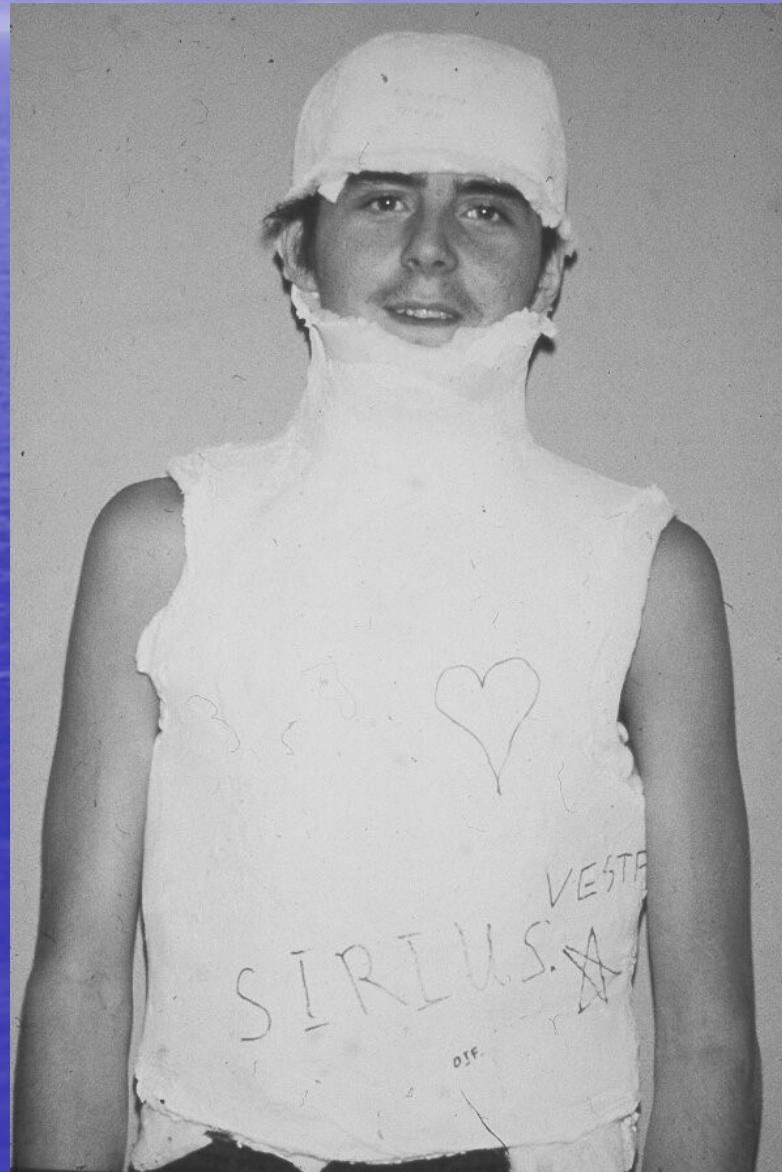


Áverkar á hryggsúlu:

- er áverkinn stöðugur eða óstöðugur?

Halldór Jónsson jr



Sérfræðingurinn!

-- hvað spáir hann í ?

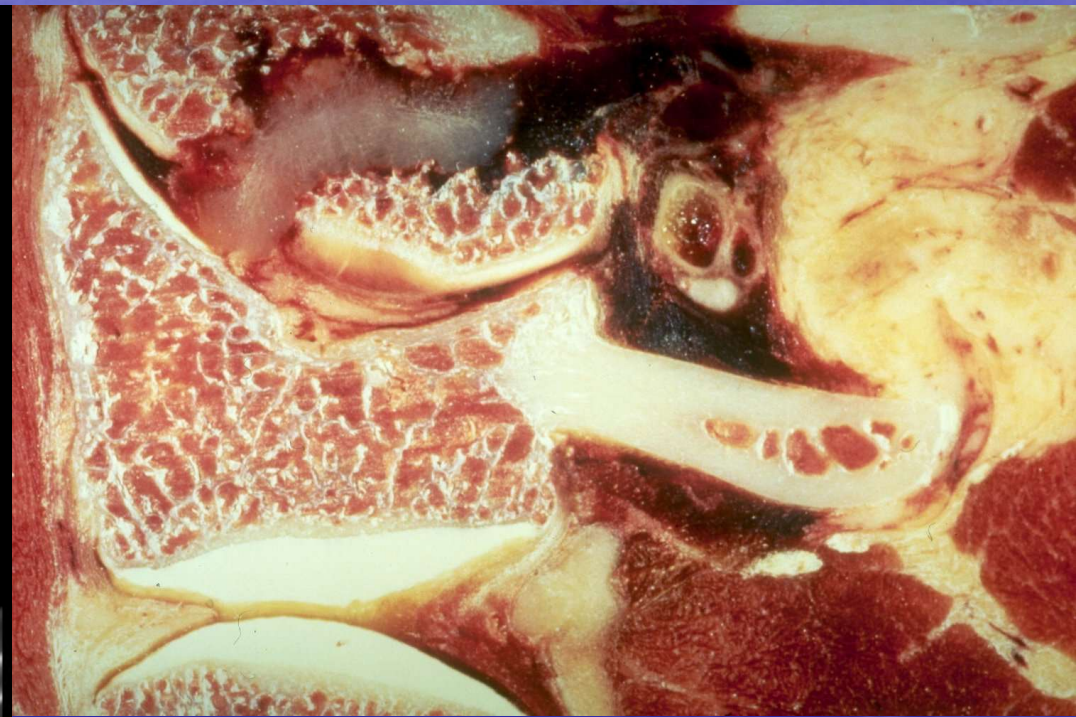
- Mat á stöðugleika skv ákv skilgreiningum
- Neurológísk einkenni?; engin, stöðug, versnandi

Markmið meðferðar:

- Endurskapa anatomiu!
- Endurskapa stöðugleika!
- Endurskapa hreyfifærni!

