Humerusfrakturer

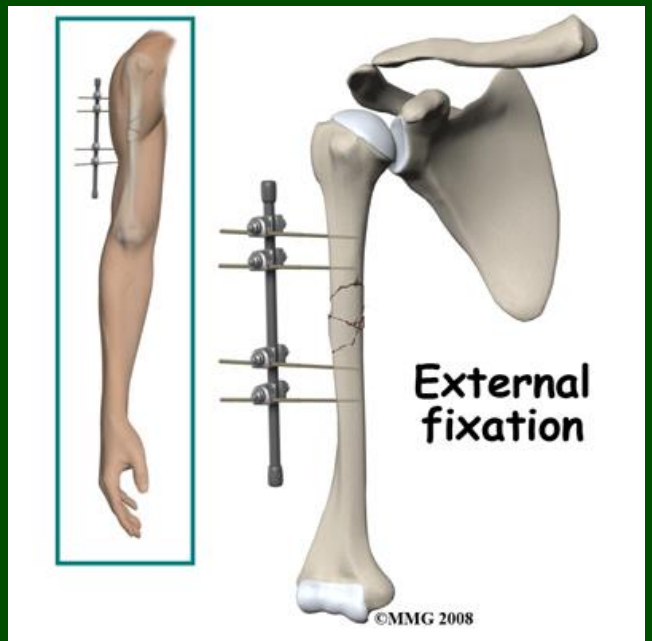
Lasse bayer
Overlæge
Nordsjællands Hospital Hillerød

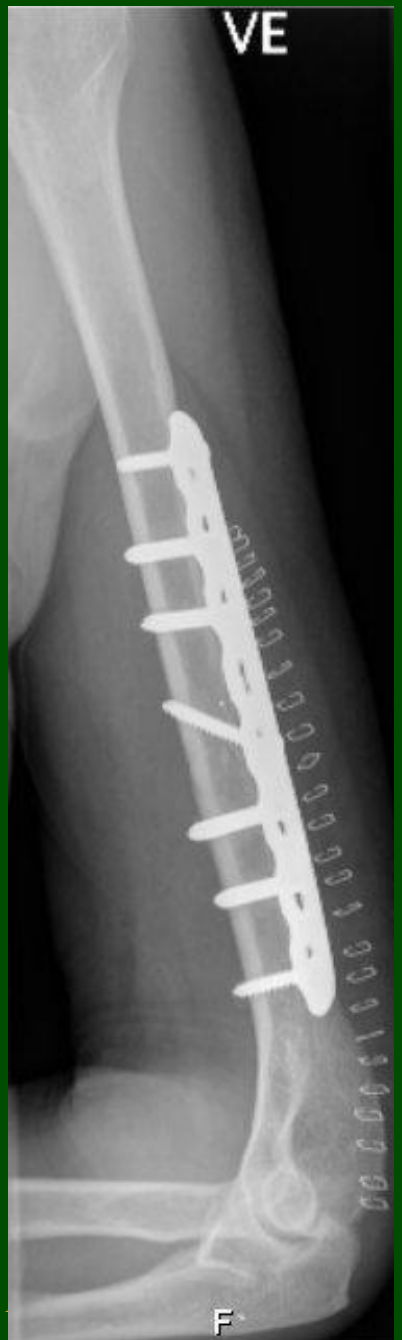
Behandlingsmuligheder

Grundlæggende spørgsmål:

- Konservativ vs operation?
- Skinne vs søm
- Adgang?
  - Skinne → anterior vs posterior
  - Søm → antegrad vs retrograd
  - MIS?
- N. radialis?

