial participants, 176 consented to extended follow-up and were sent postal questionnaires at three, four and five years after recruitment to the trial. The Oxford Shoulder Score (OSS; the primary outcome), EuroQoL 5D-3L (EQ-5D-3L), and any recent shoulder operations and fracture data were collected. Statistical and economic analyses, consistent with those of the main trial were applied.

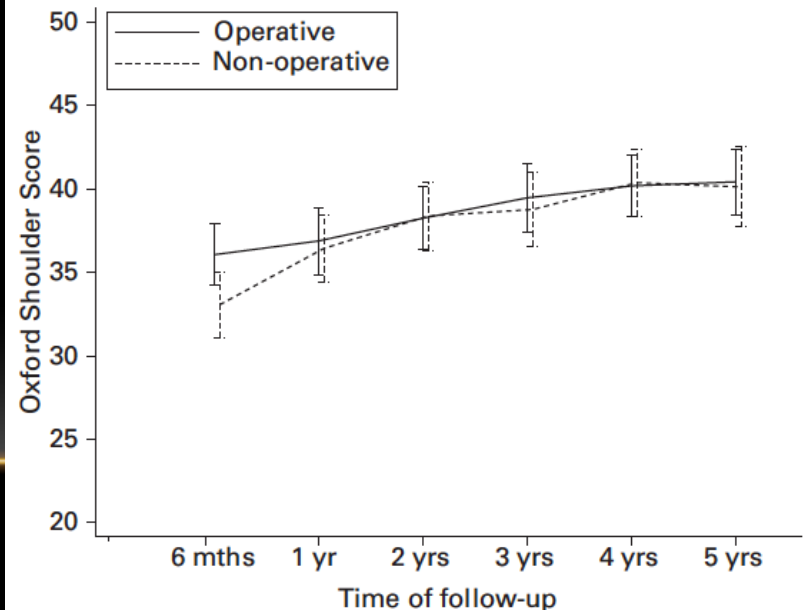
Results

OSS data were available for 164, 155 and 149 participants at three, four and five years, respectively. There were no statistically or clinically significant differences between operative and non-operative treatment at each follow-up point. No participant had secondary shoulder surgery for a new complication. Analyses of EQ-5D-3L data showed no significant between-group differences in quality of life over time.

Conclusion

These results confirm that the main findings of the PROFHER trial over two years are unchanged at five years.

Cite this article: *Bone Joint J* 2017;99-B:383-92.





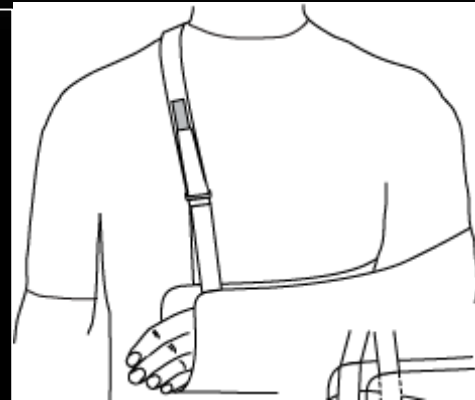
Learning point #1

Behandlingen af proximale humerus frakturer bør, som udgangspunkt, være ikke kirurgisk

IKKE KIRURGISK BEHANDLING = AKTIV BEHANDLING

Behandlingsstrategi

- Mitella/ Collar`n cuff smertebeh.
- Tidlig mobilisering
- Struktureret genoptræning



Det er lige meget, hvordan røntgen ser ud



Resultater

ORIGINAL ARTICLE

Functional and Quality-of-Life Results of Displaced and Nondisplaced Proximal Humeral Fractures Treated Conservatively

Carlos Torrens, MD, Monica Corrales, MD, Gemma Vilà, MD, Fernando Santana, MD, and Enrique Cáceres, MD

Good pain relief

CURRENT STATE OF THE ART

Nonoperative Treatment of Proximal Humerus Fractures: A Systematic Review

Jaicharan J. Iyengar, MD, Zlatko Devcic, BS, Robert C. Sproul, MD, and Brian T. Feeley, MD

High healing rate

Good functional outcomes

Original Investigation

Surgical vs Nonsurgical Treatment of Adults With Displaced Fractures of the Proximal Humerus The PROFHER Randomized Clinical Trial

Amar Rangan, FRCS(Tr&Orth); Helen Handoll, DPhil; Stephen Brealey, PhD; Laura Jefferson, PhD; Ada Keding, MSc; Belen Corbacho Martin, MSc; Lorna Goodchild, MSc; Ling-Hsiang Chuang, PhD; Catherine Hewitt, PhD; David Torgerson, PhD; for the PROFHER Trial Collaborators

No difference in outcome

Ikke mer' at tale om?