C0 – Occipital condyl brot

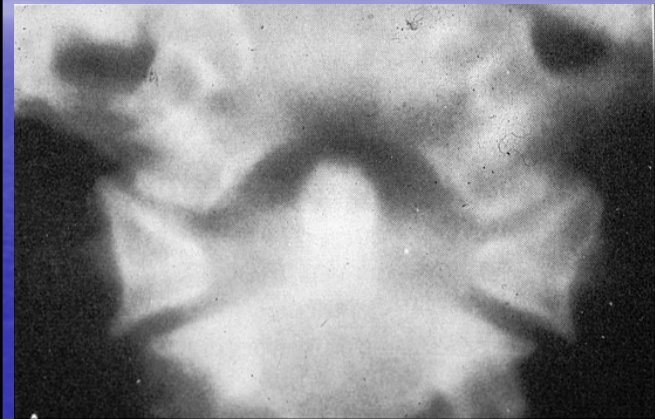
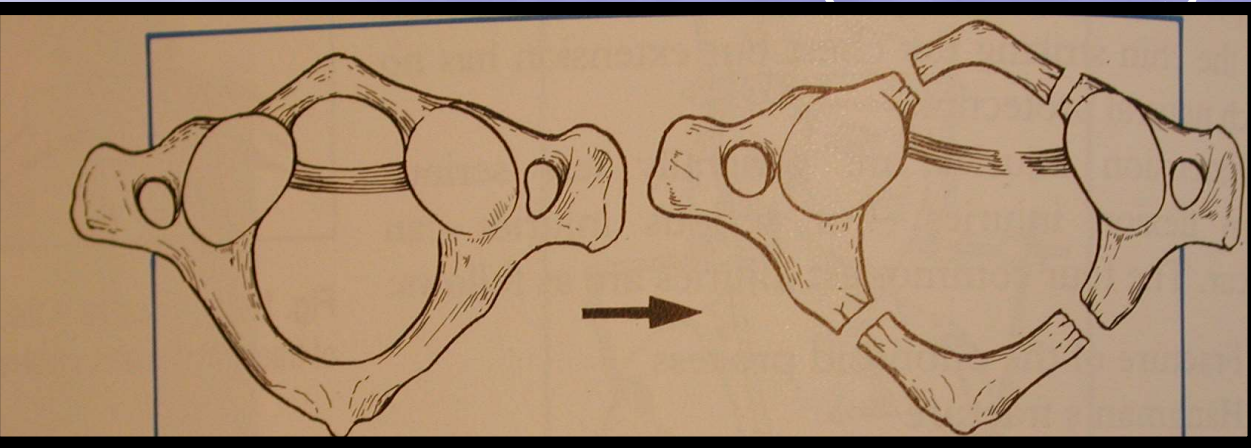
- (kúpubotninn - Lig. alaria)



- ekki til skilgreining
á óstöðugleika!

C1 – Jefferson brot

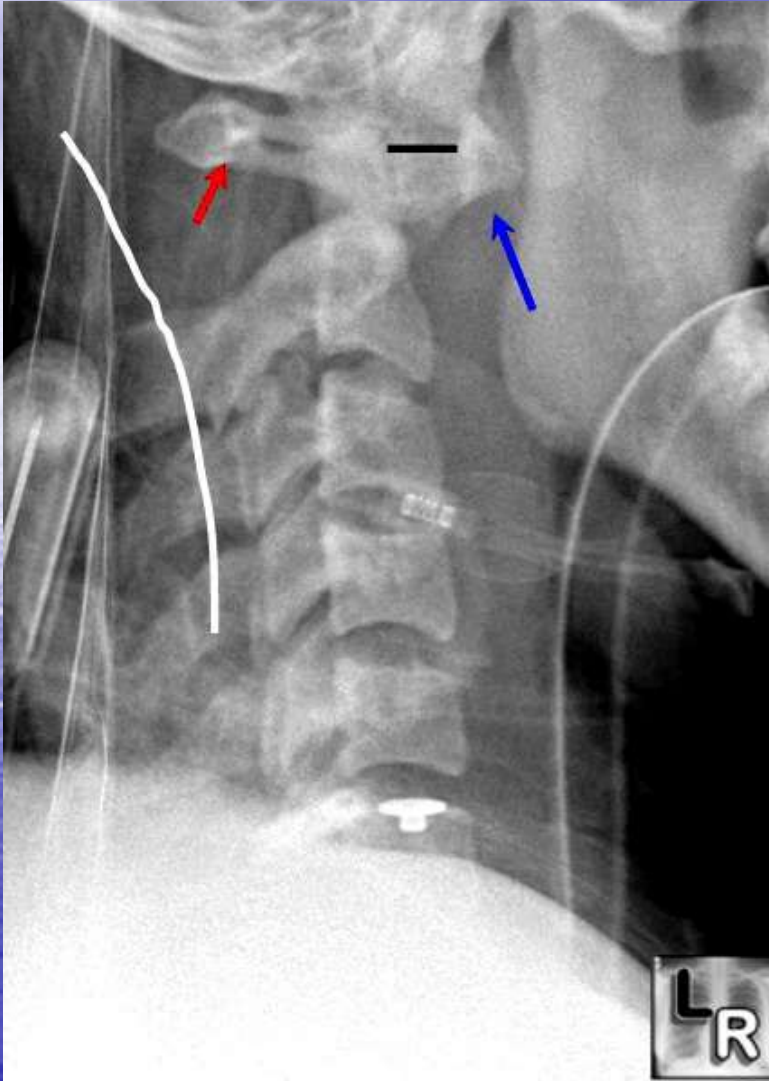
- (banakringlan)



← > 7mm →

Röntgenológískt mat á óstöðugleika:
Ef samarlögð gliðnun =/ > 7mm

C1-C2 liðskrið

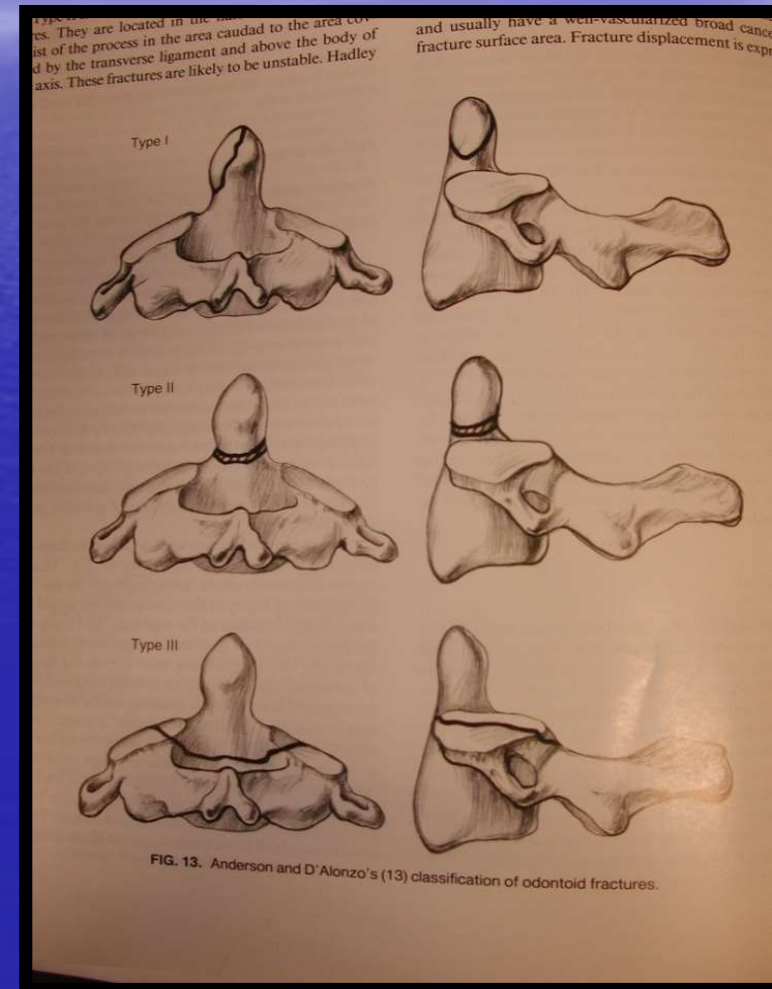


Röntgenológískt mat á óstöðugleika:
Ef gliðnun $>3\text{mm}$ (fullorðnir) og $>5\text{mm}$ (börn)!