Behandlingsmuligheder





Golden standard

Functional bracing

J Shoulder Elbow Surg (2020) 29, 1493–1504

ELSEVIER

JOURNAL OF SHOULDER AND ELBOW SURGERY

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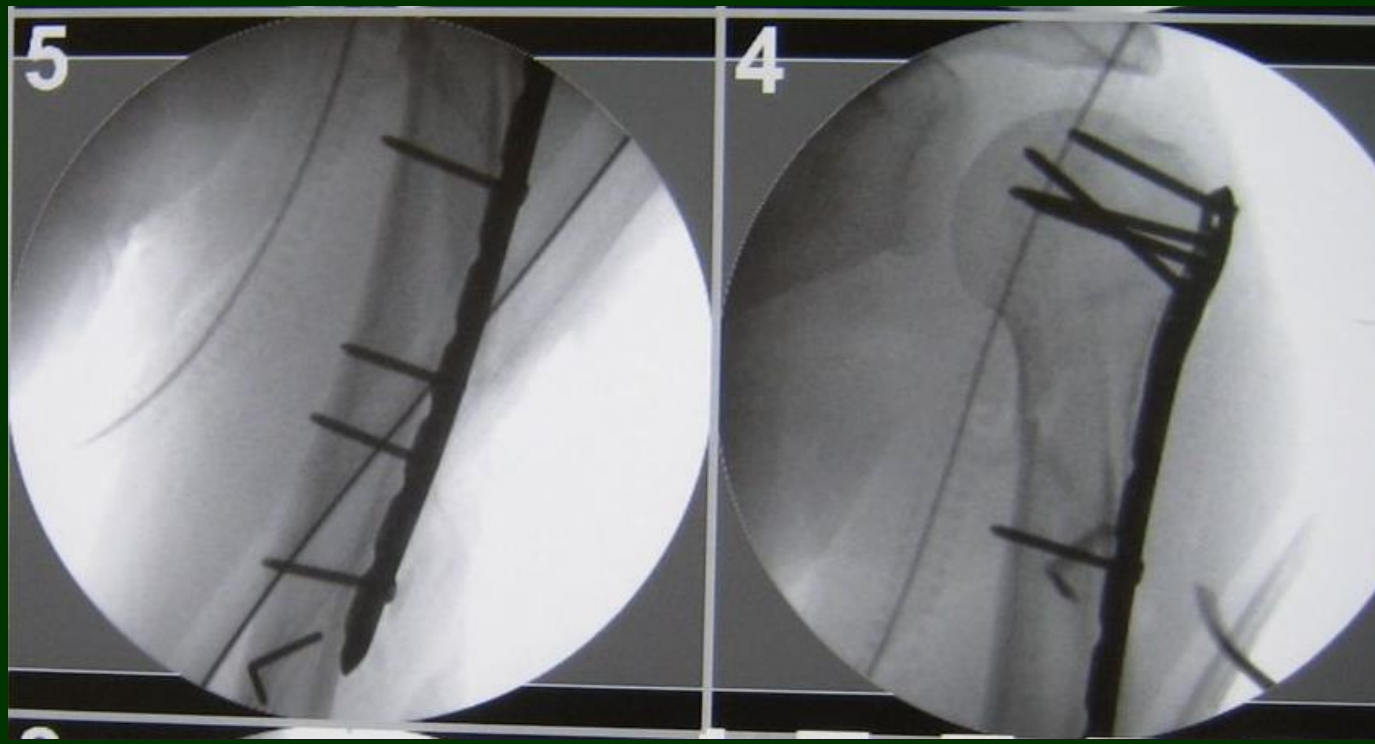
Conservative vs. operative treatment for humeral shaft fractures: a meta-analysis and systematic review of randomized clinical trials and observational studies

satisfactory results can be achieved with both conservative and operative management
however, operative treatment reduces the risk of nonunion

Konservativ behandling indikationer

- Isoleret skade
- Lukket fraktur
- God compliance
- Acceptabel alignment (mit bud)
  - 20 graders anterior/posterior vinkling
  - 30 graders varus/valgus
  - 15 graders rotation
  - 3 cm forkortning