ORIGINAL ARTICLE

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Carlos Torrens, MD, Monica Corrales, MD, Gemma Vilà, MD, Fernando Santana, MD, and Enrique Cáceres, MD

Patients < 60,
75% good/excellent results.

CURRENT STATE OF THE ART

Nonoperative Treatment of Proximal Humerus Fractures: A Systematic Review

Jaicharan J. Iyengar, MD, Zlatko Devcic, BS, Robert C. Sproul, MD, and Brian T. Feeley, MD

Constant score 75 (0-100)
Complication 13%
Varus most frequent

Original Investigation

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Constant score 56 (0-100)

PROFHER STUDY

- Ingen forskel
 - Oxford Shoulder Score
 - EQ-5D
- Alle typer (inkl. 4 part)
- 1250 patienter => 241 inkl.
- Median alder 66 år
- 32 hospitaler
- 66 kirurger (median 1 op)
- Al kirurgi slået sammen



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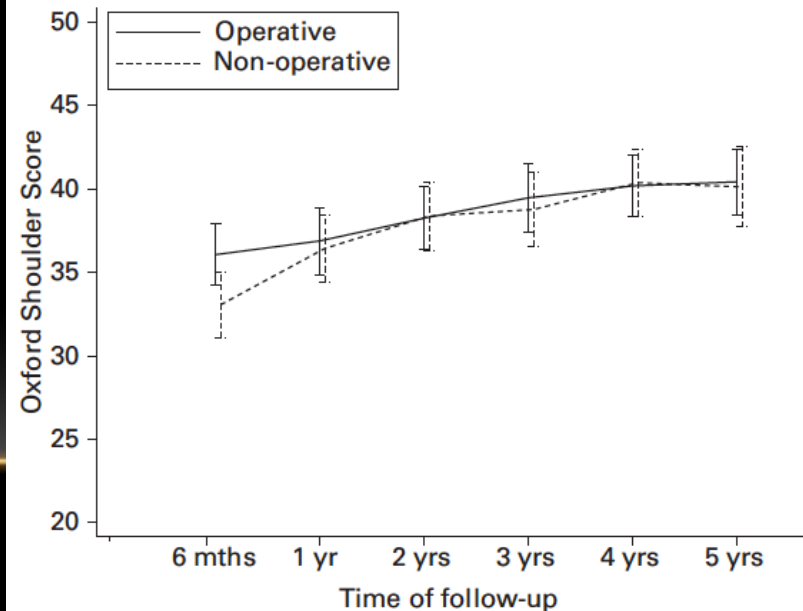
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Learning point # 2

Kirurgisk behandling kan være
indiceret ved særlige frakturtyper og
hos patienter med højt
funktionsniveau