C2 (fremri hluti)

Flokkun Anderson D'Alonzo 1974 í 3 gerðir brota:

- 1. Afrifa á dens toppinum
 - -stabílt
- 2. Brot í basis á dens
 - - viðkvæmt v/non-union
- 3. Brot niður í bolinn
 - - stabilt

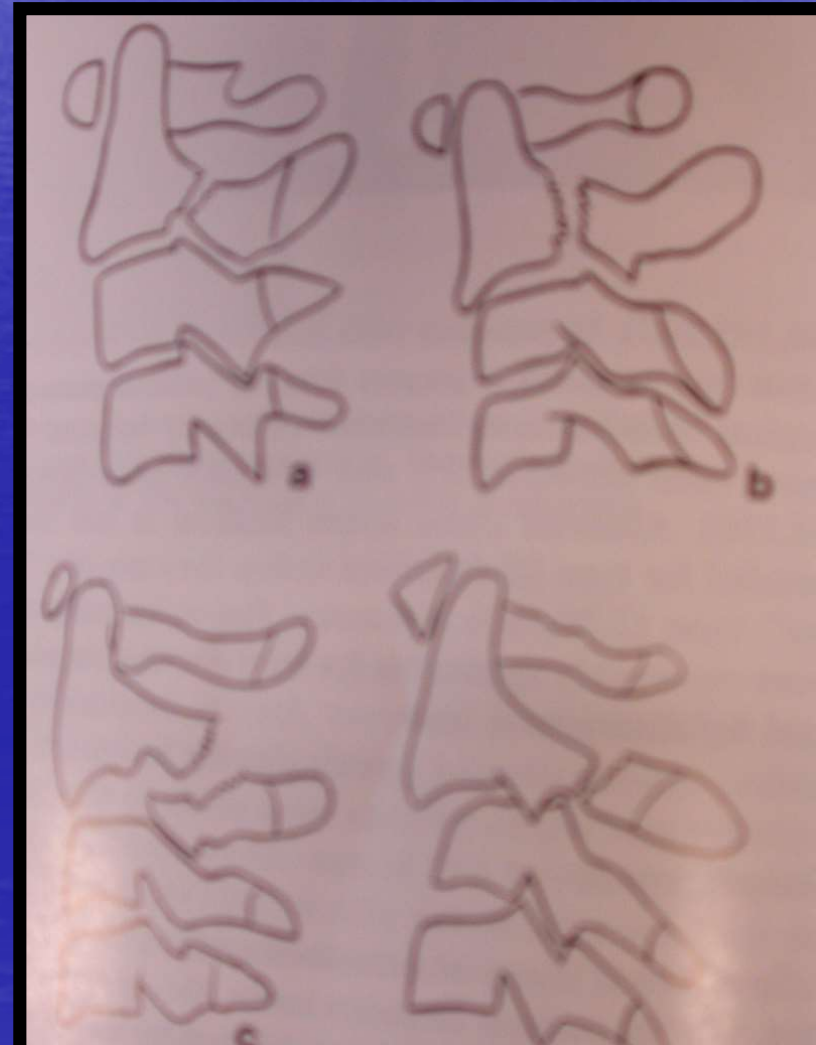


- Röntgenológískt mat á óstöðugleika:
- Ef eitthvað hliðrað, sjá "ef diskskaði"!

C2 (aftari hluti)

- Spondylolýsa
 - - stábilt
- Spondylolýsa + diskskaði C2-C3
 - – óstábilt (sjá neðar)

- **Röntgenológískt mat á óstöðugleika:**
- Ef $>3.5\text{mm}$ skrið eða $>11\text{gr}$ kyfósa í liðbili
- (diskskaða er einnig hægt að ath með segulómur).



Halo við efri háls hryggjaráverka



Allir óstöðugir áverkar: 8 vikur

Undantekning - 12 v í:

- Dens brot II
- Liðskrið C2 – C3
- “Flókin brot” (> 1 liðbil)

Frábending:

Sjúklingar með höfuðkúpubrot

Ósammvinnuþýðir sjúklingar (geð, aldur, fíklar, Becht)

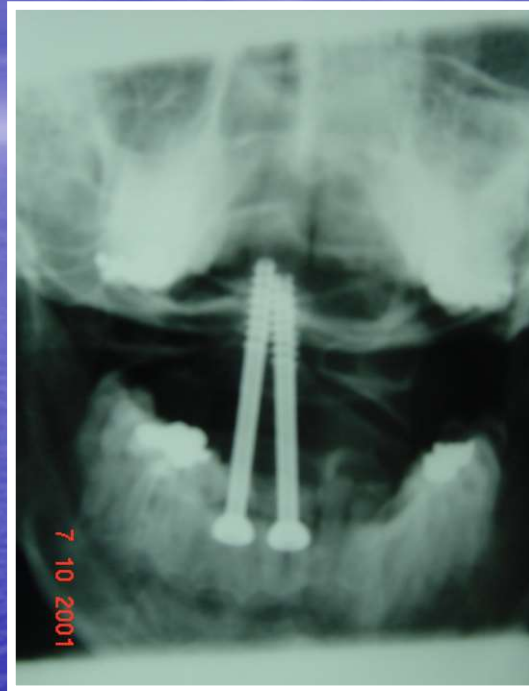
Fylgikvillar:

Hliðrun 10-12 %, Neurologisk versnun 1-2 %, Pneumonia 5 %,
nuddsár 1-2%

Skurðaðgerð v/ efri háls hryggjaráverka

- Ef áverki réttist ekki "lokað"!
- Ef áverki hliðrast / grær ekki í Halo
- Ef vaxandi taugaeinkenni
- Ef halovest-meðferð "passar ekki"!

