

PÆDIATRISK RADIOLOGI: BEVÆGEAPPARATET

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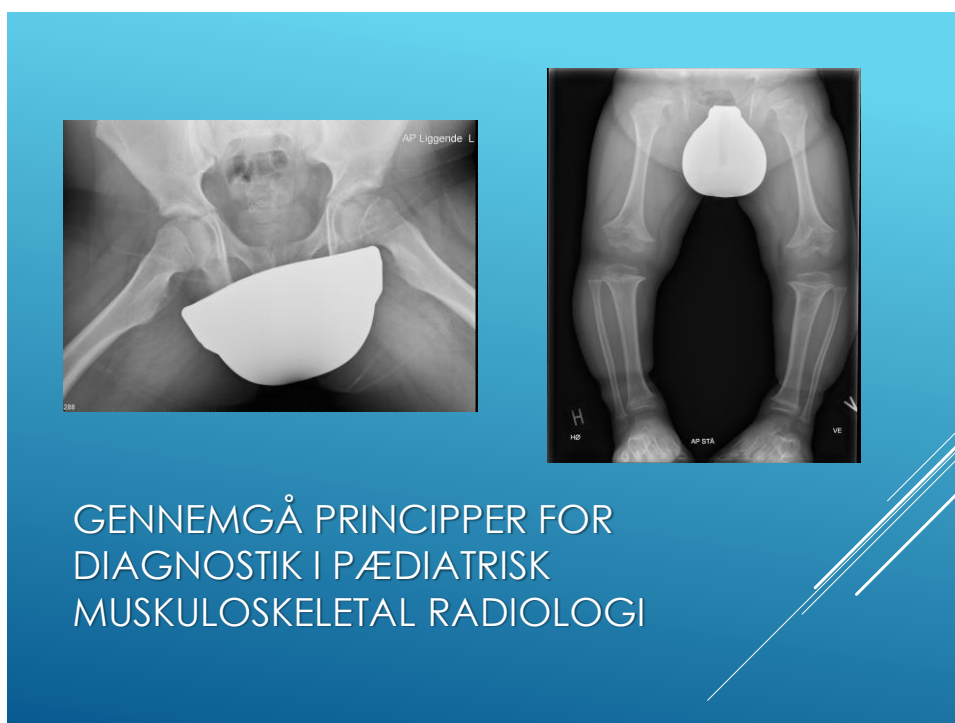


WWW.RADIOLOGY.DK

2



3



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- ▶ [Knoglebiologi og knoglealder](#)
- ▶ [Frakturer](#)
- ▶ [Tumorer](#) - Generelt (ellers A-kursus Ortoradiologi)
- ▶ (Infektioner A-kursus Ortoradiologi)
- ▶ (A-kursus Ortoradiologi)
- ▶ [Hoftedysplasi](#) og hofteforandringer ved cerebral parese
- ▶ [Systemiske sygdomme og syndromer](#)
- ▶ [Tema: Det haltende barn](#)
- ▶ Cases undervejs – og evt. til slut
- ▶ [Litteraturforslag \(Bøger, artikler, Links\)](#)

EMNER

5

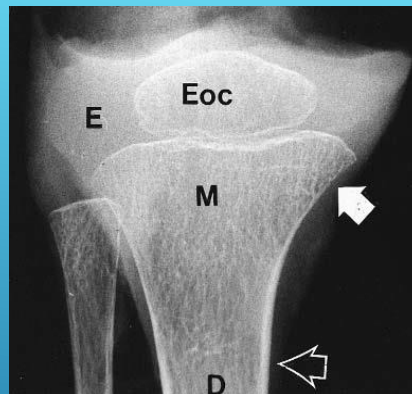
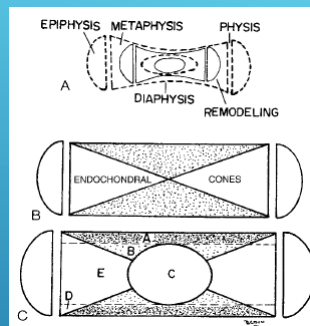
KNOGLEBIOLOGI

6

- ▶ **Vækstlinie:**
Stødabsorberende
Svagere end
ligamentene
- ▶ **Tyk periost**
Ud over at være
tyk, også meget
stærk
Nedsætter risikoen
for
frakturdislokation
Løser bundet til
knoglen – især hos
mindre børn
- ▶ **Anderledes
biomekanik:**
Mindre skrøbelige
Fleksible, elastiske
og plastiske

KNOGLER: BØRN VS. VOKSNE

7



8



7. gestationsmåned: Metacarpal knogler

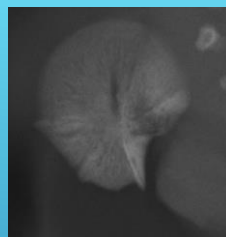
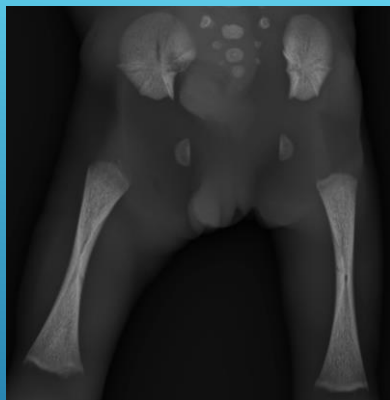