65-årig mand
Faldet ned ad stige
NV intakt
Ingen alvorlig comorbiditet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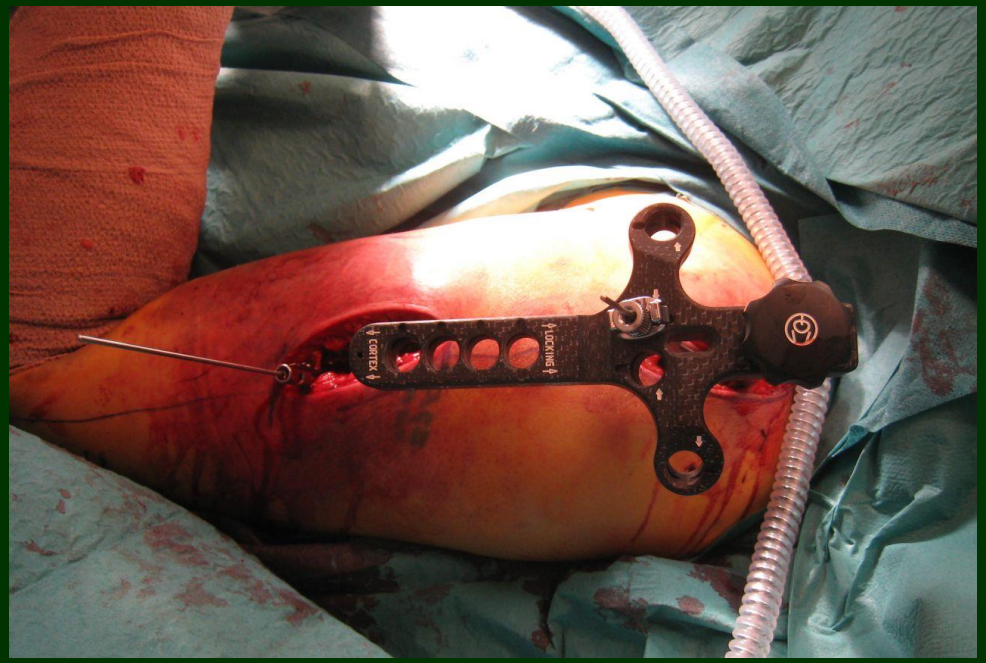