KIRURGI – ABSOLUT (?) INDIKATION

- **Sjældent**

Åbne frakturer

Associeret vaskulær skade

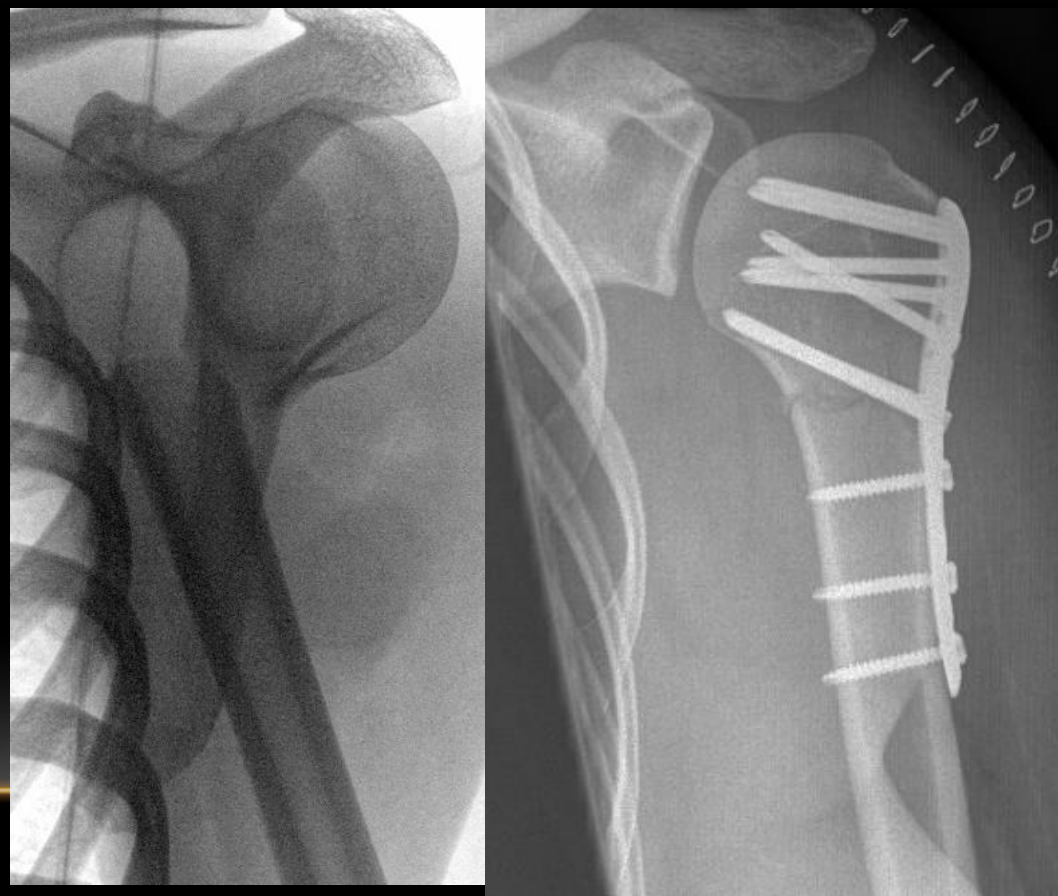


KIRURGI – STÆRK (?) INDIKATION

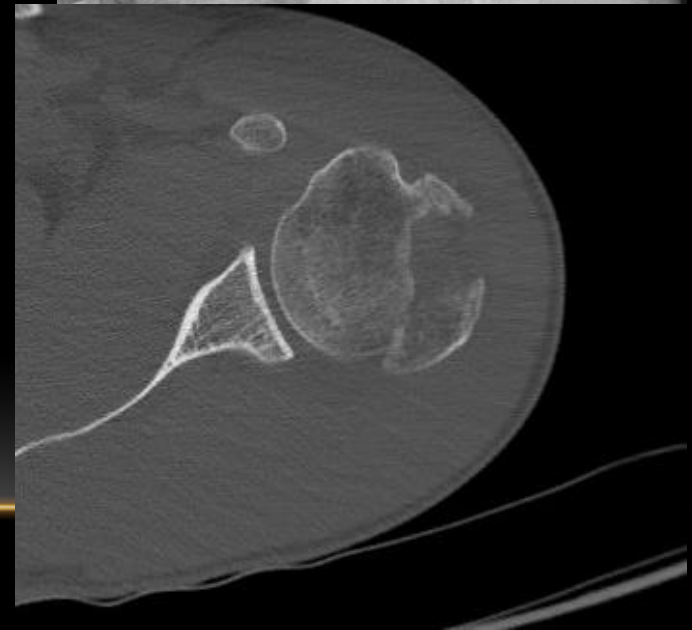
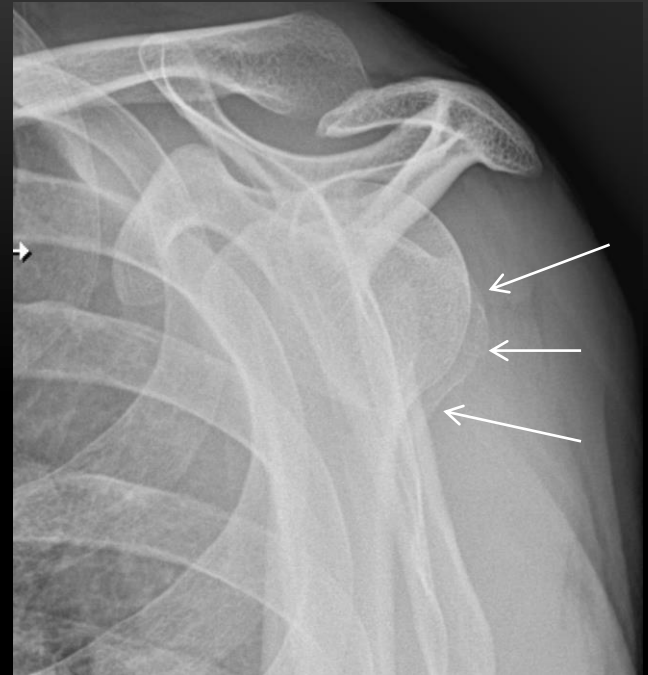
- Fraktur luksation
- Tuberculum major/minor fraktur med displacering $> 5-10$ mm
- 100 % displaceret collum chirurgicum fraktur
- Displaceret 3 & 4 part fraktur hos patienter med højt funktionsniveau
- Multitraumatiserede