Postnatal remodelering

ENCHONDRAL OG INTRAMEMBRANØS OSSIFIKATION



9



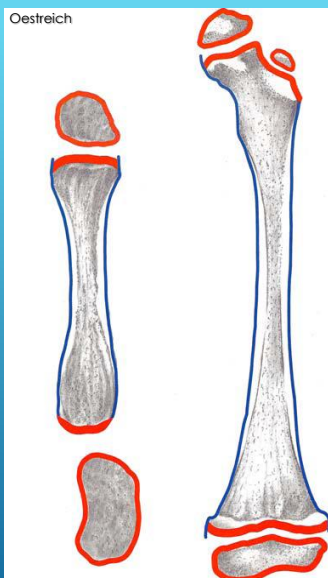
FOSTER: 20 UGER

10



5 DAGE GAMMEL DRENG

11



KNOGLEVÆKST

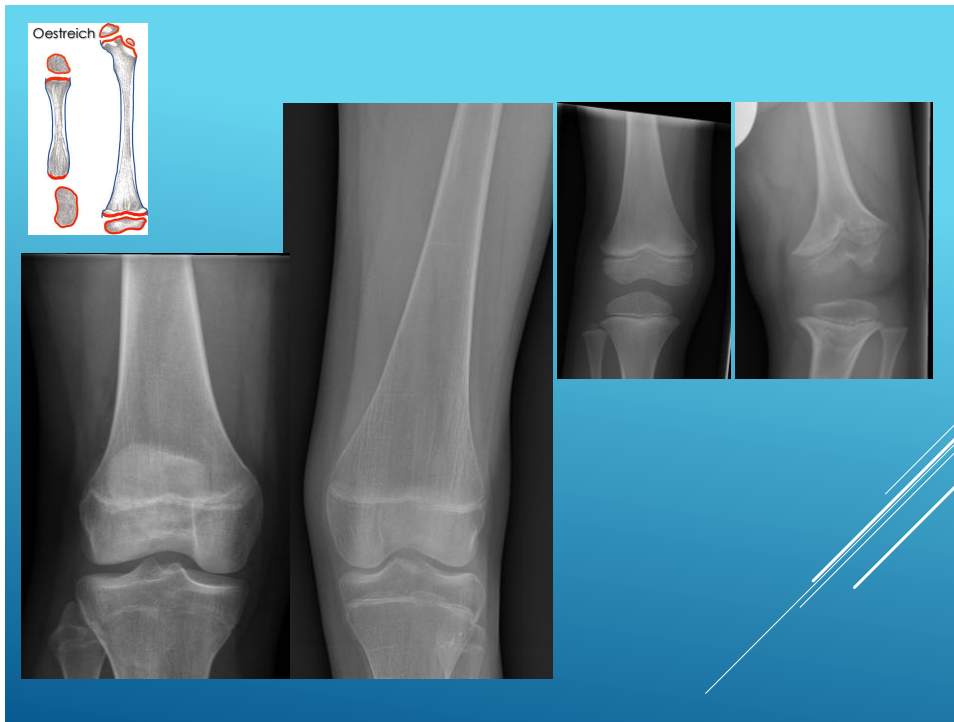
Enchondral ossifikation



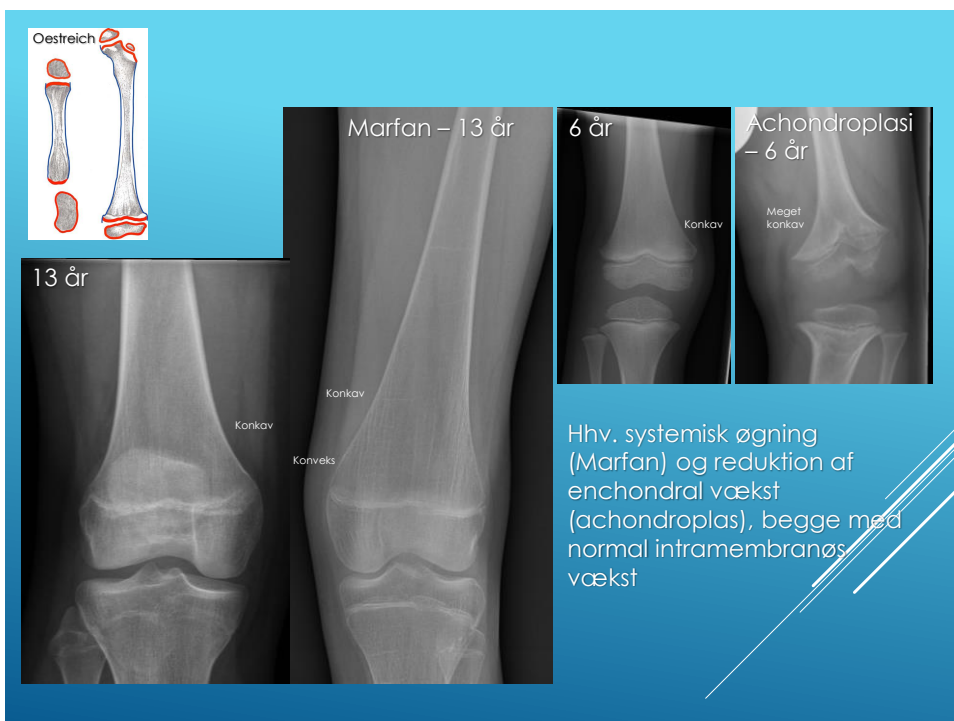
Intramembranøs ossifikation



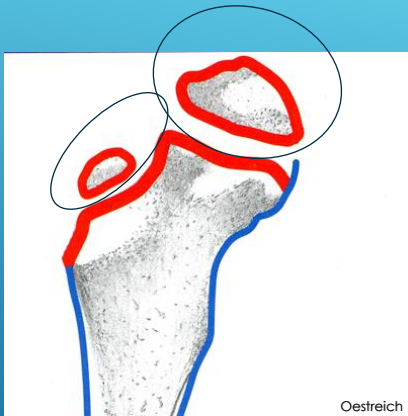
12



13




14

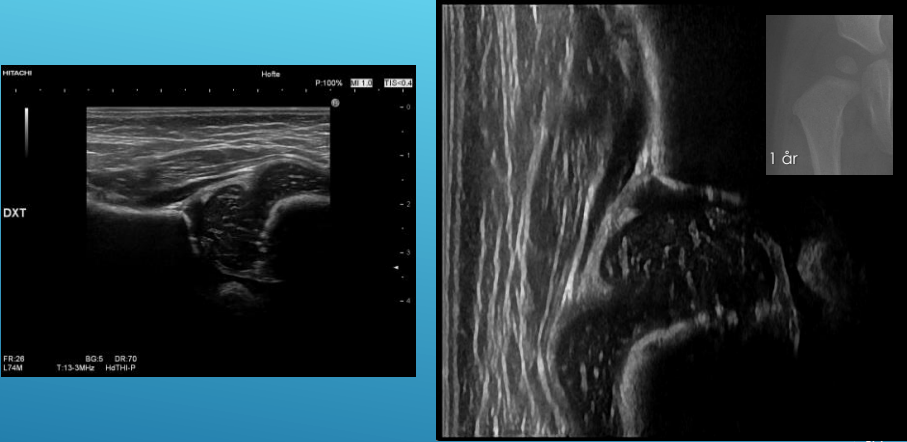


Oestreich

- Diafyse
- Metafyse
- Epifyse/Apofyse
- Fyse (epifyselinien (radiologi) eller vækstsikven (anatomil))



15



1 år

NEONATAL: UL SKANNING AF HØJRE HOFTE

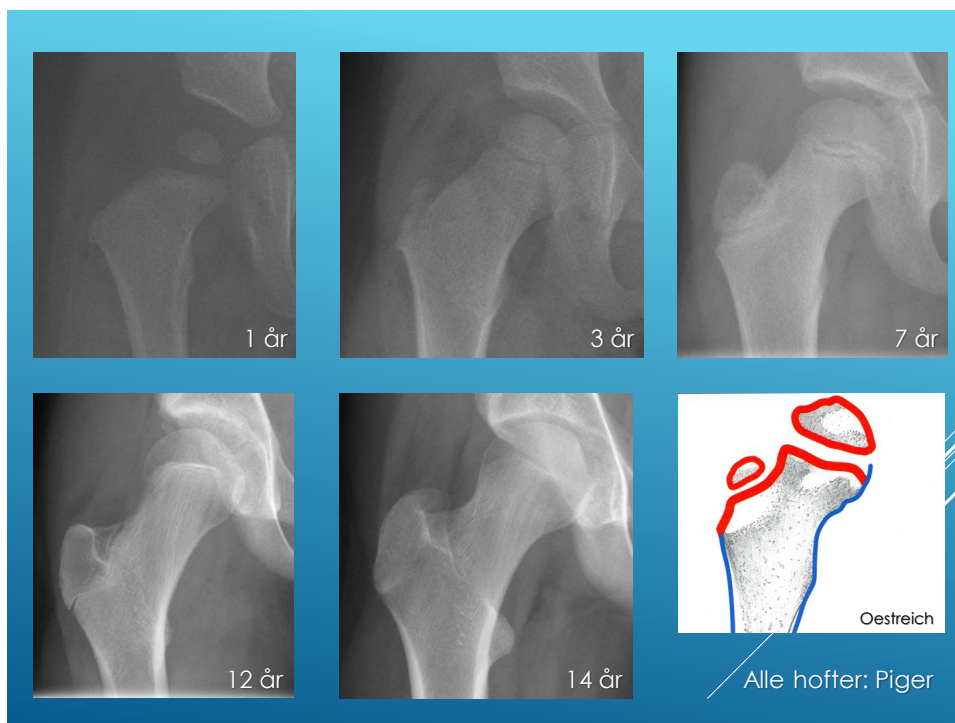
16

1. Caput femoris
2. Trochanter major
3. Metafyse (femur)
4. Diafyse (femur)
5. Acetabular loft
6. Bruskede del af acetabulum
7. Labrum der fortsætter i ledkapsel
8. Os pubis (ossificeret del)

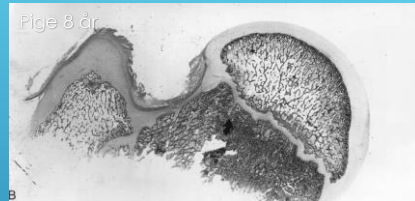
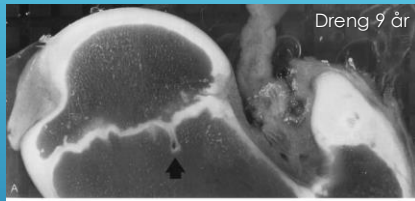


NEONATAL: UL SKANNING AF HØJRE HOFTE

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FYSENS FACON I PROXIMALE FEMUR
MAKROSKOPISK OG HISTOLOGISK.



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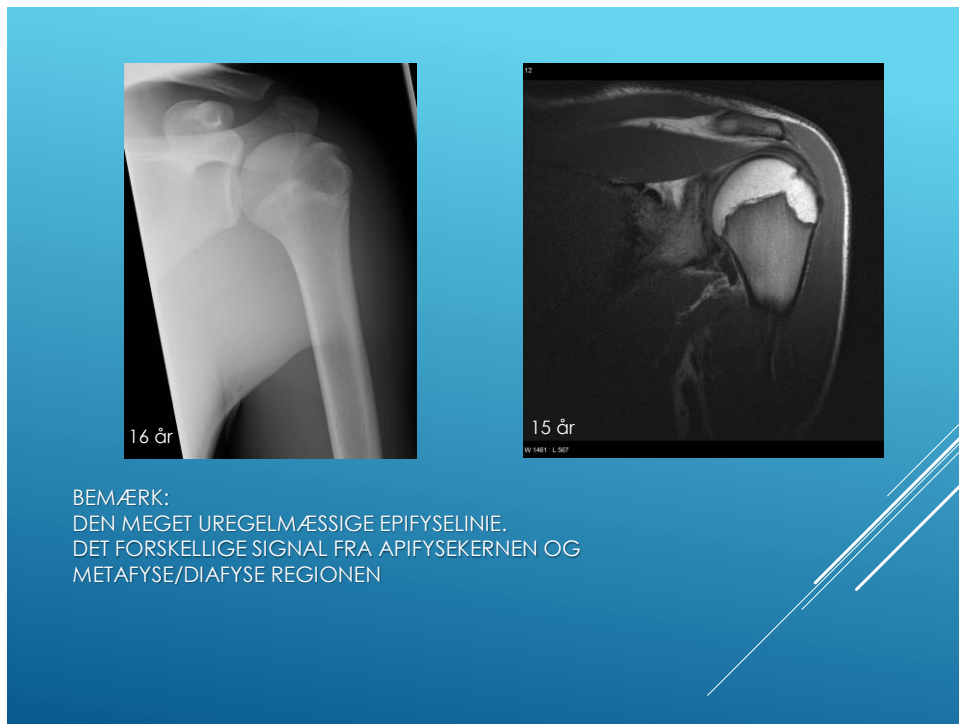


PIGE 3½ ÅR (HER GRÆNSEDYSPLASTISKE HOFTER)

