

Inter-/subtrochanteric fractures

Current treatment, pearls and pitfalls

Disclosure: No potential conflicts of interest

Faculty: Lasse Birkelund, OUH

I have no financial relationships with commercial entities that produce health-care related products.

Learning objectives

Moderne (hofte)frakturkirurgi:

Klassificer frakturen

Brug en algoritme

Operer patienten

"Den skal bare have en DHS"

"DHS kan klare alle frakturer"



Re-operation – alle hoftefraktur

DOS referenceprogram:	10-30%	(2008)
Hvidovre algoritme:	18% -> 12%	(2012)
Validering:	12% -> 8%	(2014)

A new algorithm for hip fracture surgery

Reoperation rate reduced from 18% to 12% in 2,000 consecutive patients followed for 1 year

Henrik Palm¹, Michael Krasheninnikoff¹, Kim Holck¹, Tom Lemser¹, Nicolai Bang Foss², Steffen Jacobsen¹, Henrik Kehlet³, and Peter Gebuhr¹

Acta 12

Implementing, Adapting, and Validating an Evidence-Based Algorithm for Hip Fracture Surgery

Ilija Ban, MD, Henrik Palm, MD,† Lasse Birkelund, MD,* Jacob Eschen, MD,* Søren Kring, MD,* Michael Brix, MD,*‡ and Anders Troelsen, MD, PhD, DMSc*†*

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Re-operation - trokantære

DOS referenceprogram:	10-30%	(2008)
Hvidovre algoritme:	13% -> 7%	(2012)
Validering:	9% -> 5%	(2014)

A new algorithm for hip fracture surgery

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Algoritme/flowchart kirurgi

Behandler efter bedste (foreliggende) evidens

Og:

- Opfinder ikke de dybe tallerken hvergang
- Undgår fikse ideer
- Letter indlæringen hos YL
- Skiller de "nemme" fra de "svære" operationer

Instruks
Hoftenære femurfrakturer
Kirurgiske principper

Hoftefrakturcenter, Trosslevsvej 10, 8260 Ålbæk, Ålbæk, Ålbæk og Michael Frøstlevsvej 1, Ålbæk, Ålbæk

Intrakapsulære frakturer

Collum femoris frakturer:

Undiloceret (Garden 1,2) med < 20° frakturvinkel i sitedplan eller Alder ≤ 70 år

Ja → LH-pinde

Nej → New Mobility Score (NMS)

NMS = 1-9 → Hemi-alloplastik

NMS = 0 → Girdlestone

Orthocymose (LH-pinde)

Hemi-alloplastik (D.Fx protese)

Caputreaktion (Girdlestone)

Extracapsulære frakturer

Basocervikale frakturer / Verticale collum femoris frakturer (Intracapsulære frakturer):

Reposition og intern fiksering med glideskrue og kort skive

2-huls DHS (Hylloc)

Stabile pertrokanter frakturer: Evans type 1-2, samt type 3-4 med bevaret støtte fra laterale femurcortex:

Reposition og intern fiksering med glideskrue og skive

4-huls DHS (Hylloc)

Ustabile pertrokanter frakturer: Evans type 3, samt type 3-4 uden støtte fra laterale femurcortex og alle pertrokanter frakturer med subtrokanter udslæbere:

Reposition og intern fiksering med glideskrue og kort marvssøm

Kort IMHS

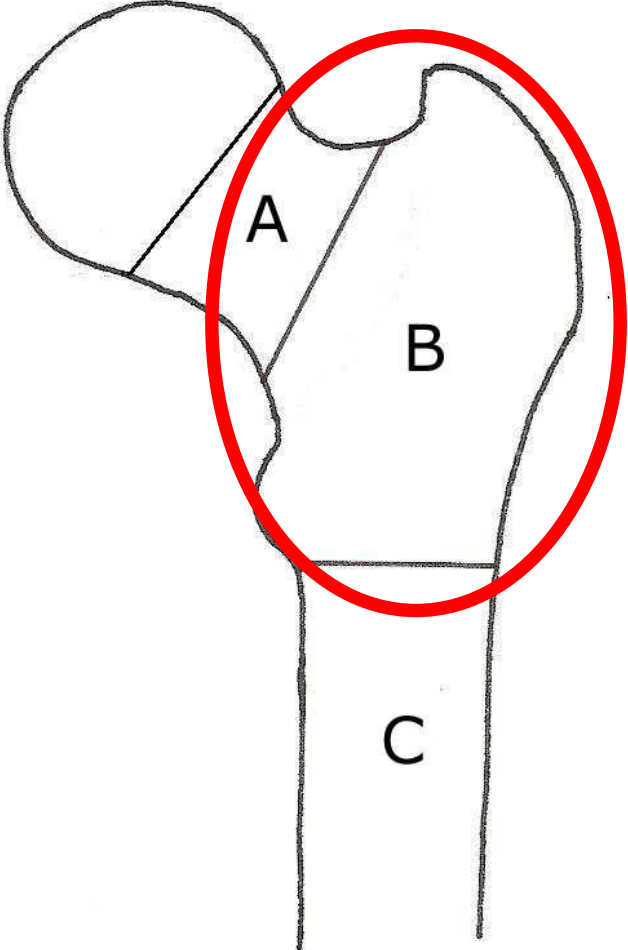
Subtrokanter frakturer:

Reposition og intern fiksering med glideskrue og lang marvssøm

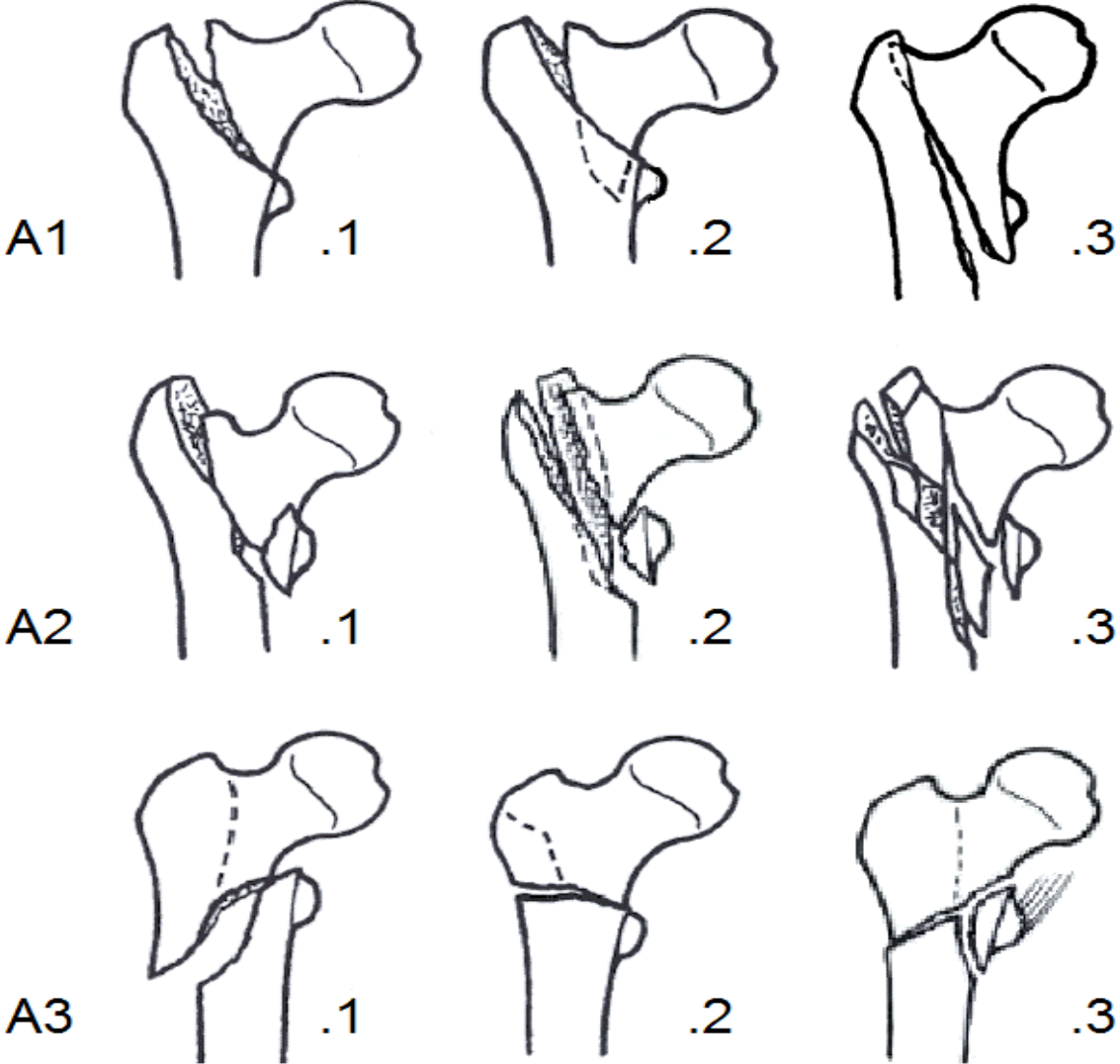
Lang IMHS

* Svære operationer, hvor læger s. Fase II altid skal superviseres

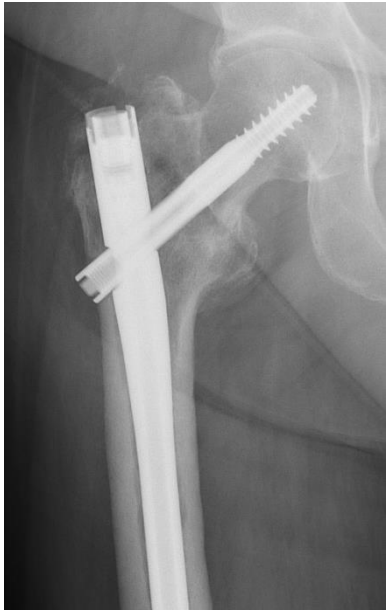
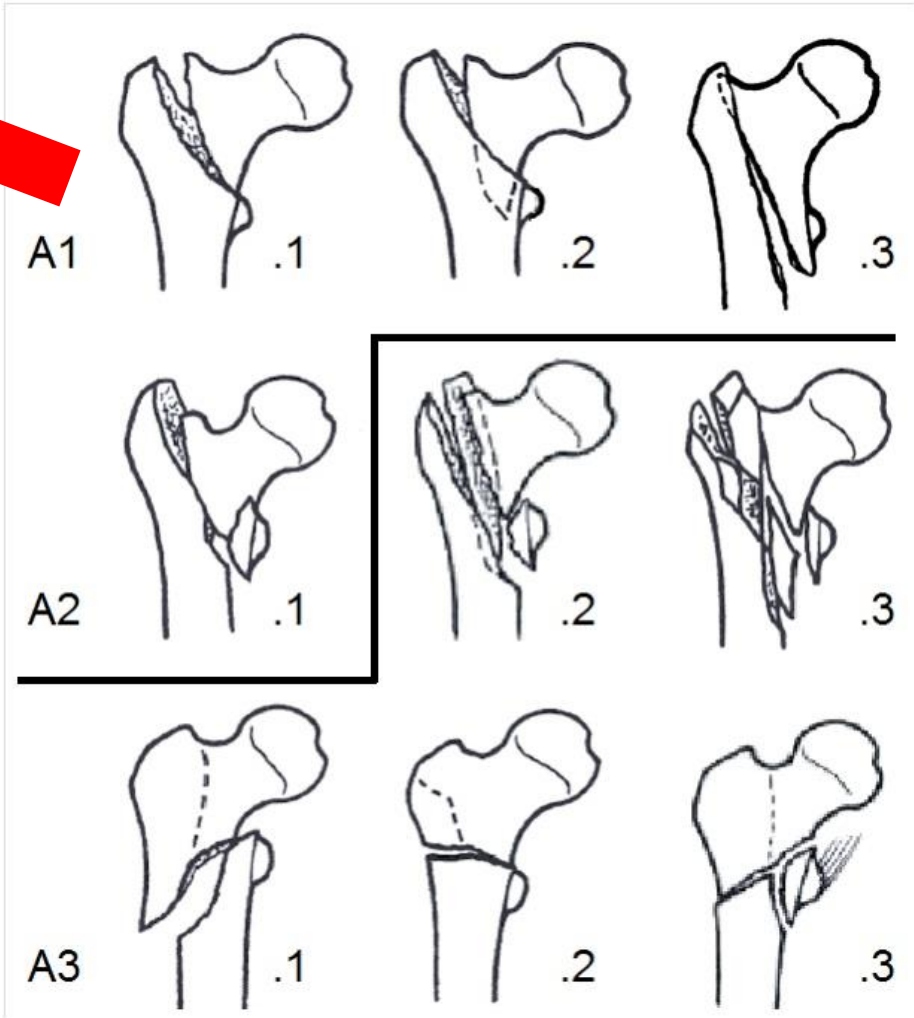
Pertrokantære