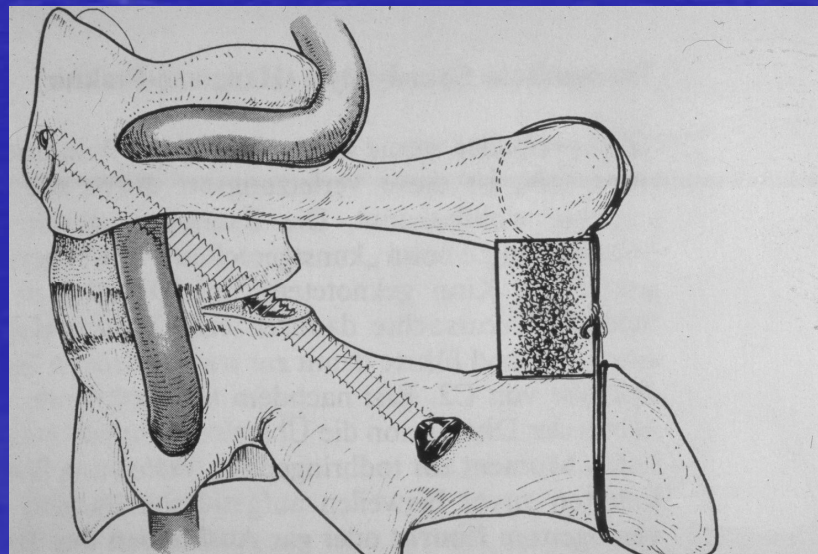
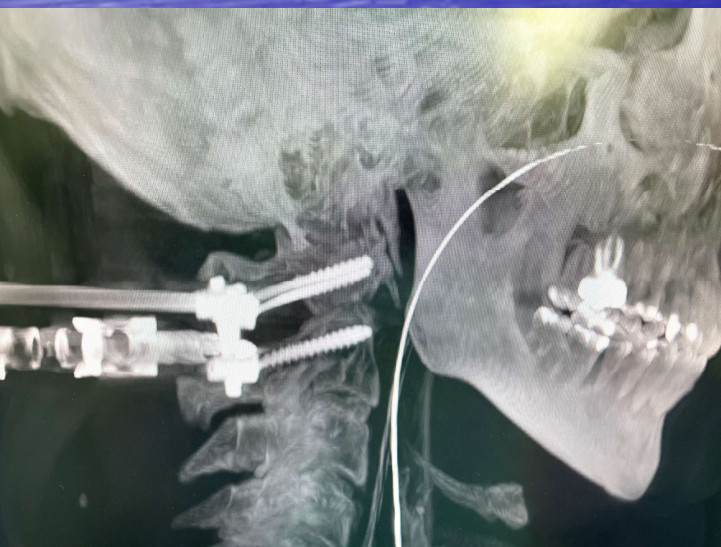
Skurðaðgerðir á efri háls hrygg



Harms



Böhler

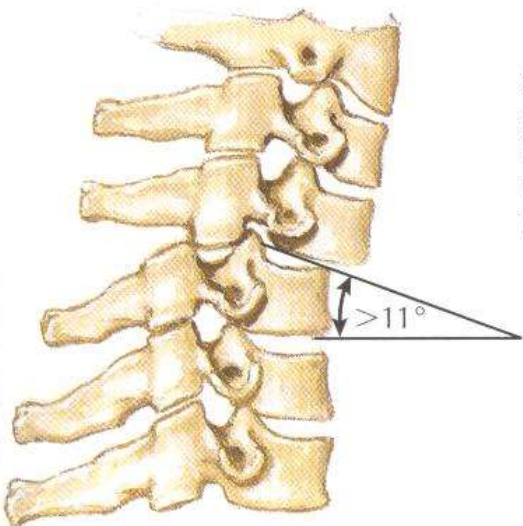
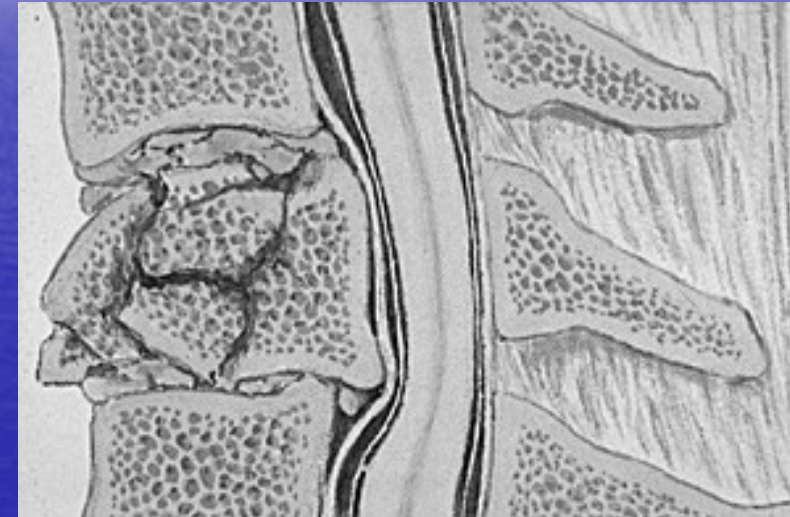


Gallie + Magerl

Skurðaðgerðir á neðri háls hrygg

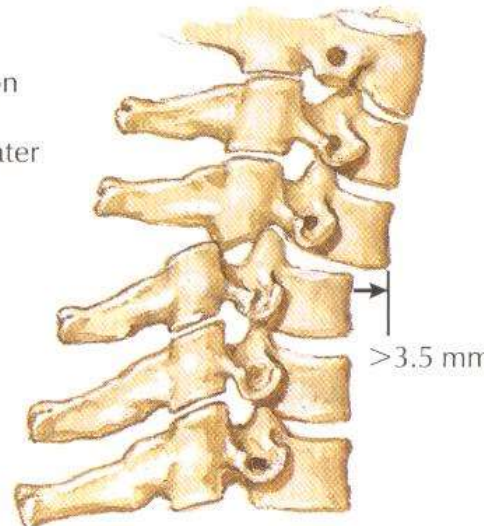
- Hryggjarbolsbrot (fremri hluti)
- Lamina-/spinosusbrot (aftari hluti)
- Liðskrið/hlaup (fremri og aftari hluti)
- Óstöðugt ef: $>3.5\text{mm}$ skrið eða $>11\text{gr}$ kyfosa í liðbili eða neurologísk einkenni