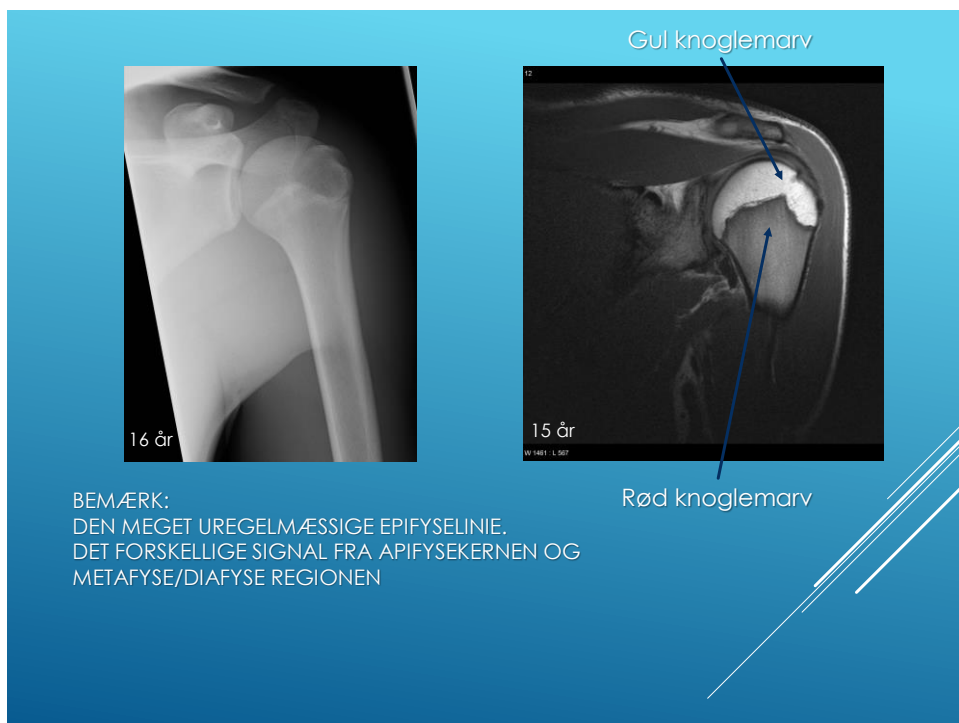


Se i øvrigt: Laor et al. 2009

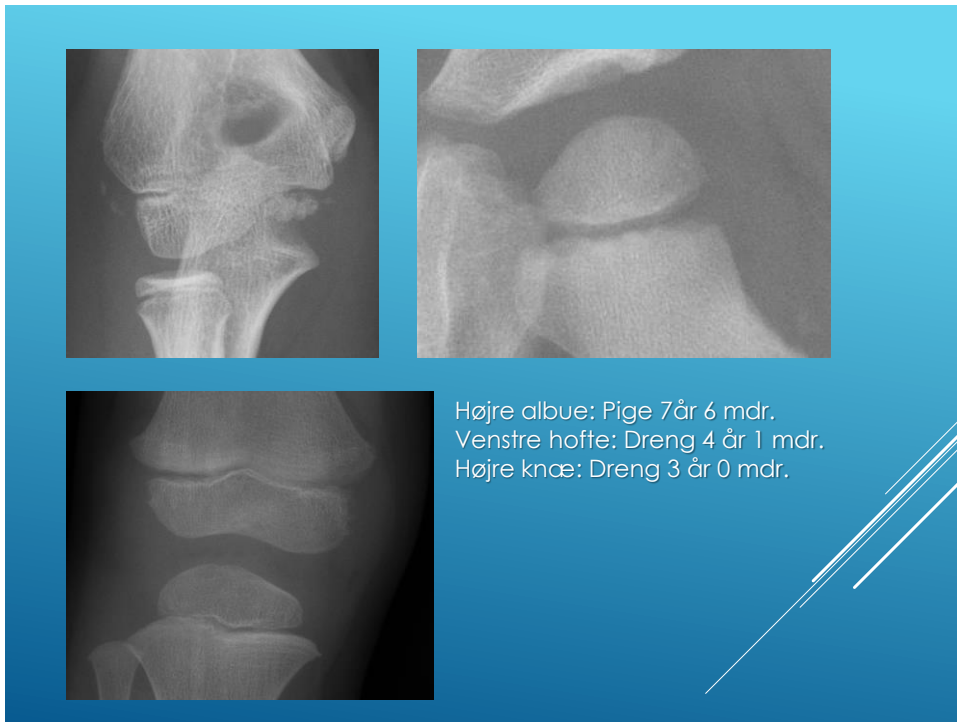
20



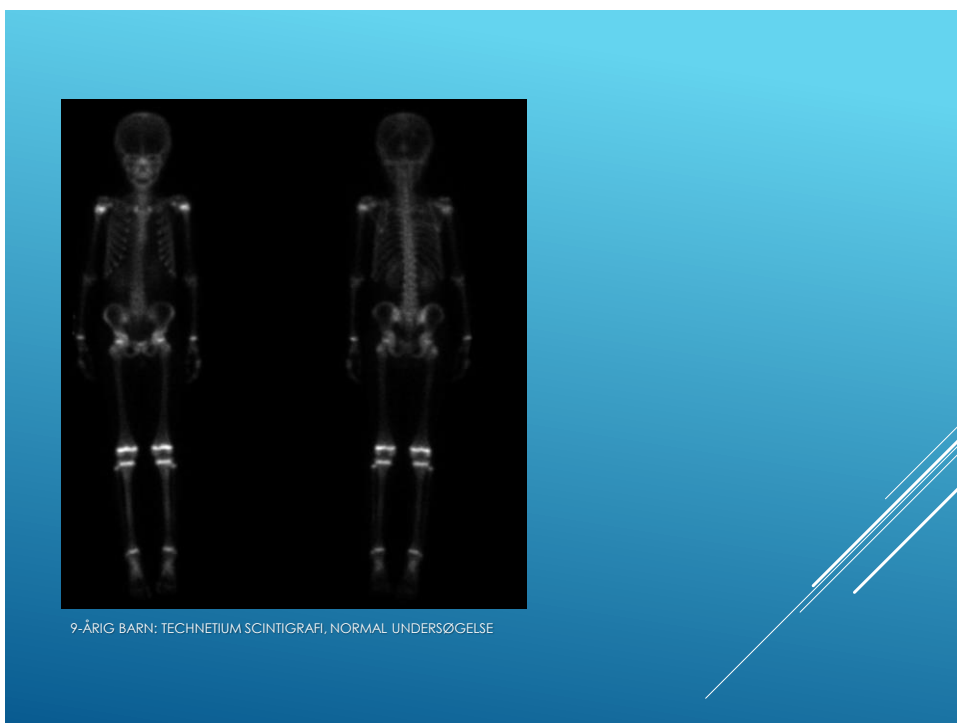
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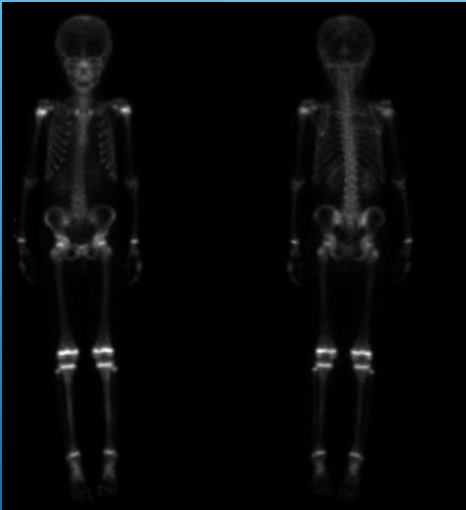
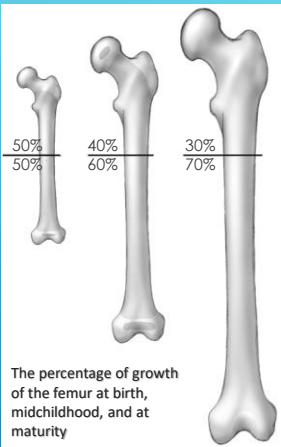
22



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The percentage of growth of the femur at birth, midchildhood, and at maturity

Peterson 2007

9-ÅRIG BARN: TECHNETIUM SCINTIGRAFI, NORMAL UNDERSØGELSE

25

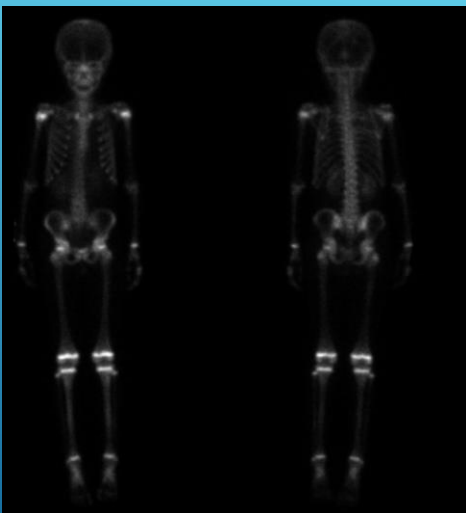
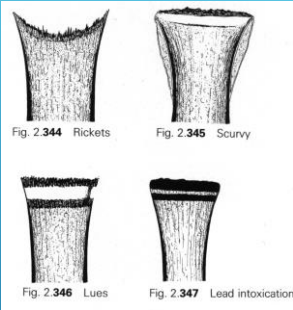