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Pertrokantære



Kort vs langt søm

Reoperations for Patients with Ptertrochanteric Fracture

	Short Intramedullary Nail	Long Intramedullary Nail	P Value
Major			
Total*	75 (4.0%) of 1,867	24 (6.3%) of 378	0.045
Deep infection†	14 (19%) of 75	4 (17%) of 24	
Failure†	47 (63%) of 75	13 (54%) of 24	
Peri-implant fracture†	5 (7%) of 75	4 (17%) of 24	
Pain†	6 (8%) of 75	0 (0%) of 24	
Nonunion†	3 (4%) of 75	0 (0%) of 24	
Other†	0 (0%) of 75	3 (13%) of 24	
Minor*	8 (0%) of 1,867	3 (1%) of 378	0.355

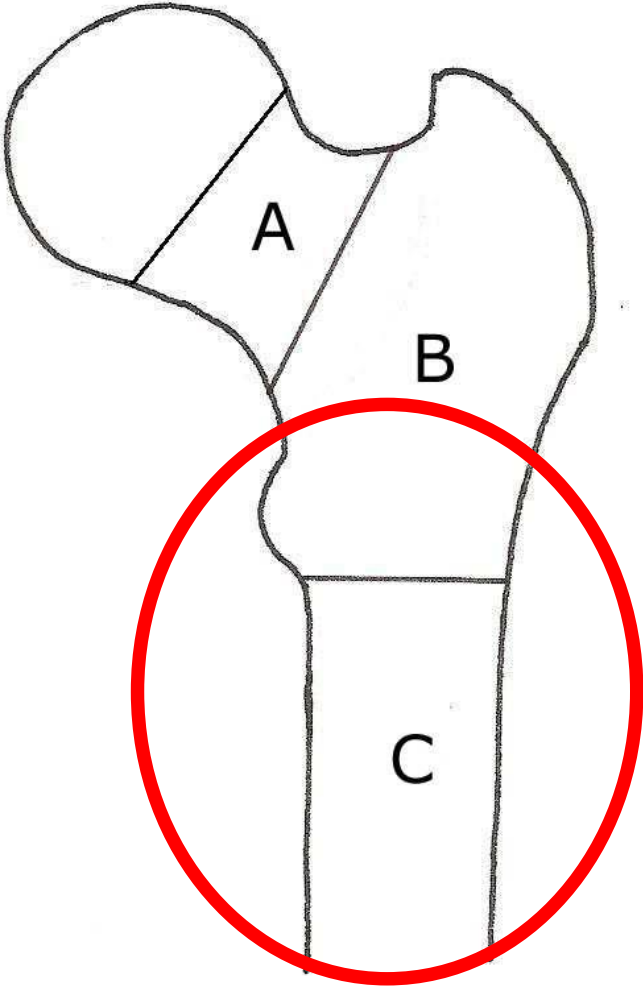
Reoperations in Patients with Subtrochanteric Fracture

	Short Intramedullary Nail	Long Intramedullary Nail	P Value
Major*			
Total†	26 (8.4%) of 308	24 (4.0%) of 601	0.005
Deep infection†	2 (8%) of 26	6 (25%) of 24	
Failure†	12 (46%) of 26	10 (42%) of 24	
Peri-implant fracture†	6 (23%) of 26	2 (8%) of 24	
Pain†	4 (15%) of 26	2 (8%) of 24	
Nonunion†	2 (8%) of 26	3 (13%) of 24	
Other†	0 (0%) of 26	1 (4%) of 24	
Minor*	5 (2%) of 308	7 (1%) of 601	0.566