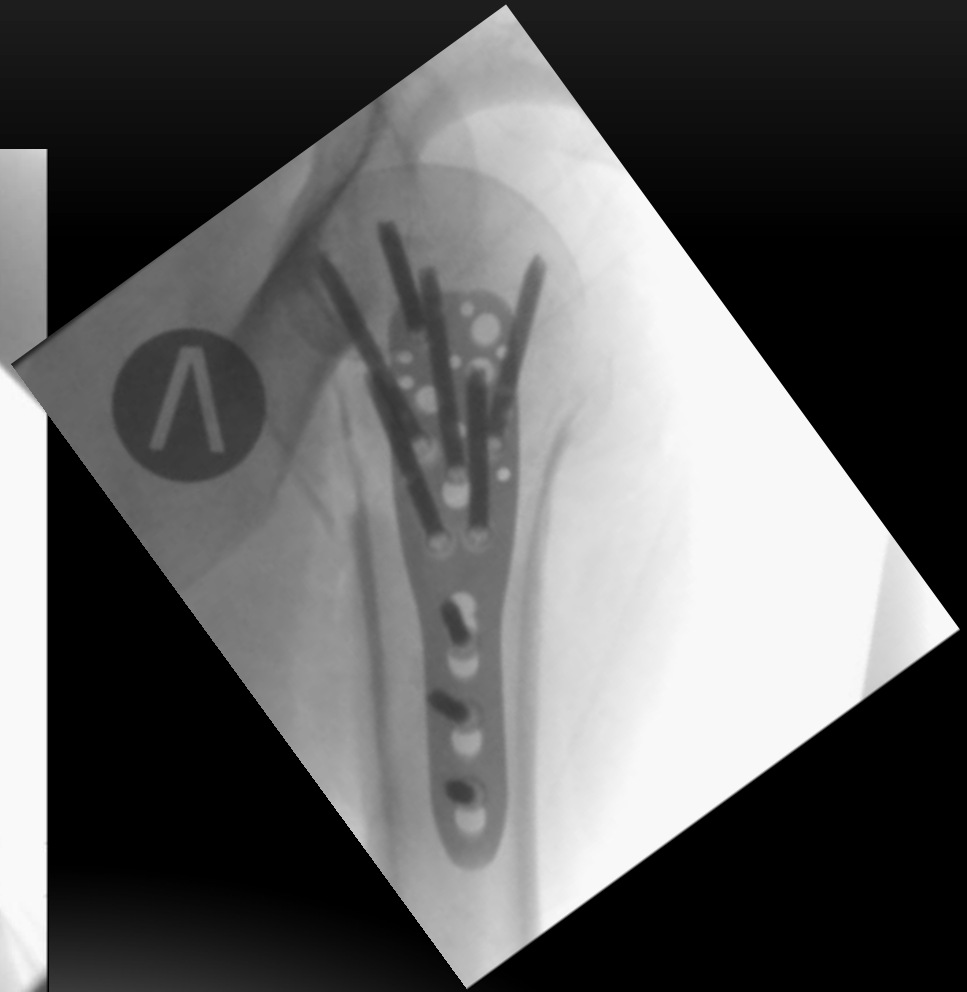
100 % displaceret collum chirurgicum fraktur