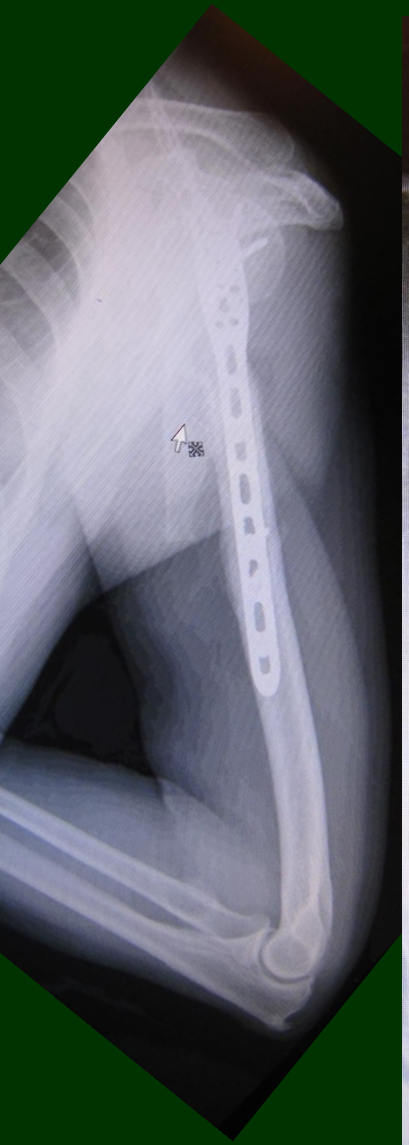
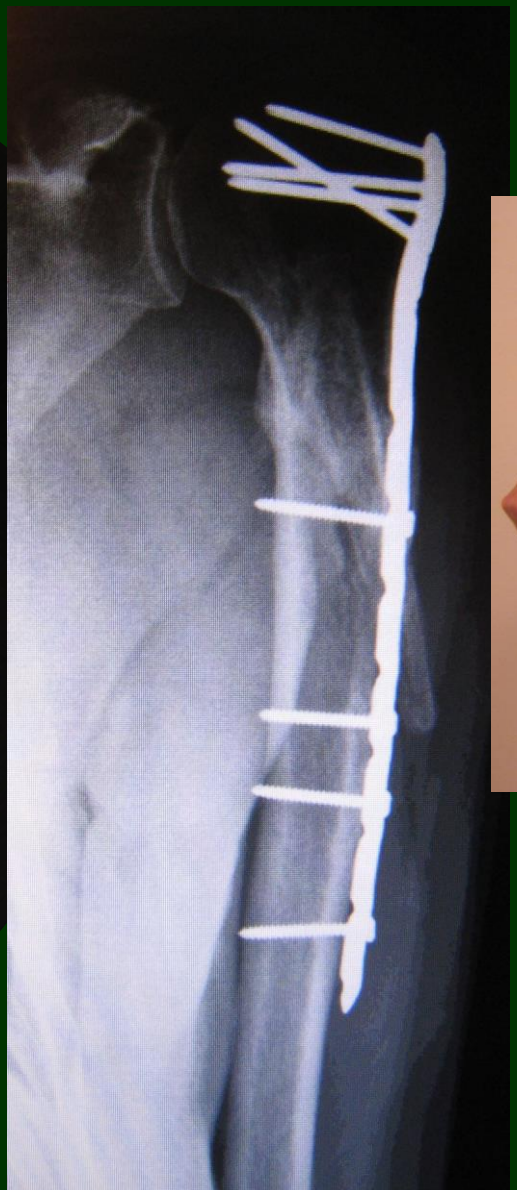
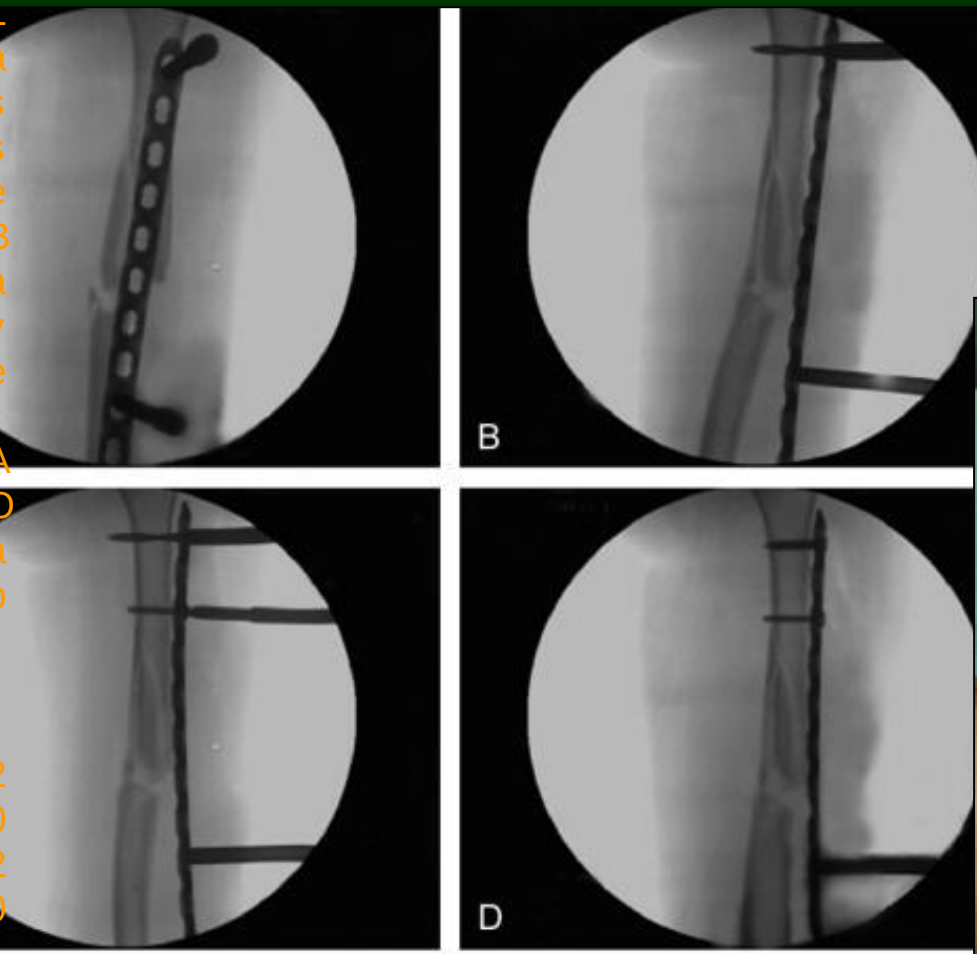