Pertr -> kort søm

Subtr -> langt søm

Subtrokantære

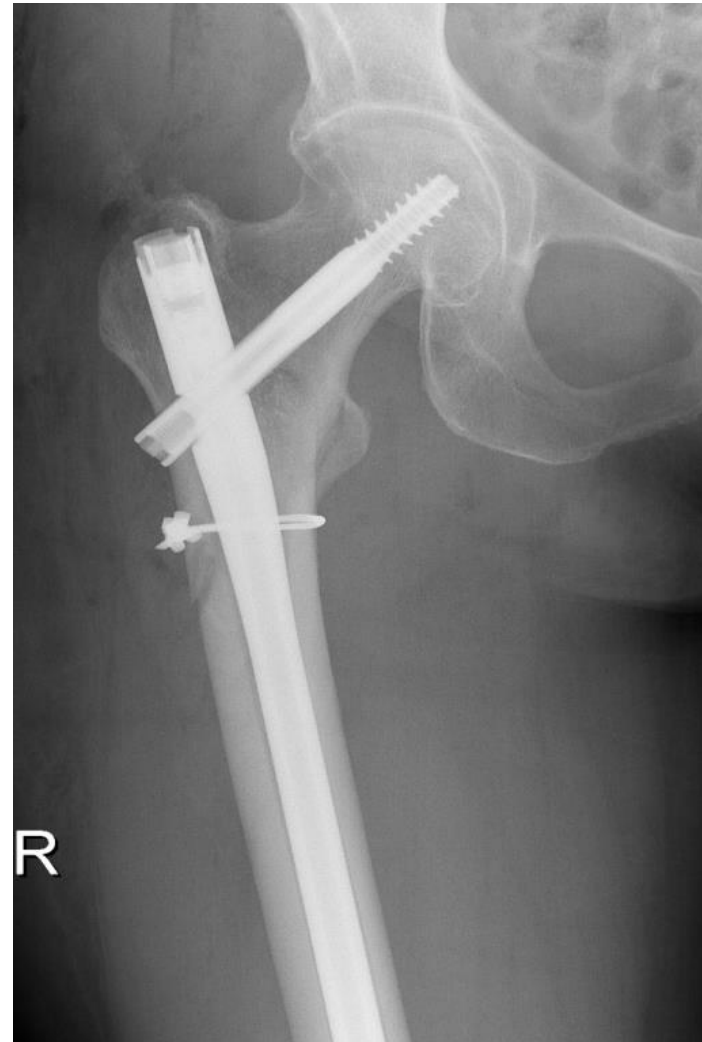


Subtrokantære

31A3 + proximale diafyse

Langt søm kan håndtere de fleste

(+/- kabler)



Et par tips/tricks

THE JOURNAL OF BONE & JOINT SURGERY • JBJS.ORG
VOLUME 91-A • NUMBER 3 • MARCH 2009

INTERTROCHANTERIC FRACTURES:
TEN TIPS TO IMPROVE RESULTS



Intertrochanteric Fractures: Ten Tips to Improve Results

By George J. Haidukewych, MD

An Instructional Course Lecture, American Academy of Orthopaedic Surgeons



Contents lists available at [ScienceDirect](#)

Injury

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



Common complications in hip fracture surgery: Tips/tricks and solutions to avoid them

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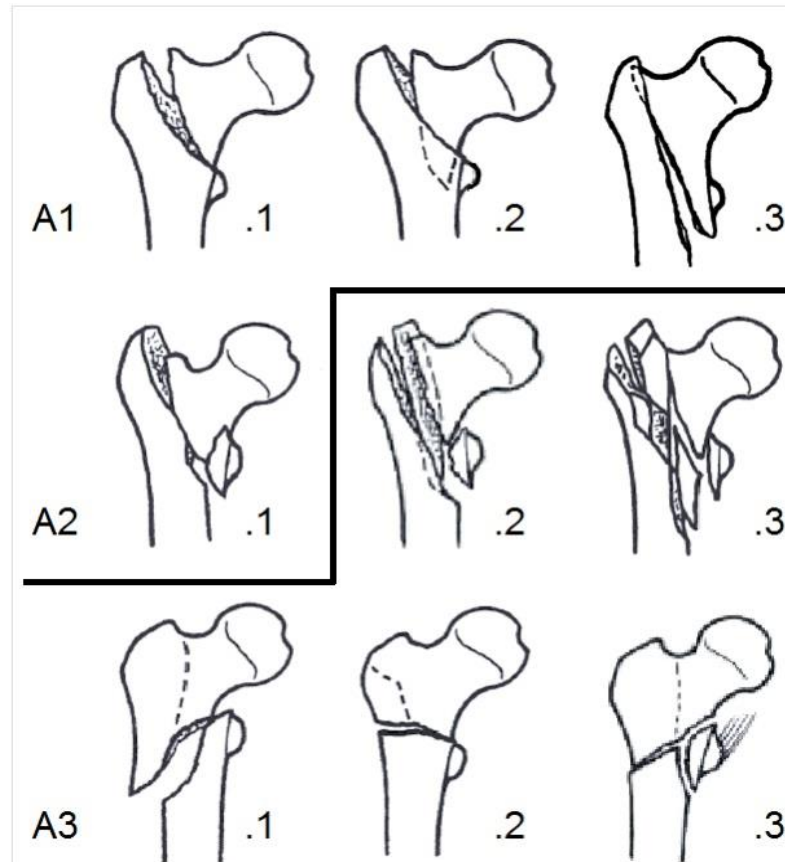
#1