TUBERCULUM MAJUS



TUBERCULUM MAJUS



Displaceret 3 & 4 part fraktur





Learning point #3

Lad være med at stille indikation for operation, alene ud fra røntgen

Overvejelser ved indikation

Misbrug

Funktionsniveau

Komorbiditet

Alder

Fraktur type/kompleksitet



«It is easier to look the other way. But if you do terrible things can happen»

Eve Bunting

Displaceret 3 & 4 part fraktur hos patienter med højt funktionsniveau



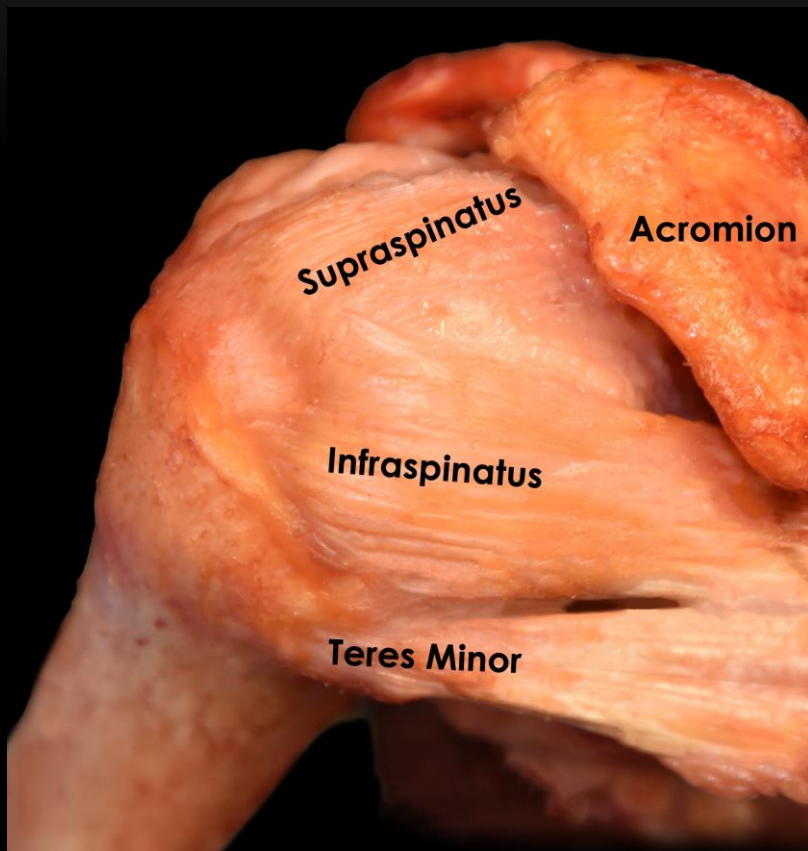
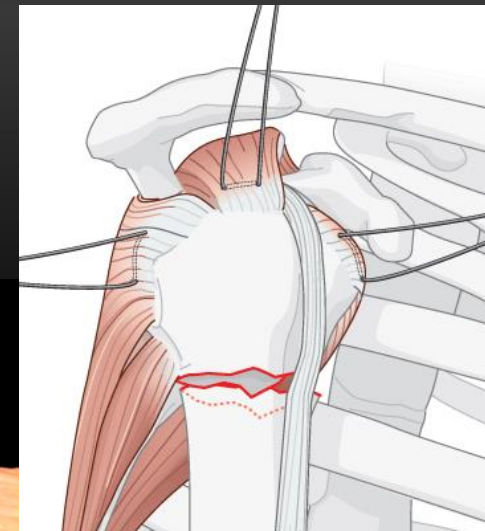
Learning point # 4

Nøglen til godt resultat med ORIF er
god reposition og stabil fikssation af
både fraktur og bløddele.