Fig. 2.344 Rickets

Fig. 2.345 Scurvy

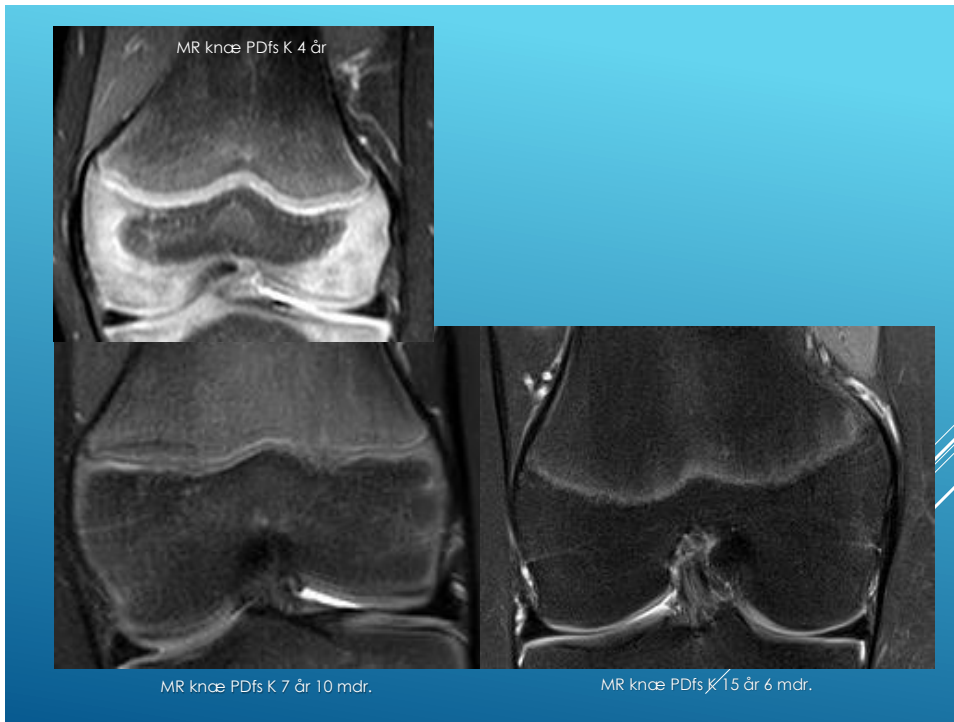
Fig. 2.346 Lues

Fig. 2.347 Lead intoxication

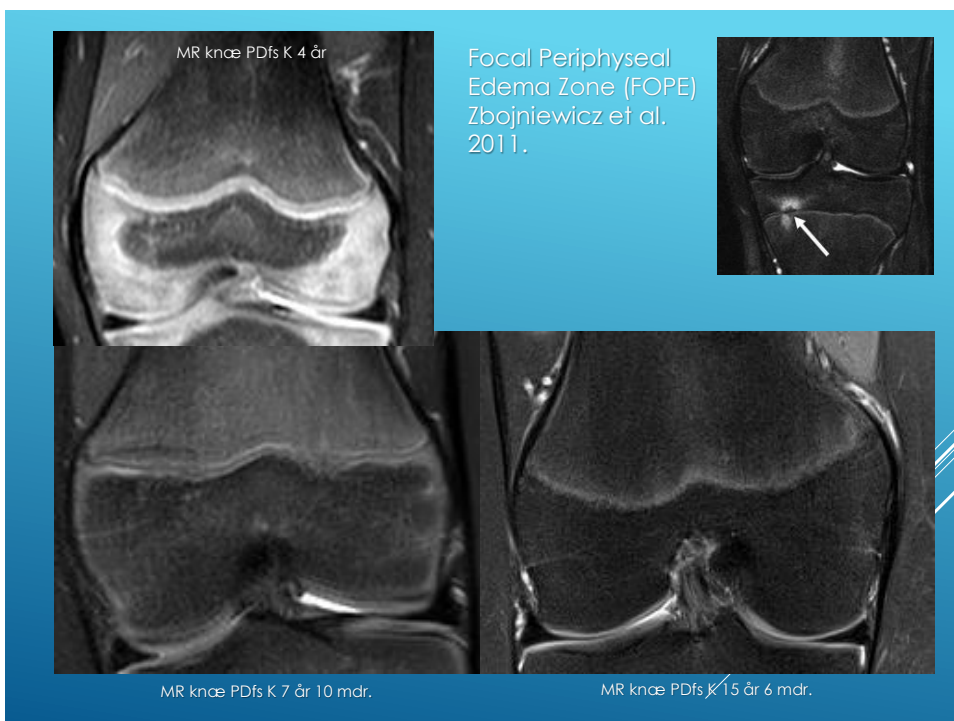
Köhler Zimmer

9-ÅRIG BARN: TECHNETIUM SCINTIGRAFI, NORMAL UNDERSØGELSE

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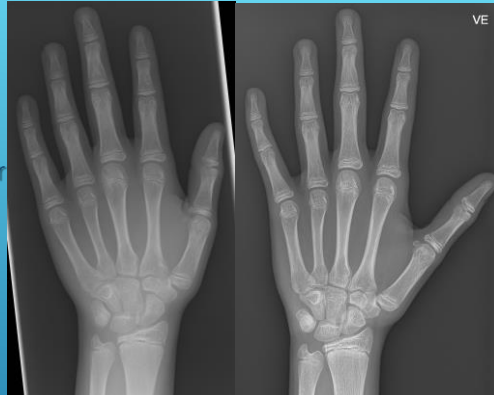
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KNOGLEALDER

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Indikation:

- ▶ Pubertas precox (Endokrin sygdom mistænkt)
- ▶ Forudsige sluthøjde
- ▶ Bestemmelse af tidspunkt for kirurgi:
 - ▶ Skoliosekirurgi
 - ▶ Kirurgi ved anisomeli (LLD)
 - ▶ Valgus/varus korrektion i underekstremiteter
- ▶ M. fl.



Samme barn hhv. 12 år 4 mdr. og 15 år 1 mdr.

KNOGLEALDERBESTEMMELSE

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- ▶ Forskellige metoder
- ▶ Hånden:
 - ▶ Tanner-Whitehouse 3
 - ▶ Greulich-Pyle
 - ▶ BoneXpert (automatisk metode)
- ▶ Risser (Crista apofysen)
- ▶ Sauvegrain (Albuen)
- ▶ M. fl.
- ▶ Udover selve aldersbestemmelsen, bør de enkelte knogler også vurderes

KNOGLEALDERBESTEMMELSE

32



Knoglealderbestemmelse
med software programmet
BoneXpert

33



► Case

4-ÅRIG PIGE, HØJRE HÅND

34




VENSTRE HÅND TIL
SAMMENLIGNING

35



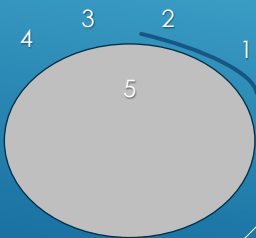
MODER DEBUTERET MED JUVENIL
IDIOPATISK ARTRIT I SAMME ALDER.
PÅ UL SYNOVIT I HØJRE HÅND.

36



- ▶ Ringapofyserne på vertebra lukker på (cirka) samme tid som crista apofysen
- ▶ Stadium 5:
 - ▶ Kvinder 18,1 år
 - ▶ Mænd 18,6 år

RISSER STADIER 0-5



Apofysen ossificerer lateralt fra og fusionerer medialt fra.

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- ▶ Radiographic Atlas of Skeletal Maturation – Kahn et al., Thieme 2012
- ▶ <https://www.orthorad.de/index.php/orthorad/pedbone>
- ▶ App Pedbone (17 kr – november 2021)
- ▶ BoneXpert software

LITTERATUR OG LINKS

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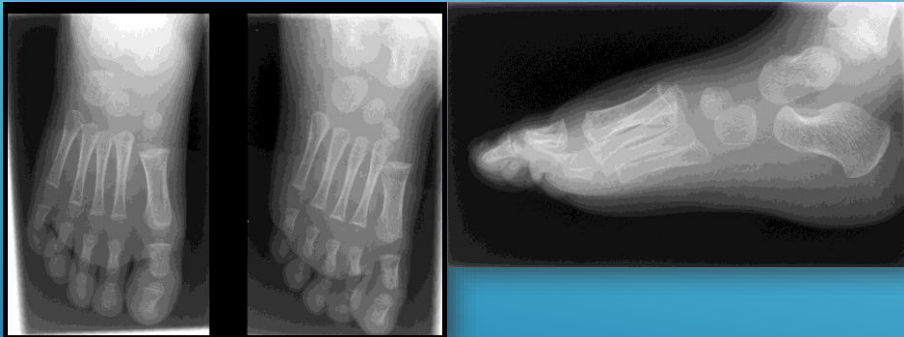
FRAKTURER