Ingen lateral væg, ingen glideskrue



#2

Kend forskel på stabile vs ustabile frakturer



#3

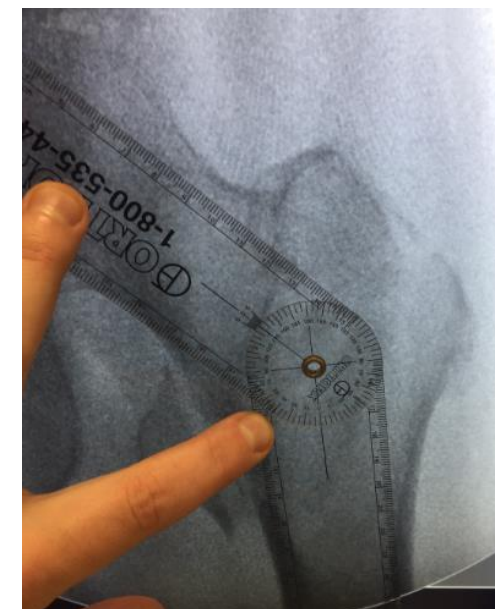
Undgå varus

- Trokanterhøjde
- Kontralaterale hofte

- Trendelenburg

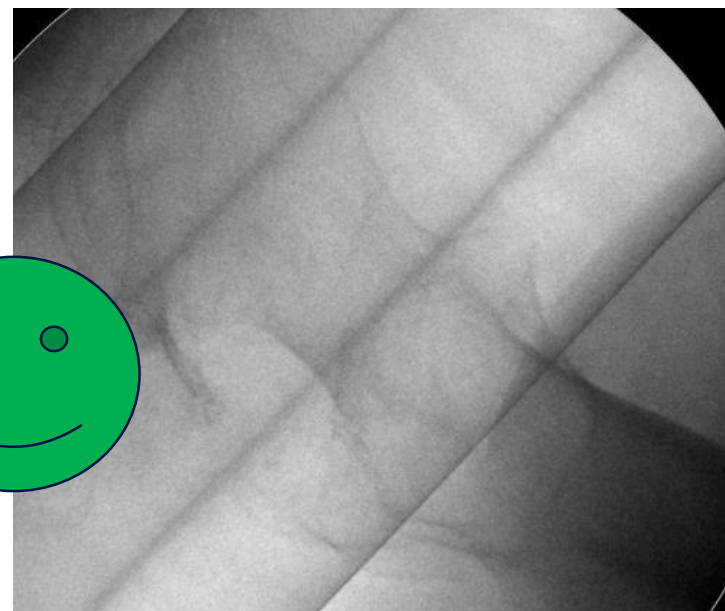
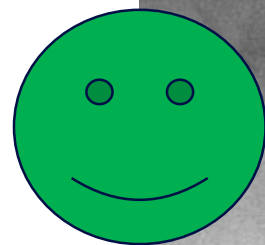
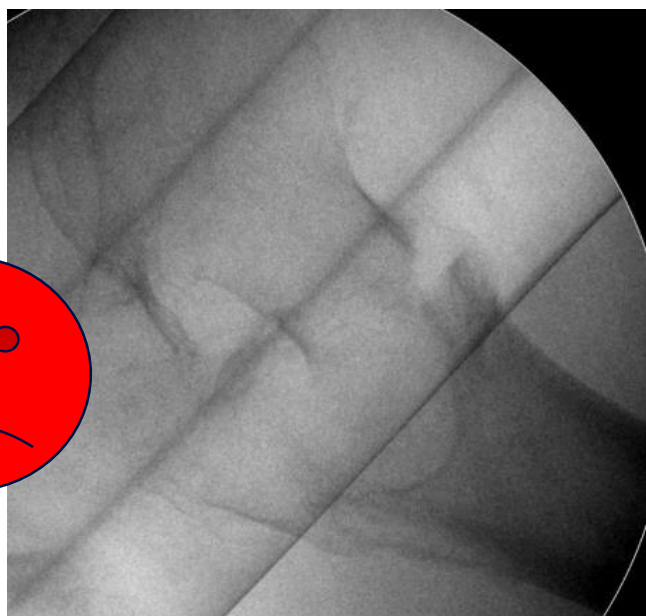
➔ Dårligt outcome

(Og beskyt gluteus medius)



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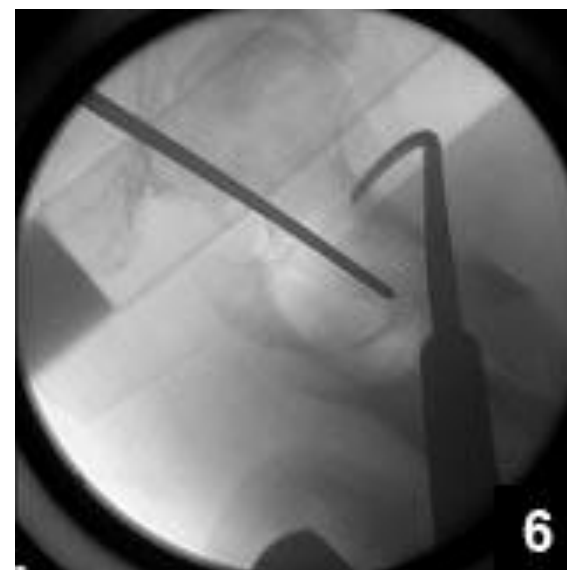
#4



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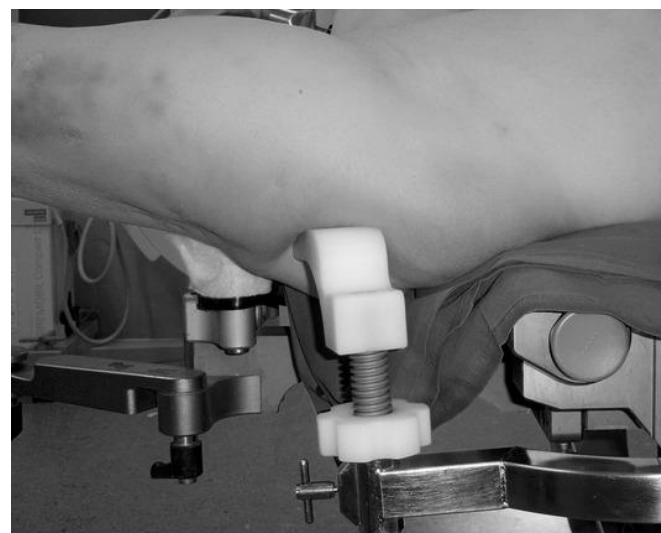
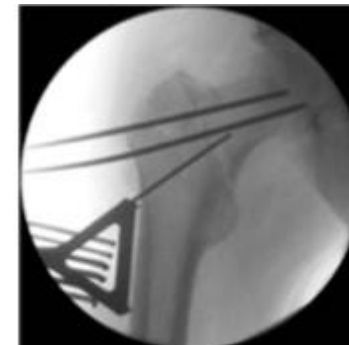
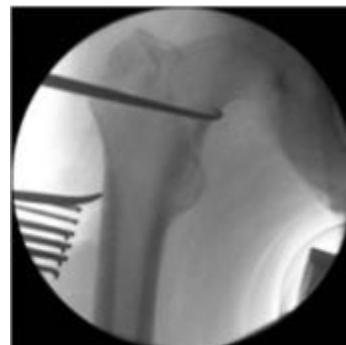
#5