Röntgenologist



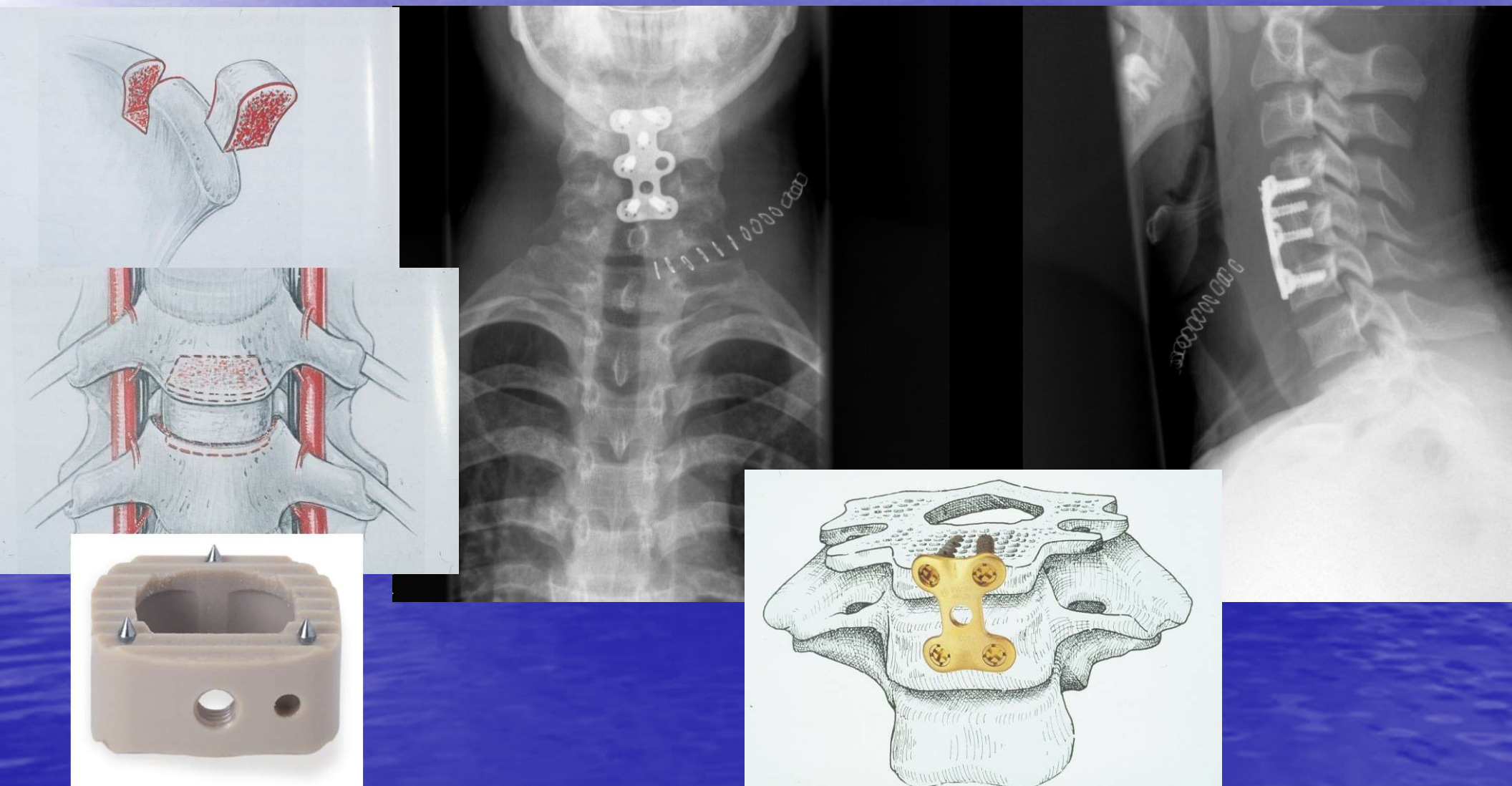
Subluxation with angulation greater than 11° and/or anterior displacement greater than 3.5 mm generally indicative of instability

F. Netter
M.D.
© ION



Mænuáverki -
getur einnig
verið úttaug

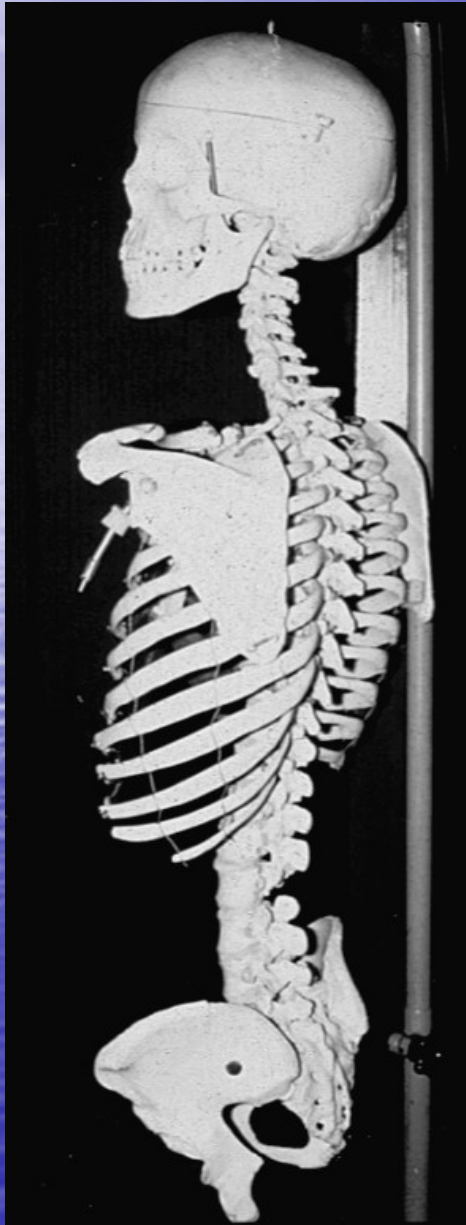
Fremri spenging á neðri háls hrygg með stólpa og plötu



Aftari spenging á háls hrygg með stögum



Thoraco - lumbar brot TH11-L2



Biomechanics

Three biomechanical regions

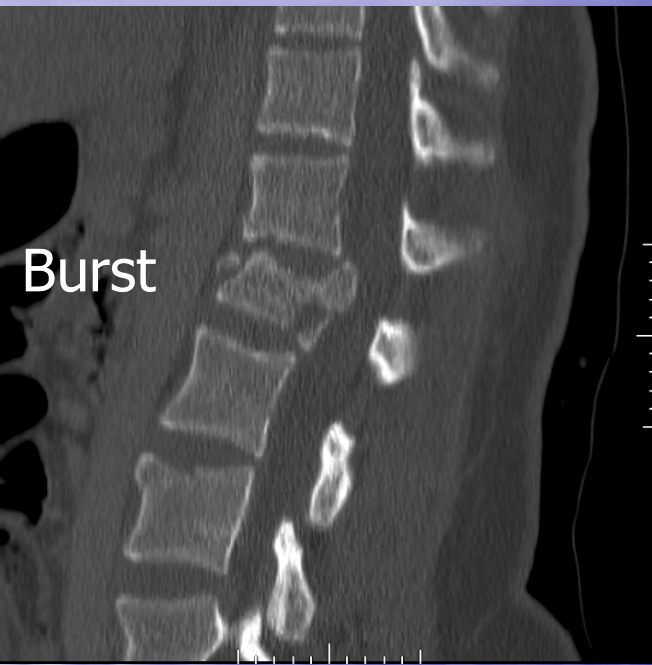
T1-T8:
relatively rigid (ribcage),
kyphosis.
flexion injury pattern predominates