CORTEX
LOCKING

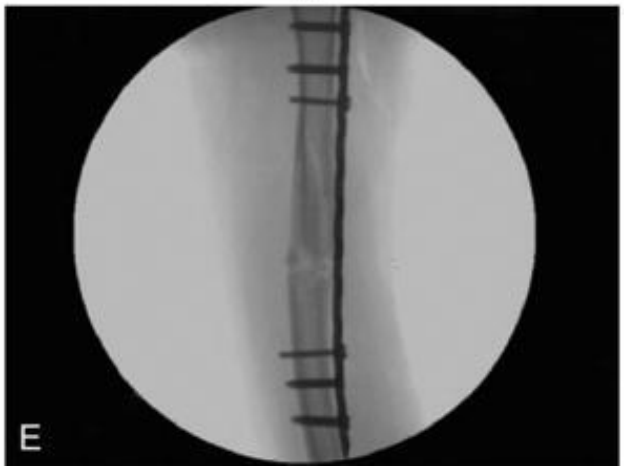
65-årig mand
9 mdr





MIPO technique - anterior





MIPO-technique – posterior


Long PHILOS plate

Injury 52 (2021) 653–663

Contents lists available at ScienceDirect

Injury

journal homepage: www.elsevier.com/locate/injury

Review

ORIF versus MIPO for humeral shaft fractures: a meta-analysis and systematic review of randomized clinical trials and observational studies

Frank JP Beeres[a], Nadine Diwersi[a], Marijn R Houwert[b], Björn C Link[a], Marilyn Heng[c], Matthias Knobe[a], Rolf HH Groenwold[d], Herman Frima[e], Reto Babst[a], Bryan JM van de Wall[a,*]

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[b] *University Medical Center Utrecht, Department of Trauma Surgery, Heidelberglaan 100, 3584CX, Utrecht, the Netherlands*
[c] *Harvard Medical School Orthopedic Trauma Initiative, Massachusetts General Hospital Boston, Department of Orthopedic Surgery, Boston, USA*
[d] *Leiden University Medical Center, Department of Clinical Epidemiology, Leiden, the Netherlands*
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Conclusion: MIPO has a lower risk for non-union than ORIF for the treatment of humeral shaft fractures. Radial nerve palsy secondary to operation is a temporary issue resolving in all patients in both treatment groups. Although both treatment options are viable, the general balance leans towards MIPO having more favorable outcomes.

European Journal of Trauma and Emergency Surgery (2022) 48:47–59
https://doi.org/10.1007/s00068-020-01585-w

REVIEW ARTICLE

MIPO versus nailing for humeral shaft fractures: a meta-analysis and systematic review of randomised clinical trials and observational studies

Bryan J. M. van de Wall[1] · Ralf Baumgärtner[1] · R. Marijn Houwert[2] · Björn C. Link[1] · Marilyn Heng[3] · Matthias Knobe[1] · Rolf H. H. Groenwold[4] · Reto Babst[1] · Frank J. P. Beeres[1]

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Abstract

Purpose There is no consensus on the optimal operative technique for humeral shaft fractures. This meta-analysis aims to compare minimal-invasive plate osteosynthesis (MIPO) with nail fixation for humeral shaft fractures regarding healing, complications and functional results.

Methods PubMed/Medline/Embase/CENTRAL/CINAHL were searched for randomized clinical trials (RCT) and observational studies comparing MIPO with nailing for humeral shaft fractures. Effect estimates were pooled across studies using random effects models and presented as weighted odds ratio (OR), risk difference (RD), mean difference (MD) and standardized mean difference (SMD) with corresponding 95% confidence interval (95%CI). Analyses were repeated stratified by study design (RCTs and observational studies).

Results A total of 2 RCTs (87 patients) and 5 observational studies (595 patients) were included. The effects estimated in observational studies and RCTs were similar in direction and magnitude for all outcomes except operation duration. MIPO has a lower risk for non-union (RD 7%; OR 0.2, 95% CI 0.1–0.5) and re-intervention (RD 13%; OR 0.3, 95% CI 0.1–0.8). Functional shoulder (SMD 1.0, 95% CI 0.2–1.8) and elbow scores (SMD 0.4, 95% CI 0–0.8) were better among patients treated with MIPO. The risk for radial nerve palsy following surgery was equal (RD 2%; OR 0.6, 95% CI 0.3–1.2) and nerve function recovered spontaneously in all patients in both groups. No difference was detected with regard to infection, time to union and operation duration.