Ream ikke på en ikke-reponeret fraktur
(Sømmet reponerer ikke!)



#6

Kend dit grej



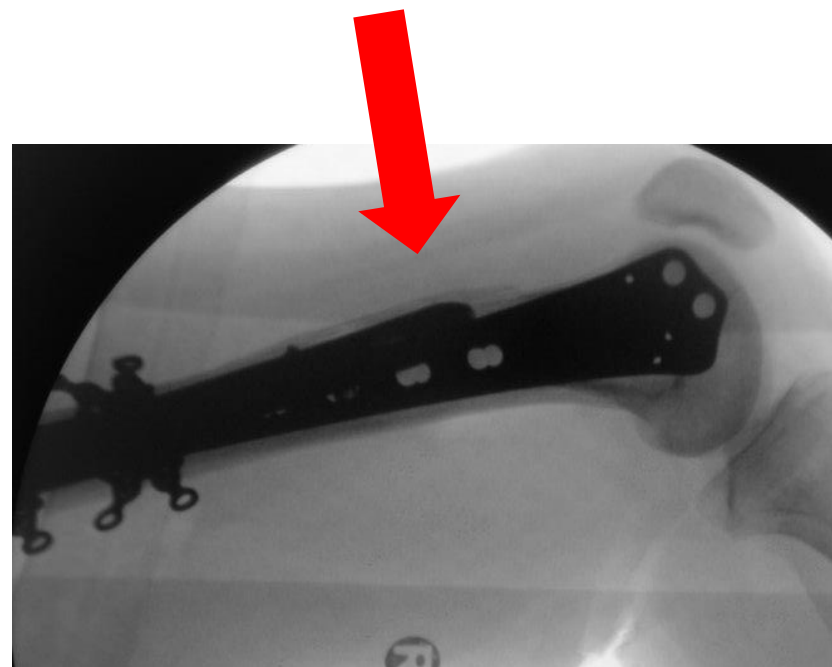
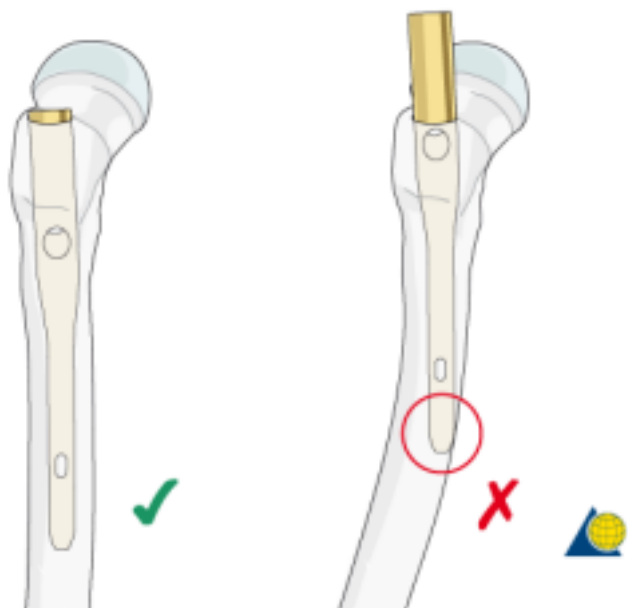
#7