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- ▶ Henvisning:
 - ▶ Anamnese
 - ▶ Objektive fund
 - ▶ Klinisk diagnose
- ▶ Beskrivelse:
 - ▶ Er undersøgelse teknisk OK
 - ▶ Selve beskrivelsen
- ▶ Frakturtyper
- ▶ Frakturheling
- ▶ Specifikke pædiatriske frakturer
- ▶ Frakturfølger og komplikationer

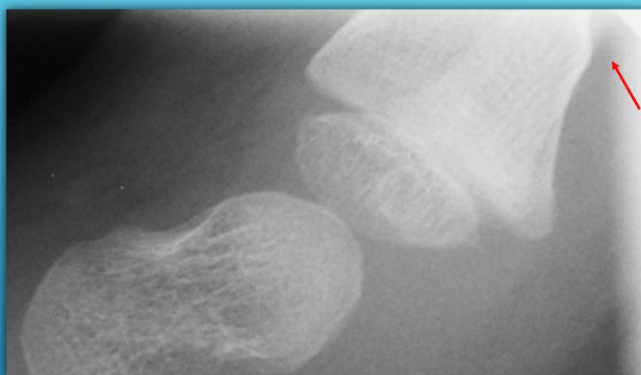
FRAKTURER

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2½-ÅRIG DRENG, VIL IKKE STØTTE PÅ
HØJRE FOD, KLINISK MISTANKE OM
METATARS FRAKTUR

41



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ANAMNESE OG KLINISKE
OPLYSNINGER ER VIGTIGE - MEN
"KLINIK" KAN VÆRE SVÆRT HOS
BØRN

43



PIGE 1 ÅR 11 MDR, OBS.
ANTEBRACHIUM FRAKTUR
KOMMENTARER?

44

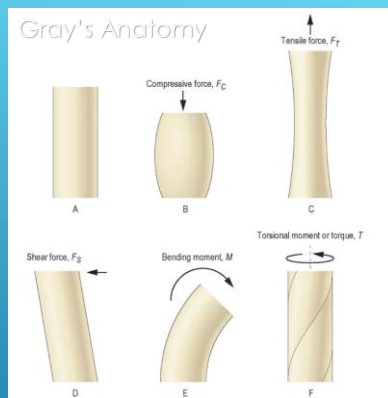


Albuen kun
undersøgt i et
plan:
Insufficient
undersøgelse.



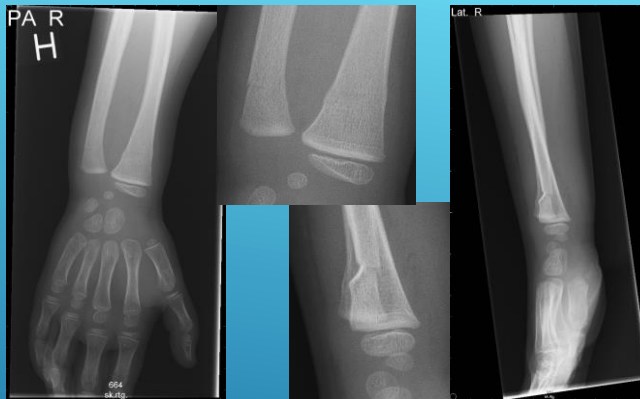
PIGE 1 ÅR 11 MDR, OBS.
ANTEBRACHIUM FRAKTUR

45

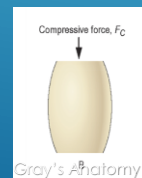


TRAUME MEKANISMER

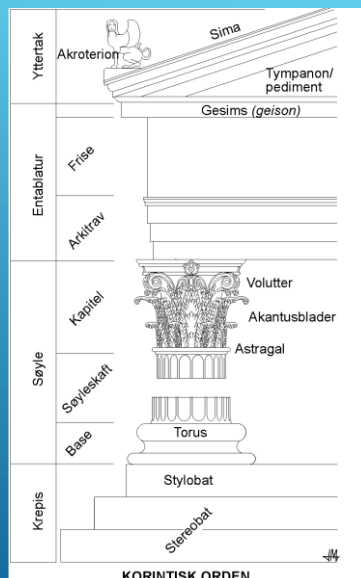
46



4-ÅRIG PIGE: TORUS (BUCKLE) FRAKTUR



47

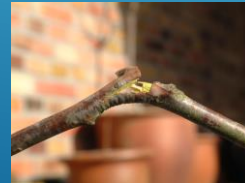


https://upload.wikimedia.org/wikipedia/commons/0/0c/Soylerorden_korintisk.png

48



4-ÅRIG DRENG: GREENSTICK FRAKTUR

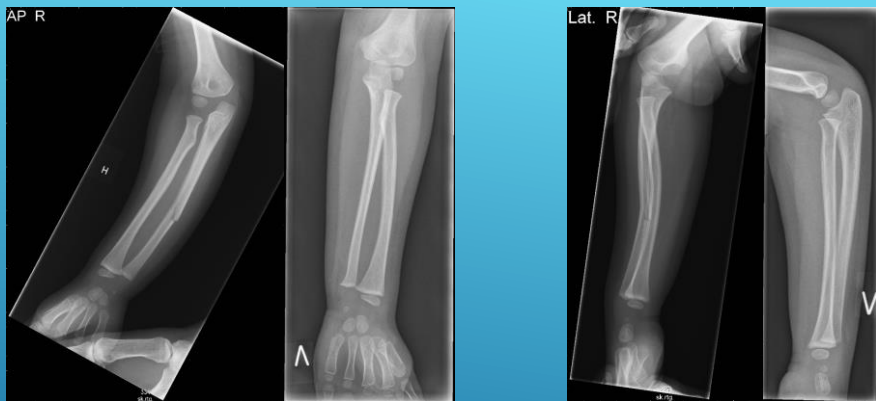


49



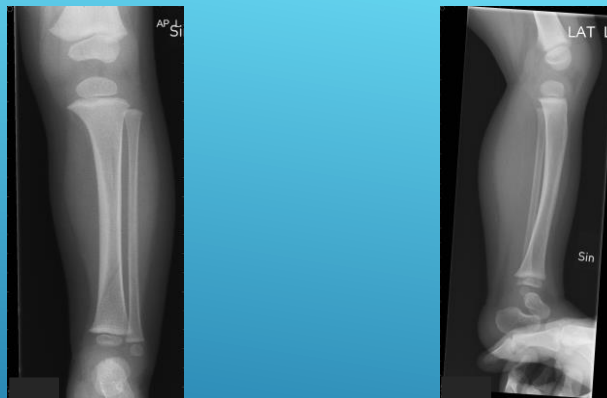
4-ÅRIG PIGE: FRAKTUR TYPE?

50



4-ÅRIG PIGE: RADIUS BØJNING
(BOWING)
RASKE VENSTRE SIDE TIL
SAMMENLIGNING

51



15 MDR GAMMELT BARN:
TODDLERS FRACTURE

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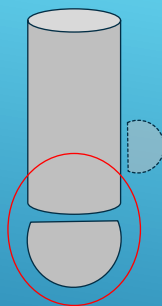


- ▶ 1-3 års alderen
- ▶ Falder på fikseret ben, hvilket giver rotation i tibia, således der kommer en spiral fraktur
- ▶ Kan hvis udisloceret være vanskelig at se på primære undersøgelse
- ▶ Ved vedvarende symptomer nyt røntgen efter 10-14 dage.

15 MDR GAMMELT BARN: TODDLERS FRACTURE

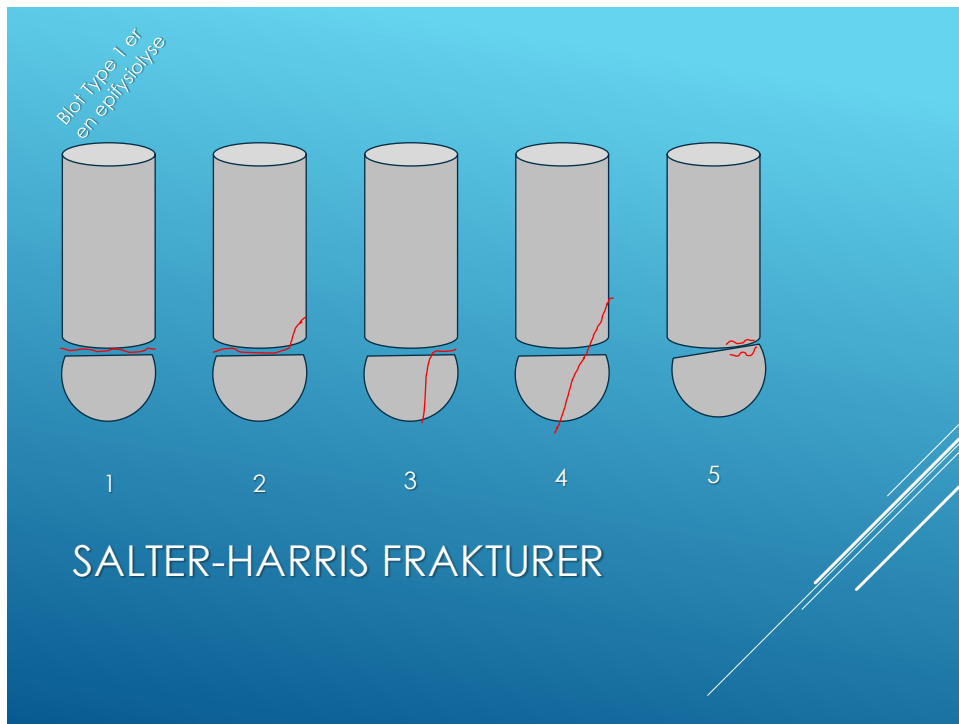
53

- ▶ Diafyse
- ▶ Metafyse
- ▶ Fyse (Vækstskive)
- ▶ Epifyse
- ▶ (Apofyser)