Conclusion MIPO has a considerable lower risk for non-union and re-intervention, leads to better shoulder function and, to a lesser extent, better elbow function compared to nailing. Although nailing appears to be a viable option, the evidence suggests that MIPO should be the preferred treatment of choice. The learning curve of minimal-invasive plating should, however, be taken into account when interpreting these results.

Patologisk humerus fraktur

En af de eneste indikationer for søm (efter min mening)

Skinne er GOLDEN STANDARD

Injury, Int. J. Care Injured 49S1 (2018) S33–S38

Contents lists available at ScienceDirect

Injury

journal homepage: www.elsevier.com/locate/injury

Plate fixation for management of humerus fractures

Lauren L. Nowak[a,*], Niloofar Dehghan[b], Michael D. McKee[c], Emil H. Schemitsch[d]

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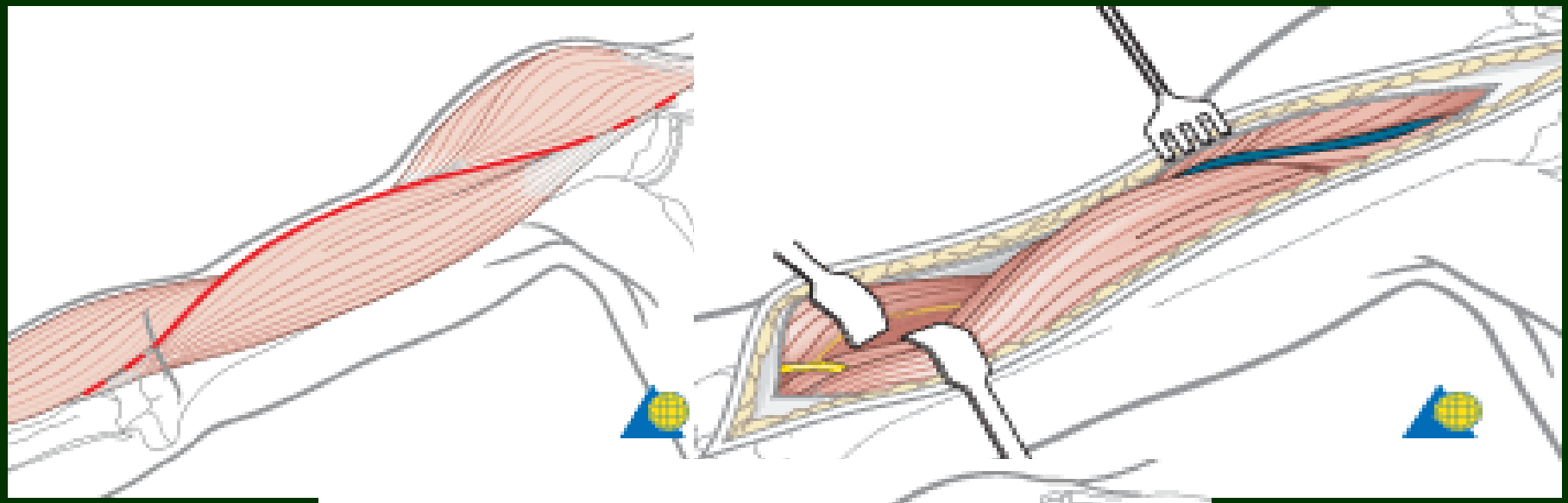
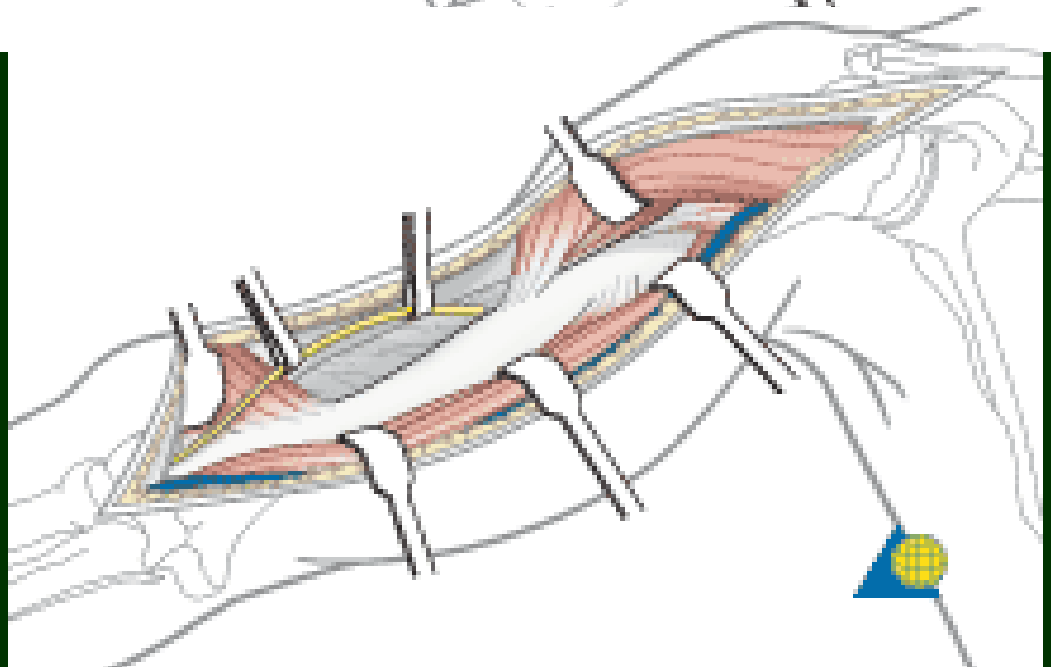
[d] Division of Orthopaedics, Department of Surgery, Western University, London, Canada