Kend entrypoint og flyt en anelse medialt



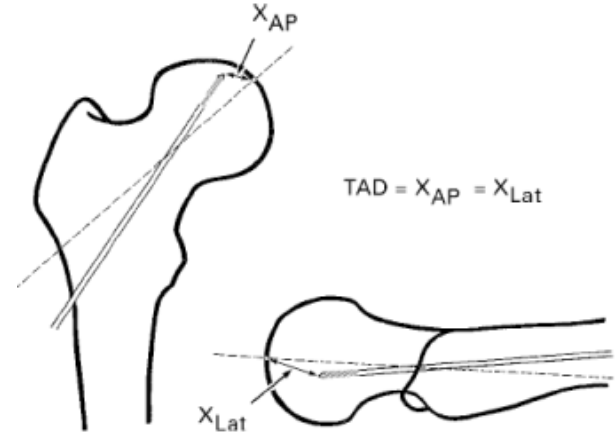
#8

Pas på anterior impingement



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#9



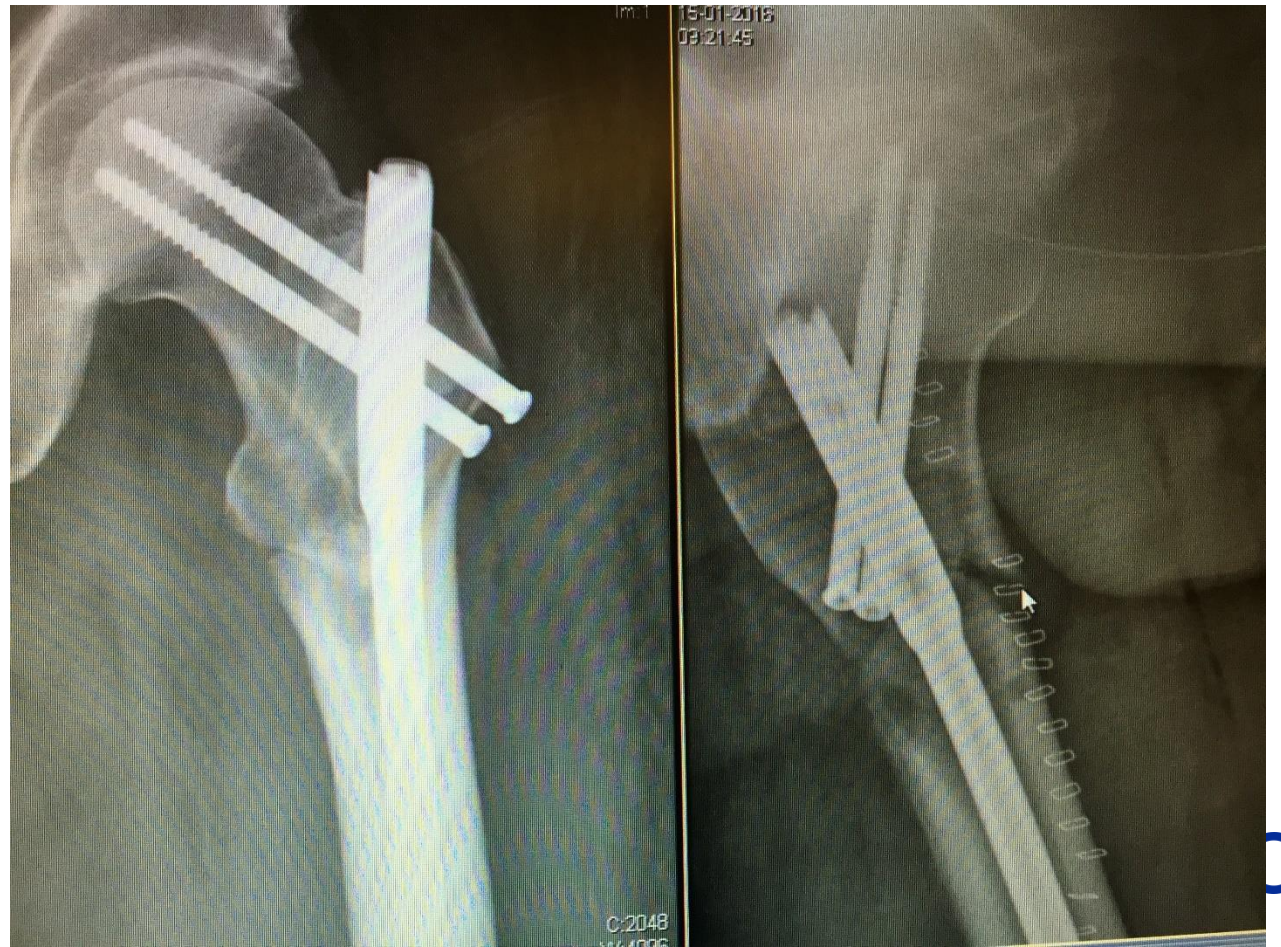
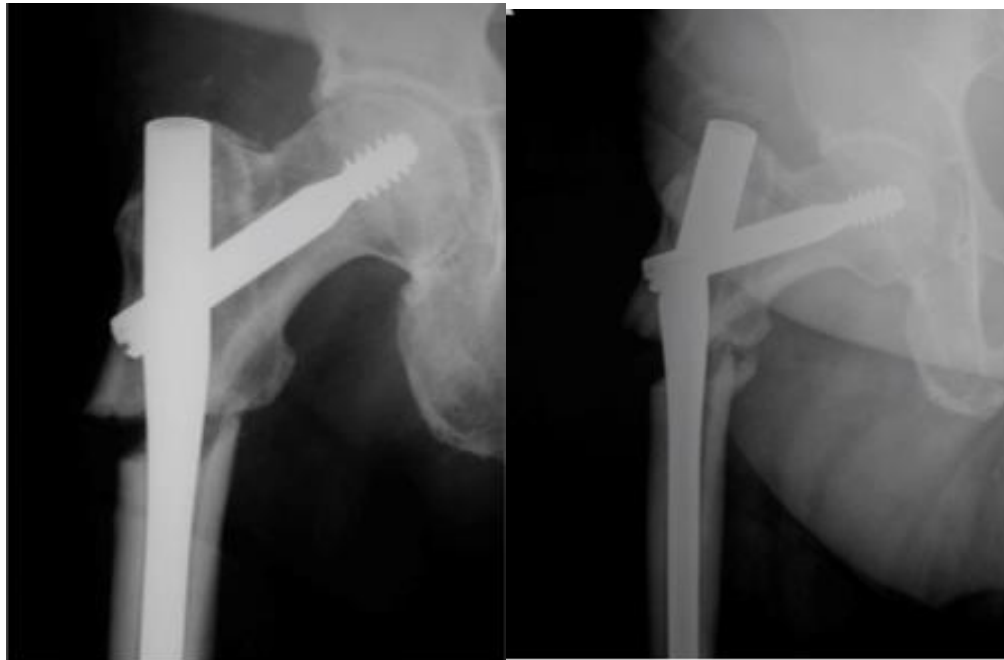
Dybt og centralt med TAD < 25mm

(gælder både ved DHS og IMN)