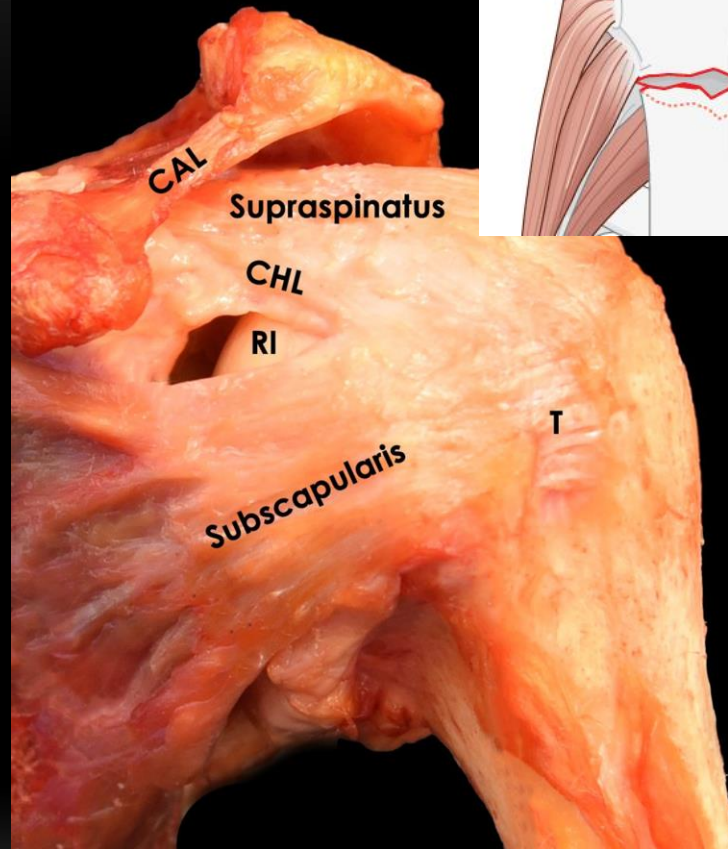
(kom på AO Advanced og lær det)