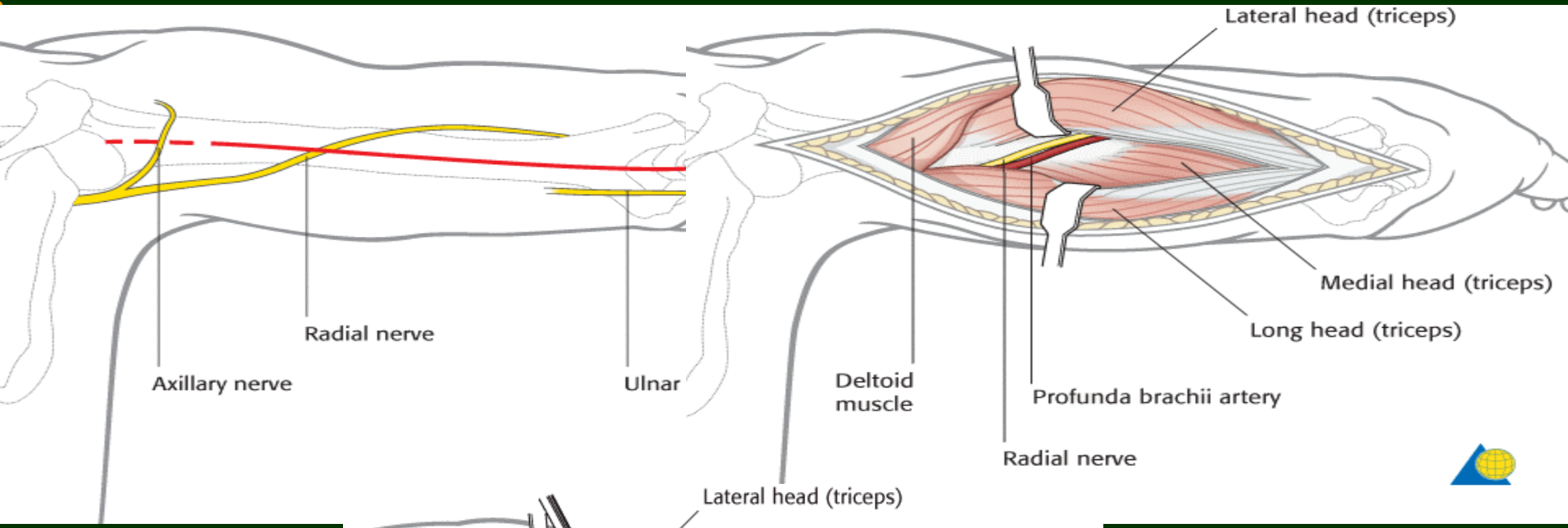
”Nailing has a higher rates of re-operation and insertion site morbidity”