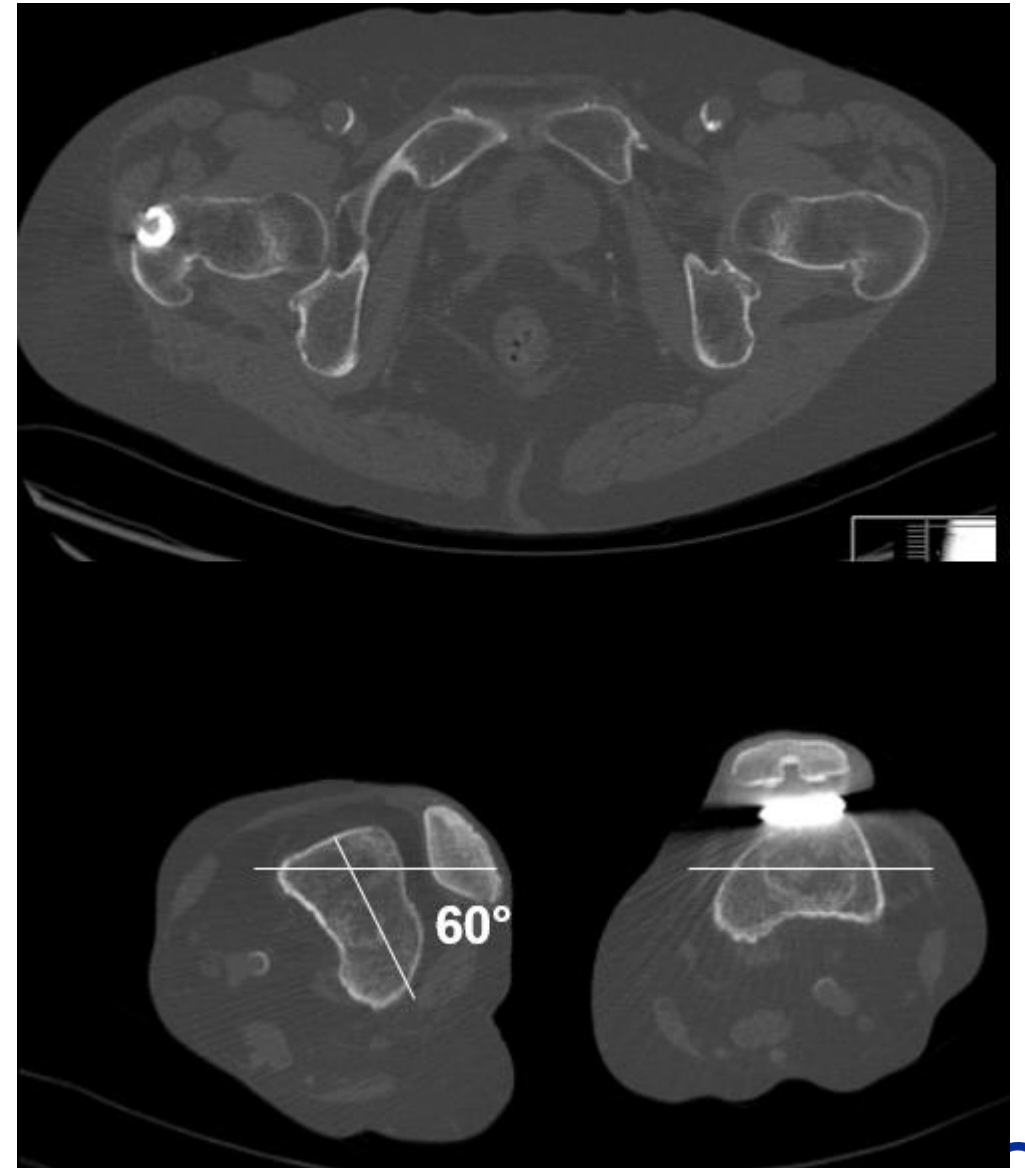
#10

Søm ikke frakturer med diastase



#11

Lås sømmene distalt
(Ved axialt og rotatorisk ustabile)



Take-home messages

Læs frakturen, brug en algoritme:

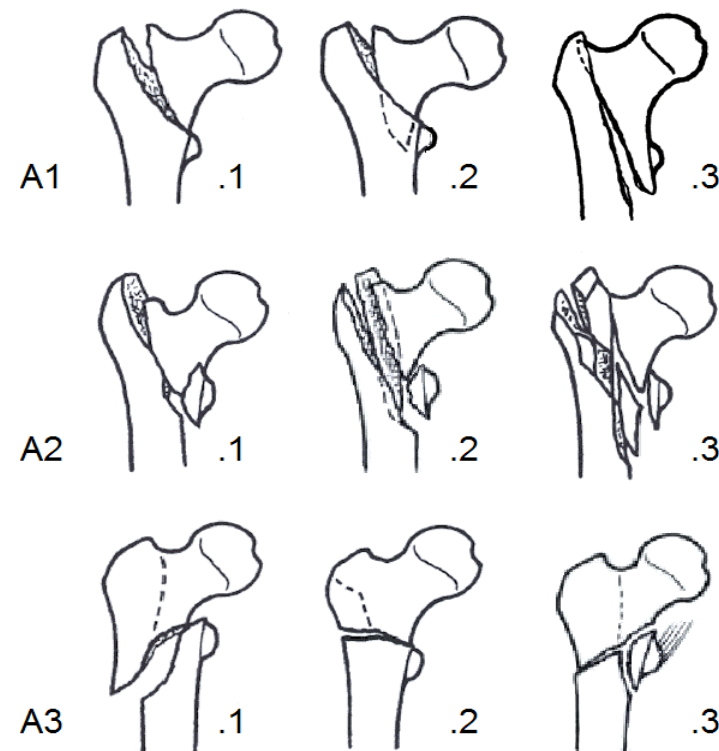
Søm til de ustabile frakturer

DHS til de stabile frakturer

Reponer (evt åbent) frakturen – ingen varus!!

TAD < 25 mm

Kend hyppigste problemer og hav en løsning parat



Spørgsmål?