Rotator cuff insertion

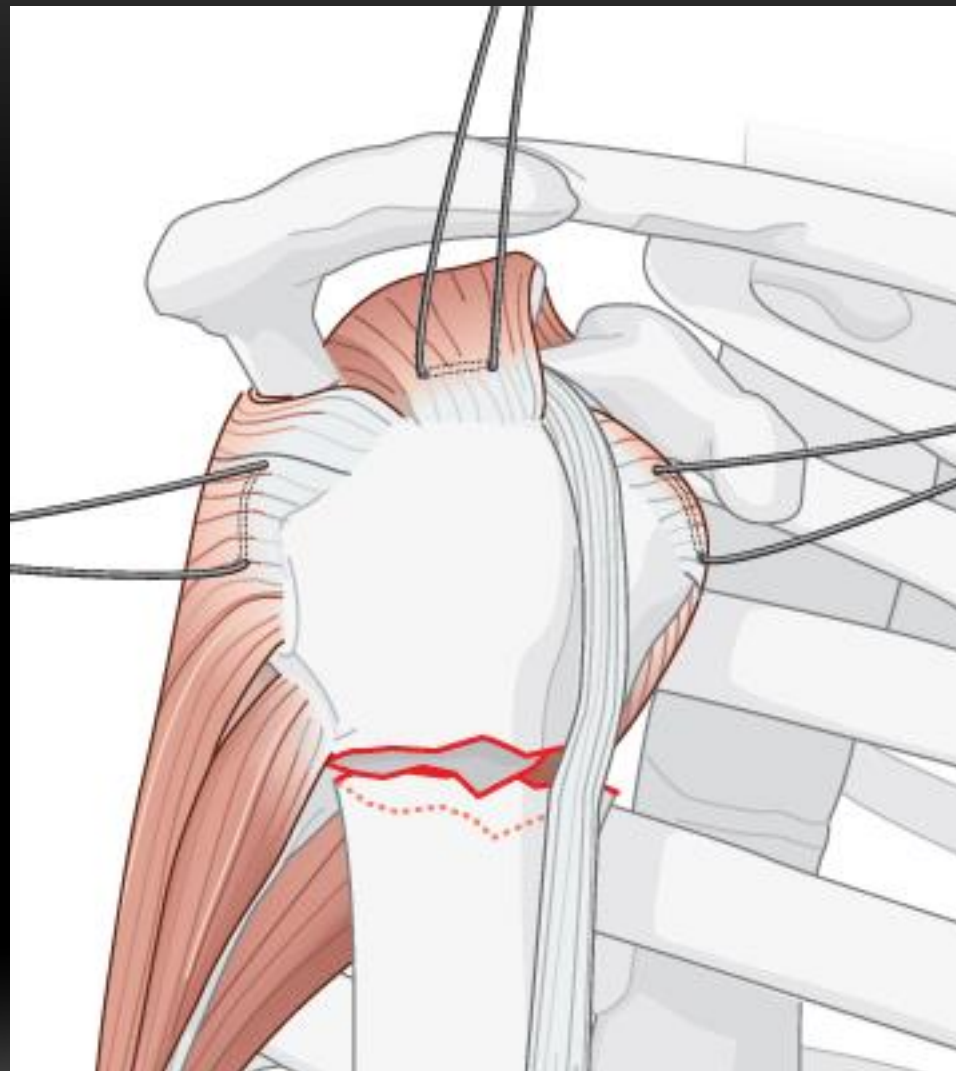


Greater tuberosity

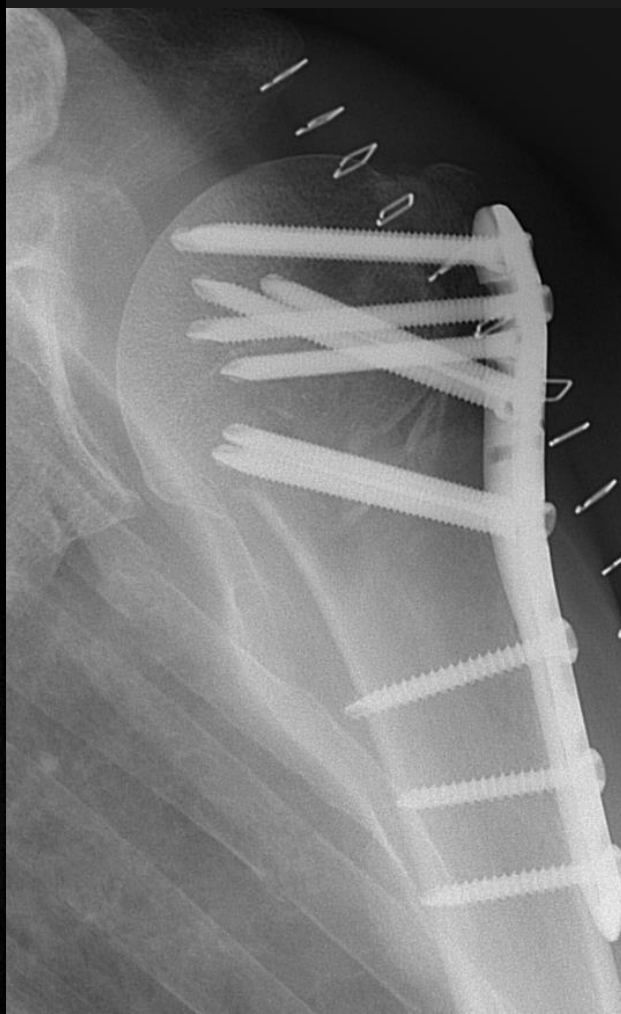


Lesser tuberosity

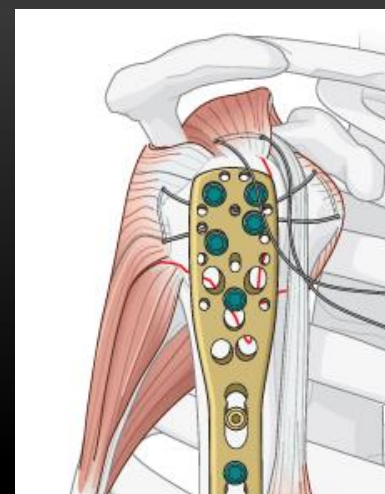
REPOSITION OG FIKSATION AF BLØDDELE



Varus fejlstillet



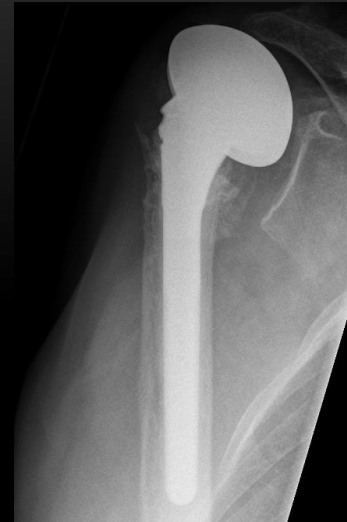
Valgus impacted (isvaffel)





HEMI ALLOPLASTIK

- Svingende resultater
- Kræver:
 - Normal cuff
 - Anatomisk og stabil fiksektion af tuberculi
 - Korrekt højde og vinkel på caput
- Indikation
 - Non salvageable humeral head in young patients (<60 Y?)



Boileau et al 2002. 42% unsatisfied

Kontakis et al 2008. Poor functional results

Boons et al 2012 HA vs Nonoperative treatment. Similar results