T9-L2:
transition: immobile - mobile,
transition: kyphosis - lordosis
most injuries occur here

L3-sacrum:
mobile, lordosis
axial load injuries predominate



Thoraco - lumbar brot TH11-L2



Dæmi

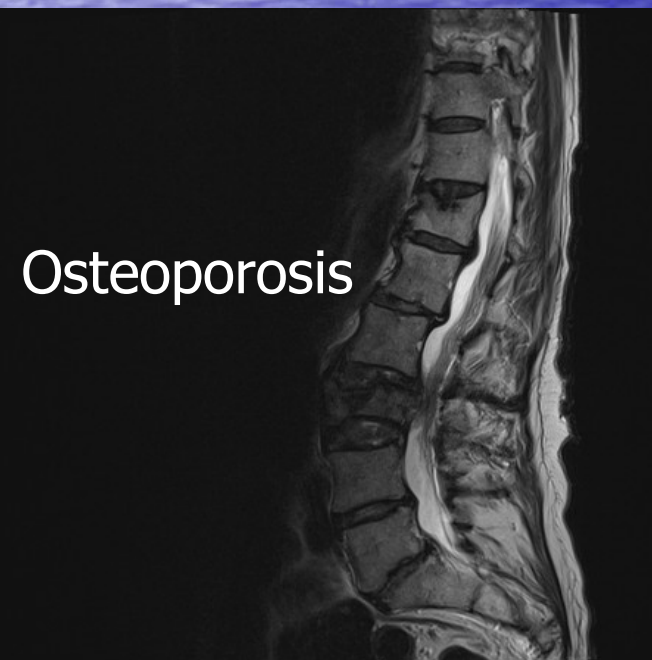
Stöðugleiki fer vegna:

Burst: háorku brot

Bechterew o osteoporosis:
lágorku brot

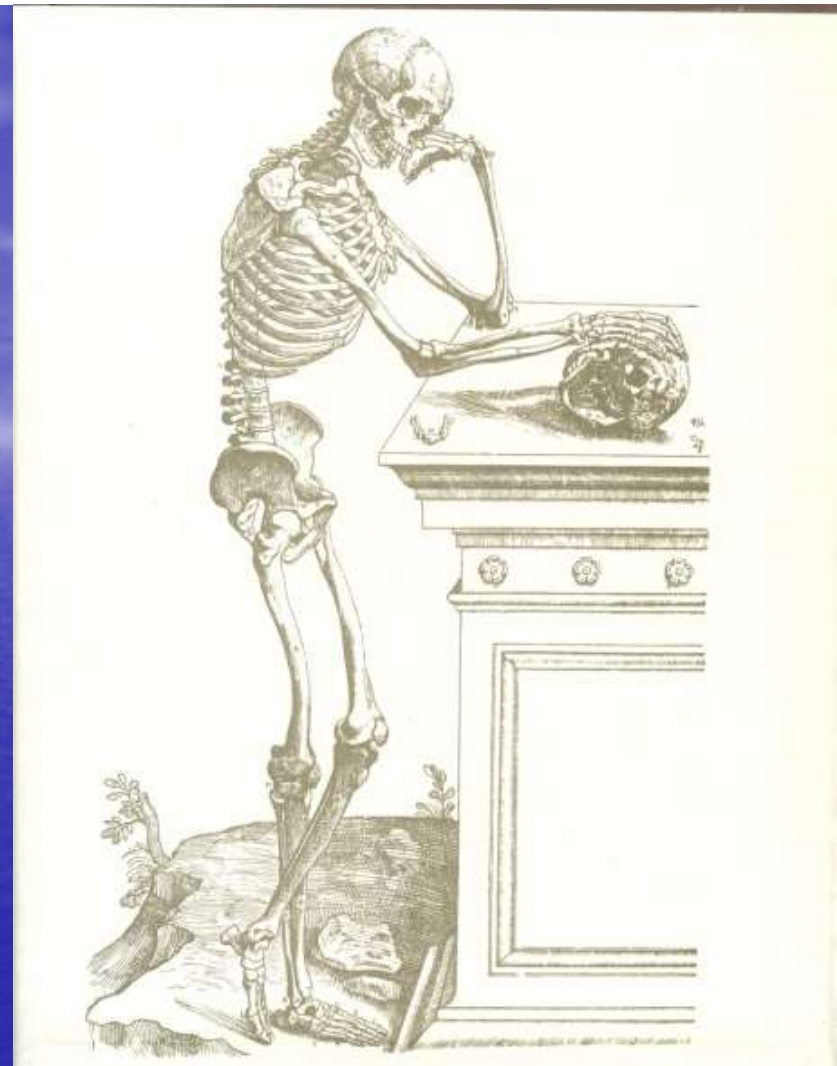
Hryggsýking: St Aureus

Meinvarp: t.d. Ca colon:



Uppvinnsla:

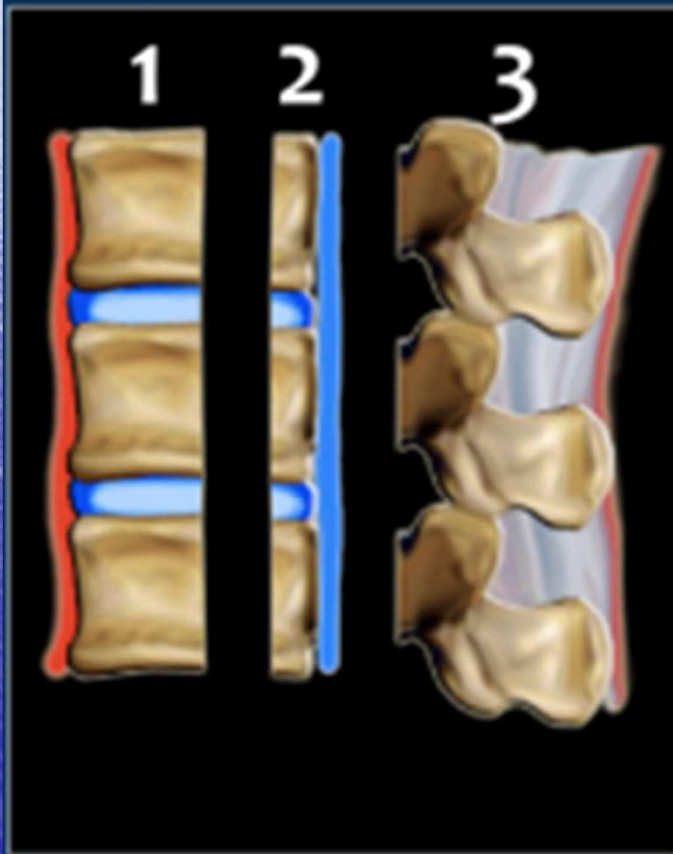
- Skoðun – sérstaklega taugaskoðun!
- Myndgreining: CT, MR
- Meta stöðugleika: (Denis, AO), TLICS
- Meðferð:
 - Stöðug brot: 3P belti?
 - Mobilisera: hvenær ?
- - Óstöðug brot: OP?, hvenær?
 - Mobilisera: hvenær ?