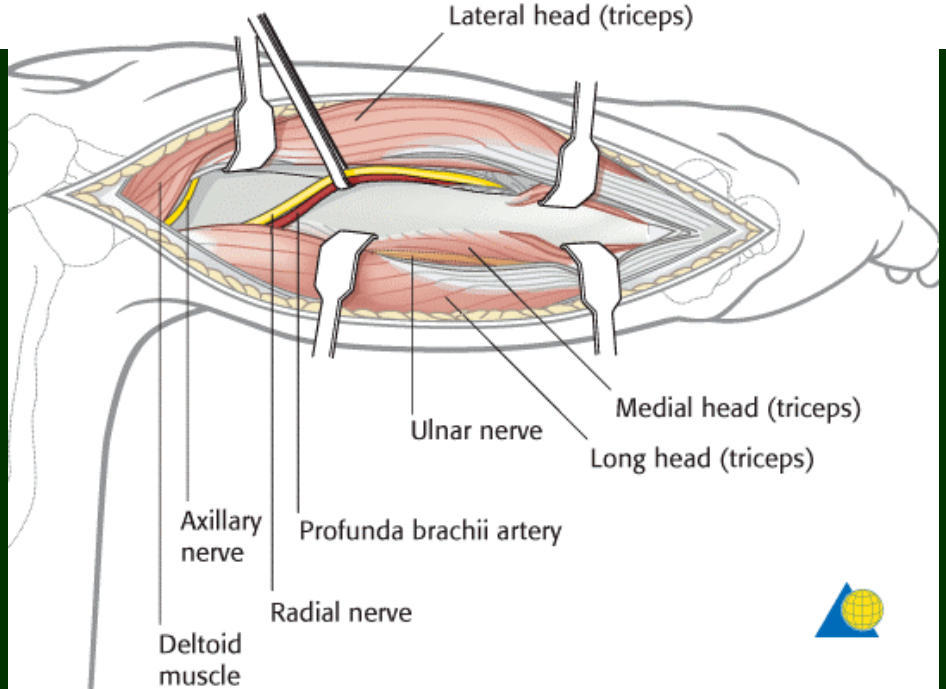
Anterolateral adgang





Posterior adgang





Accepted 28 September 2021

Journal of Orthopaedic Science xxx (xxxx) xxx

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journal homepage: http://www.elsevier.com/locate/jos

Original Article

Iatrogenic radial nerve palsy in the surgical treatment of humerus shaft fracture -anterolateral versus posterior approach: A systematic review and meta-analysis

Hyun-Chul Shon [a], Jae Young Yang [a], Yohan Lee [a], Jae-Woo Cho [b], Jong-Keon Oh [b], Eic Ju Lim [a, *]

[a] Department of Orthopaedic Surgery, Chungbuk National University Hospital, Chungbuk National University, Cheongju, Republic of Korea
[b] Department of Orthopaedic Surgery, Guro Hospital, Korea University Medical Center, Seoul, Republic of Korea

Conclusion: In this meta-analysis, the posterior approach showed a higher incidence of iatrogenic RNP than the anterolateral approach in the surgical treatment of humerus shaft fracture. With limited studies, it is difficult to anticipate if any particular approach favors the recovery of iatrogenic RNP.

Operation - indikationer

- Betydelig fejlstilling
- Bilateral humerus fraktur
- Floating elbow
- Segmental fraktur
- Åben fraktur
- Polytraume
- Patologisk fraktur
- Ændring i neurologisk status efter lukket reposition – eller under den konservative behandling
- Overvægt
- Delayed union/nonunion


VE
Horisontal

Behandlingsmuligheder

Grundlæggende spørgsmål:

- Konservativ vs operation?
- Skinne vs søm
- Adgang?
  - Skinne → anterior vs posterior
  - Søm → antegrad vs retrograd
  - MIS?
- N. radialis?

Spørgsmål???