REVERS SKULDER ALLOPLASTIK (RSA)

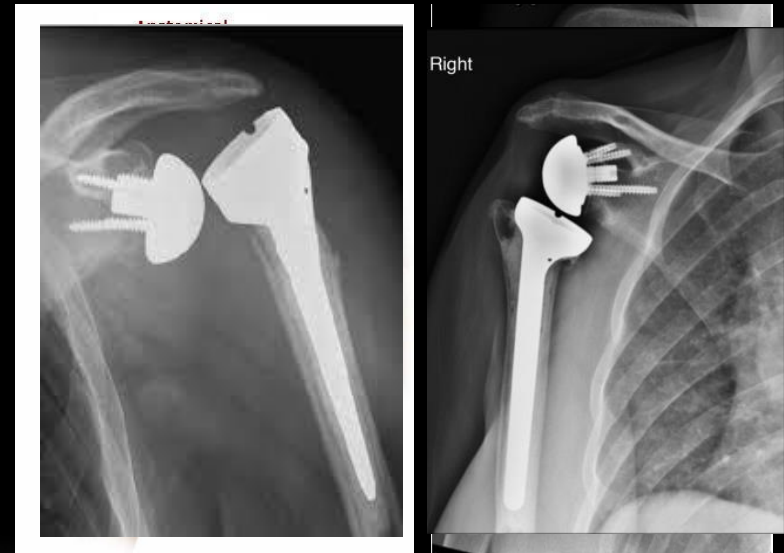
Alder > 65

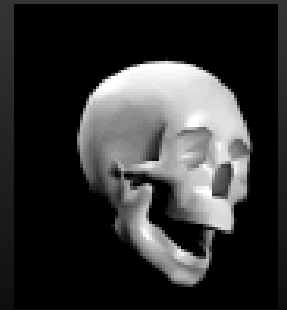
Uafhængig af rotator cuff/tuberosity
opheling

Kræver funktional deltoideus muskel

Mere forudsigelige resultater end HA

«Unikke» komplikationer





LEARNING POINTS

- Behandlingen af proximale humerus frakturer bør, som udgangspunkt, være ikke kirurgisk
- Kirurgisk behandling kan være indiceret ved særlige frakturtyper og hos patienter med højt funktionsniveau
- Lad være med at stille indikation for operation, alene ud fra røntgen
- Nøglen til godt resultat med ORIF er god reposition og stabil fiksation af både fraktur og bløddele.