Meta stöðugleika; þristur (3).....

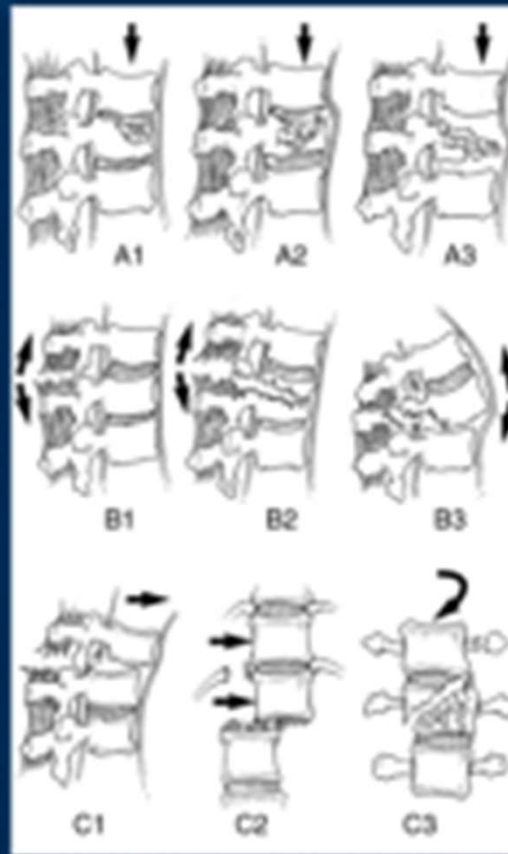
Denis

3-column classification



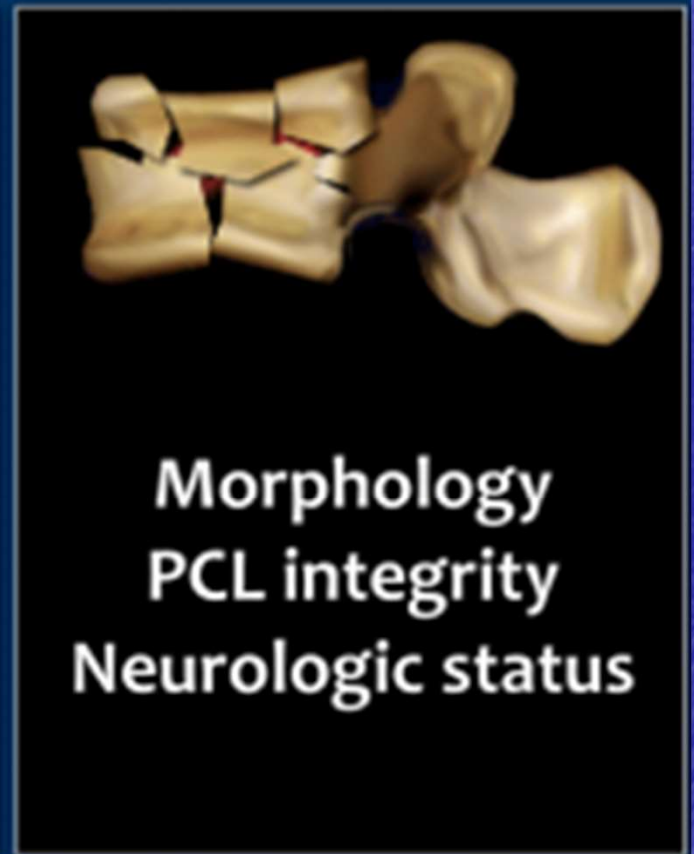
AO

classification



TLICS

classification



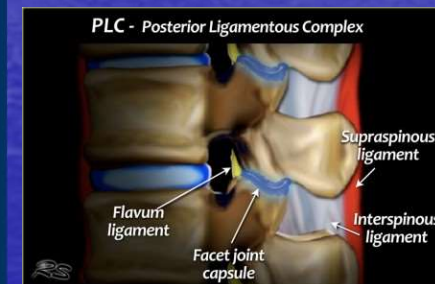
TLICS (Vaccaro et al) – “The 3 independent predictors”

“ThoracoLumbarInjuryClassificationScore”



Alex Vaccaro

TLICS 3 independent predictors				
1	Morphology immediate stability	<ul style="list-style-type: none"> - Compression - Burst - Translation/rotation - Distraction 	1 2 3 4	<ul style="list-style-type: none"> - Radiographs - CT
2	Integrity of PLC longterm stability	<ul style="list-style-type: none"> - Intact - Suspected - Injured 	0 2 3	<ul style="list-style-type: none"> - MRI
3	Neurological status	<ul style="list-style-type: none"> - Intact - Nerve root - Complete cord - Incomplete cord - Cauda equina 	0 2 2 3 3	<ul style="list-style-type: none"> - Physical examination
Predicts		<ul style="list-style-type: none"> - Need for surgery 	0 – 3 4 > 4	<ul style="list-style-type: none"> - nonsurgical - surgeon’s choice - surgical