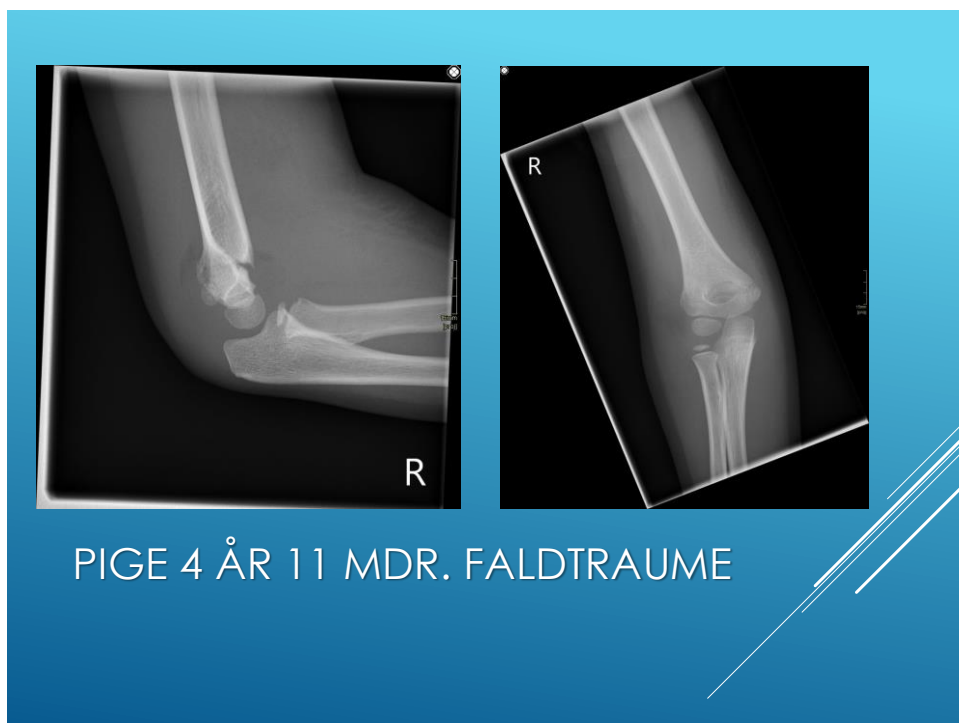


EPIFYSENÆRE FRAKTURER (VÆKSTPLADELÆSIONER)

54



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56



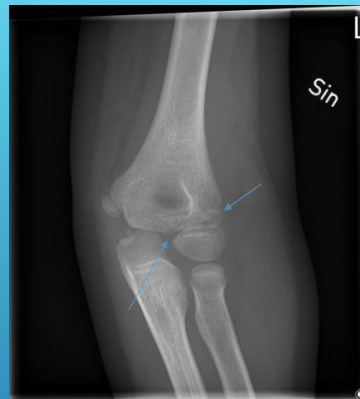
PIGE 4 ÅR 11 MDR. FALDTRAUME
SUPRACONDYLÆR HUMERUS
FRAKTUR

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PIGE 5 ÅR 8 MDR. FALDTRAUME

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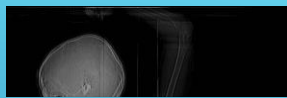
PIGE 5 ÅR 8 MDR. FALDTAUME
LATERAL HUMERUS CONDYL
FRAKTUR

59

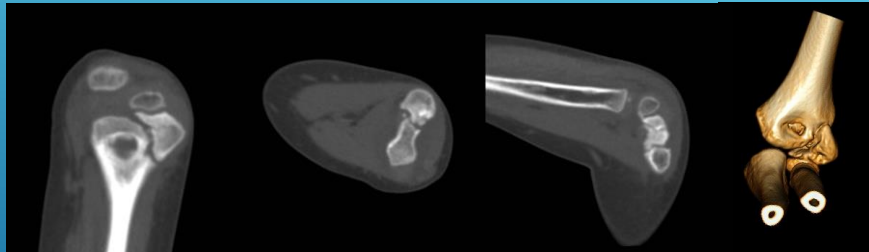


FIRE PROJEKTIONER: LATETAL, AP
OG TO SKRÅ
LATERAL CONDYL FRAKTUR

60



Armen over hovedet reducerer stråledosis til barnet



CT SKANNING (2½ UGE SENERE)

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KONTROL 4 MDR EFTER TRAUMET

62



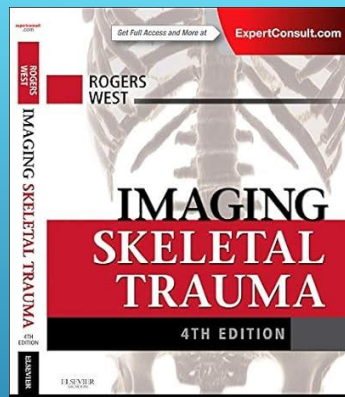
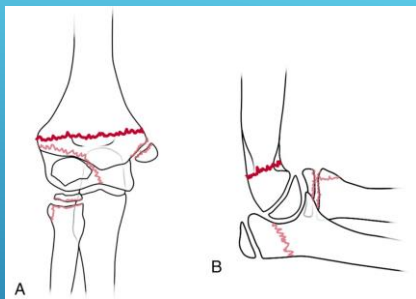
KONTROL ET ÅR EFTER TRAUMET:
TRAUMEFØLGER?

63



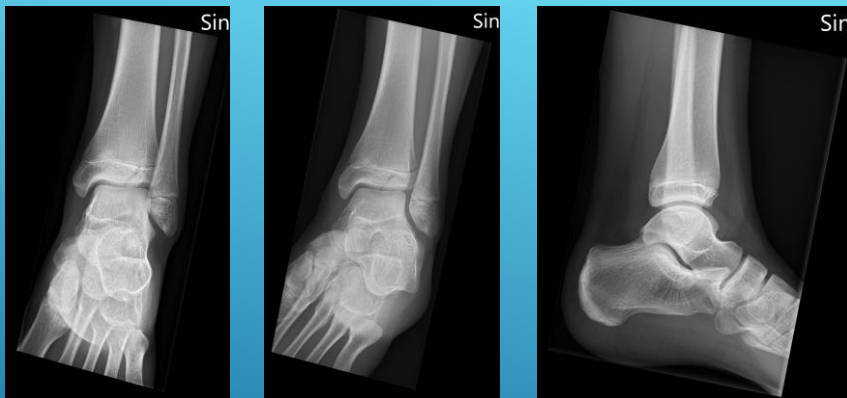
KONTROL ET ÅR EFTER TRAUMET:
VARUS VINKLING PGA.
VÆKSTFORSTYRRLSE

64



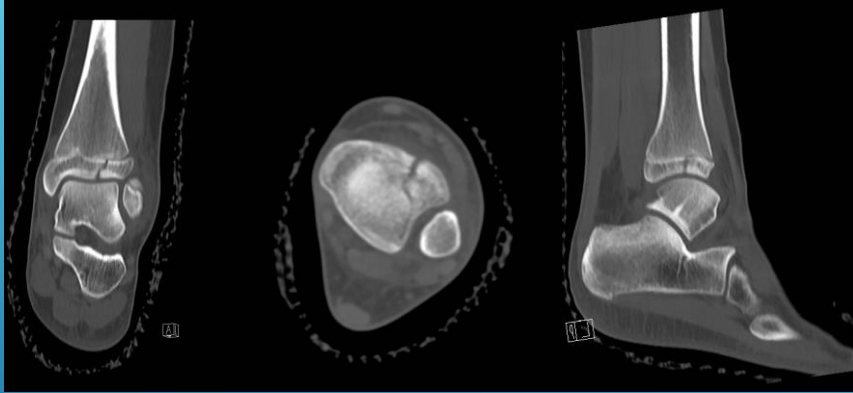
KENDSKAB TIL DE ALMINDELIGSTE FRAKTURSTEDER

65



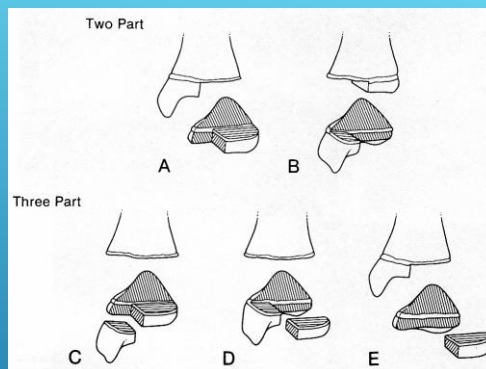
JUVENIL TILLAUX FRAKTUR (S-H TYPE 3) (13-ÅRIG PIGE)

66



JUVENIL TILLAUX FRAKTUR (S-H TYPE 3) (13-ÅRIG PIGE)

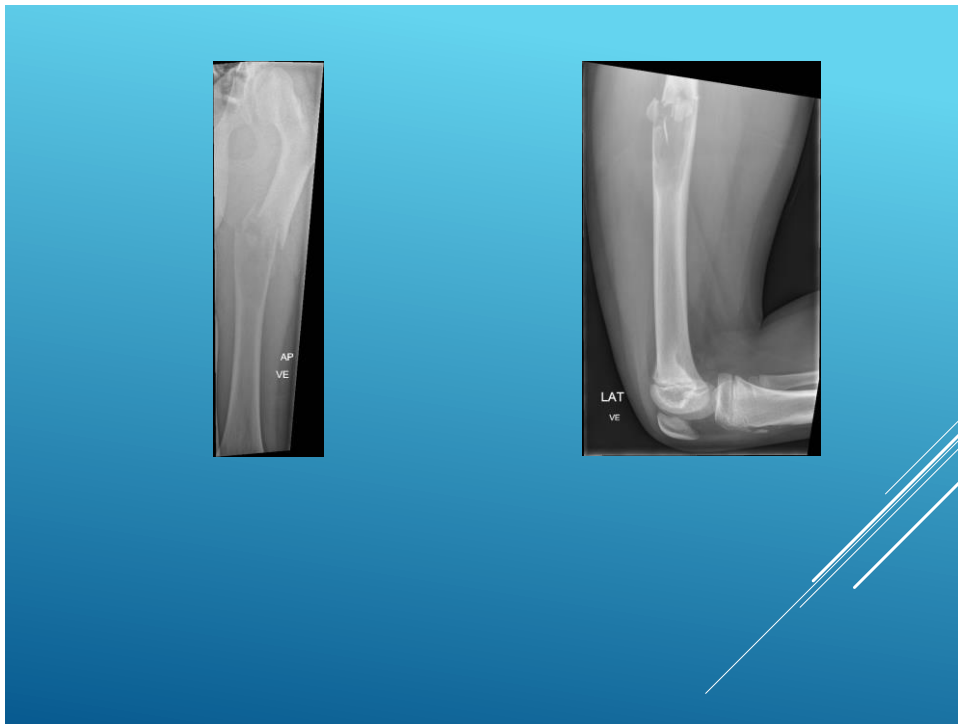
67



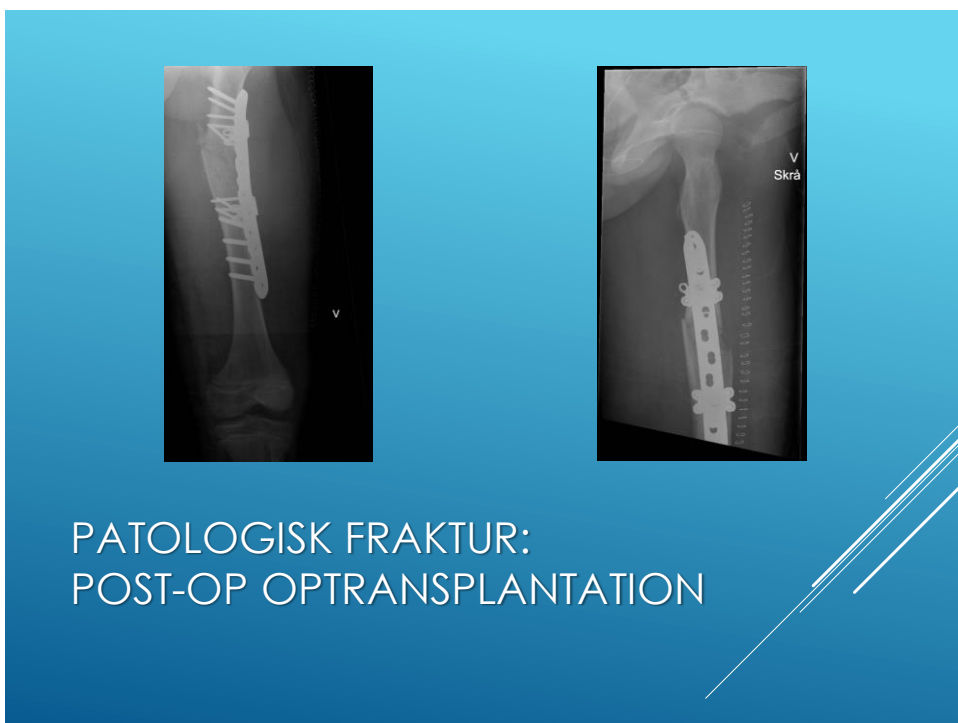
Lee F. Roger

TRIPLANE FRACTURES (KOMPLEKS SKADE)

68



69



70



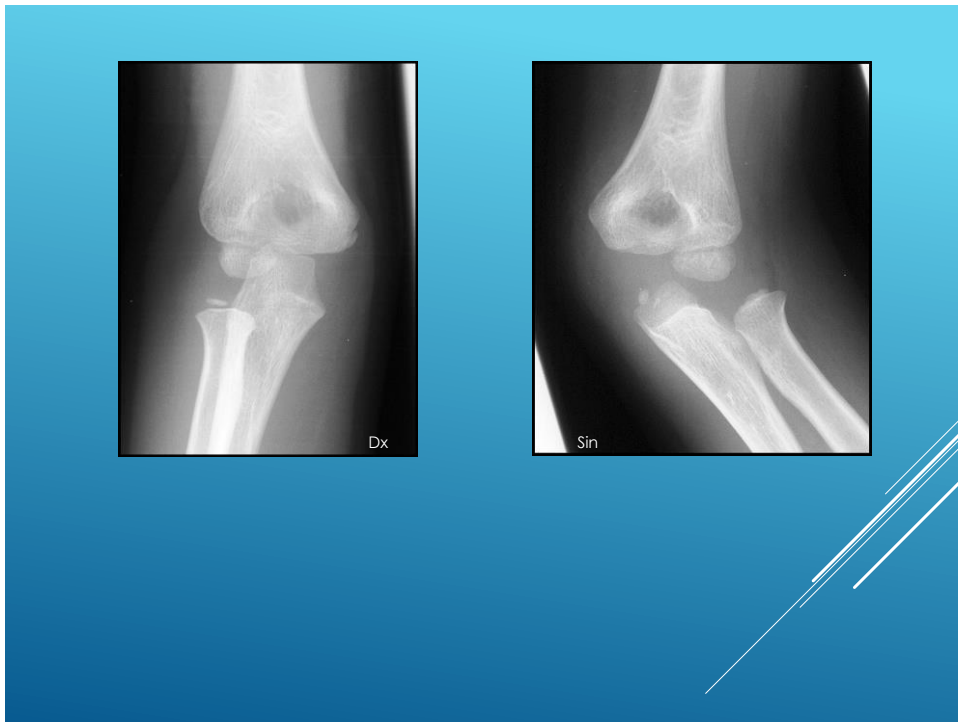
RTG. VE ALBUE EFTER TRAUME

71

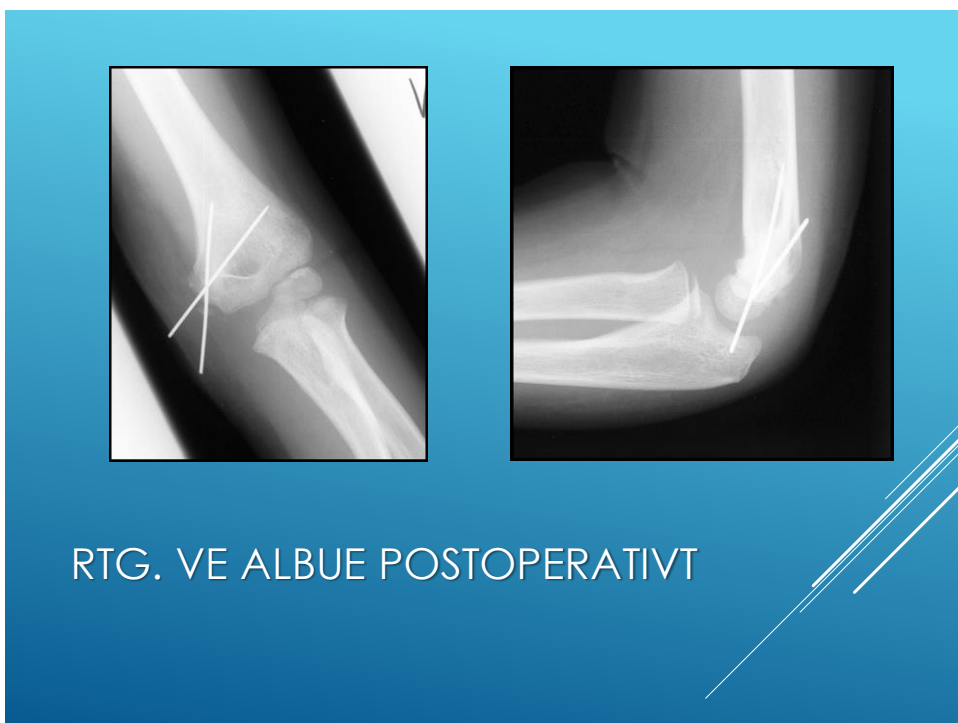


RTG. RASKE HØJRE ALBUE TIL SAMMENLIGNING

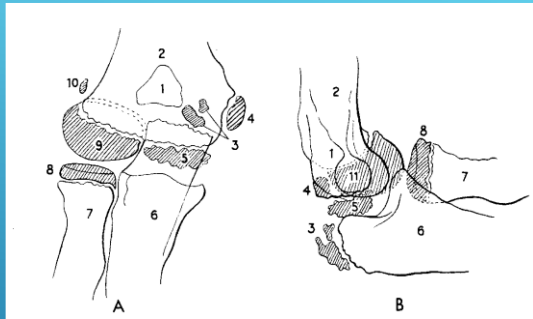
72



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CRITOL

C: Capitulum humeri
 R: Radial head
 I: Internal epicondyle
 T: Trochlea humeri
 O: Olecranon
 L: Lateral epicondyle

ANLÆGGELSE AF EPI- OG
 APOFYSER I ALBUEN HOS BØRN.