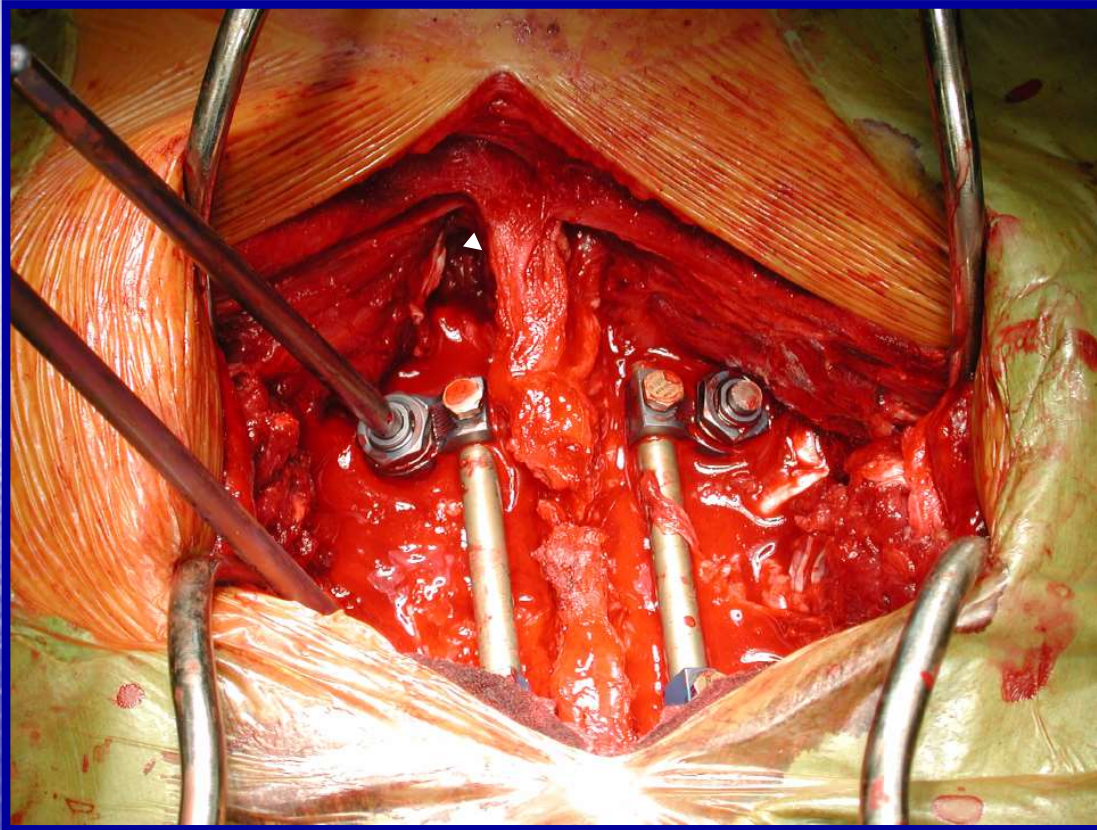
Need MRI!?

Ekki aðgerð: 3punkta belt

- **Ábending: Stöðugir áverkar (6v-24klst, 6v-12klst, 3m sjþj)**
- Frábending: Óstöðugleiki, mörg brot, rifbrot, lugnaáverki, offita, bruni
- Kostur: Þarf ekki skurðaðgerð, strax á fætur
- Ókostur: Ekki auðvelt – samvinna.
- Getur einnig valdið lungnabólgu, þrýstingssárum og brot getur versnað.



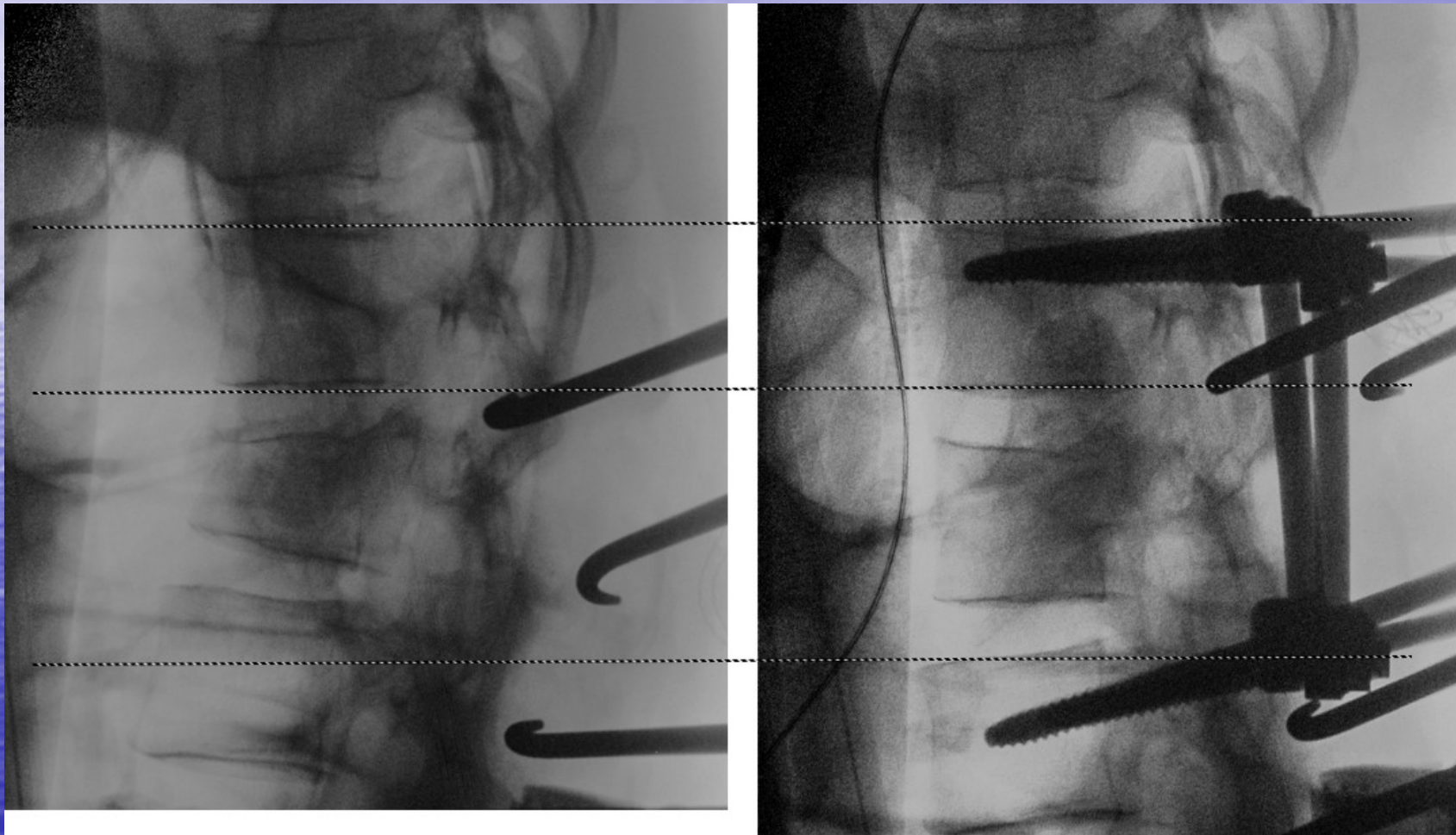
Skurðaðgerð með aftari “transpedicular” festingu
(virkar fyrir alla T-L áverka – óháð brotategund)



“ligamento – taxis”



Röntgenmynd pre- og postop



Takk fyrir !