75



13-ÅRIG DRENG – SYMPTOMER FRA
 VENSTRE HOFTE GENNEM LÆNGERE
 TID

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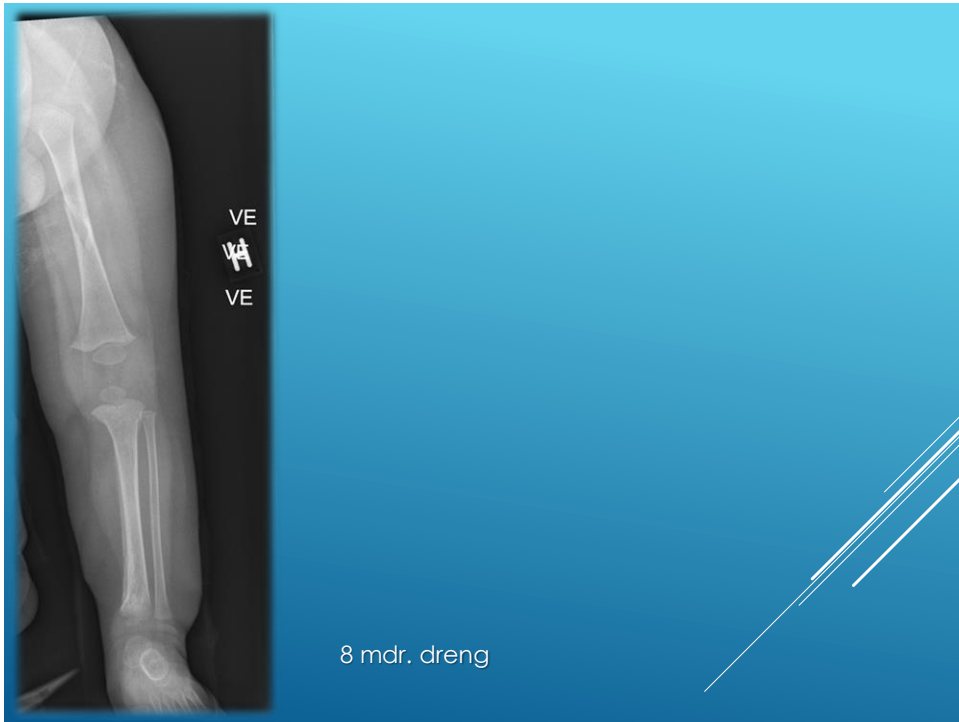
SPINA ILIACA ANTERIOR INFERIOR (SIAI) AVULSION UNDER OPHELING

77

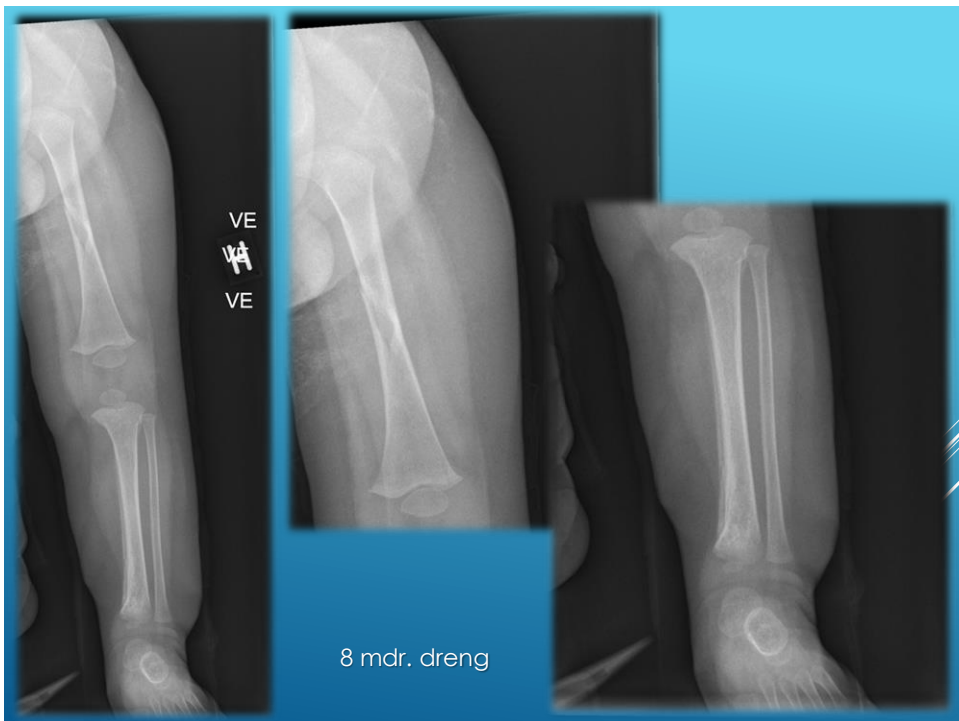
- ▶ Mediale humerus epicondyl
- ▶ Spina iliaca anterior superior
- ▶ Spina iliaca anterior inferior
- ▶ Tuber ischiadicum
- ▶ Sportsaktive (sprint, fodbold, tennis..)
- ▶ Unge

HYPPIGE STEDER MED APOFYSIOLYSE

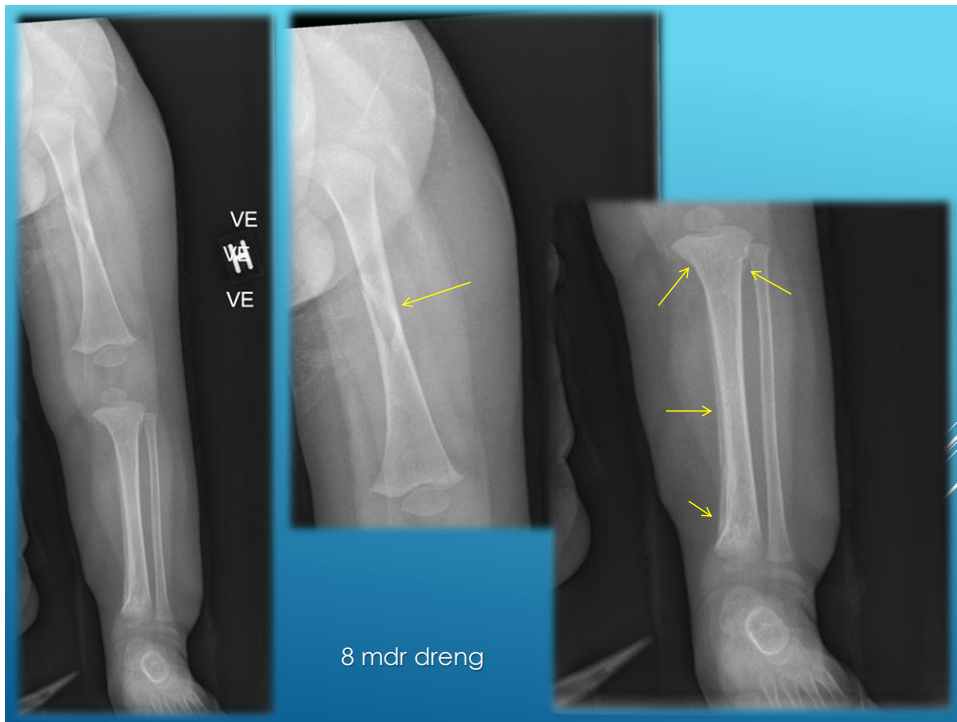
78



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81

- ▶ Torus fraktur
- ▶ Greenstick fraktur
- ▶ Bowing fracture
- ▶ Salter-Harris fraktur type 1-5
- ▶ Patologisk fraktur
- ▶ Apofyse avulsioner
- ▶ Toddler's fracture
- ▶ Juvenil Tillaux fraktur
- ▶
- ▶ "Battered child"

FRAKTURER: OVERSIGT

82



- ▶ Beskrivelse af fraktur

FEMURFRAKTUR 2-ÅRIG: +0 DAGE

83



- ▶ Lukket/åben
- ▶ Beliggenhed (herunder led involvering / fyse involvering)
- ▶ Komplet, fissure, infraktion
- ▶ Type: Tvær/skrå/indkilet/komminut/kompression/avulsion
- ▶ Forskydning/dislokation (knoglebredde/cm, retning)
- ▶ Vinkling (grader, retning)
- ▶ Rotation (svært/umuligt!)

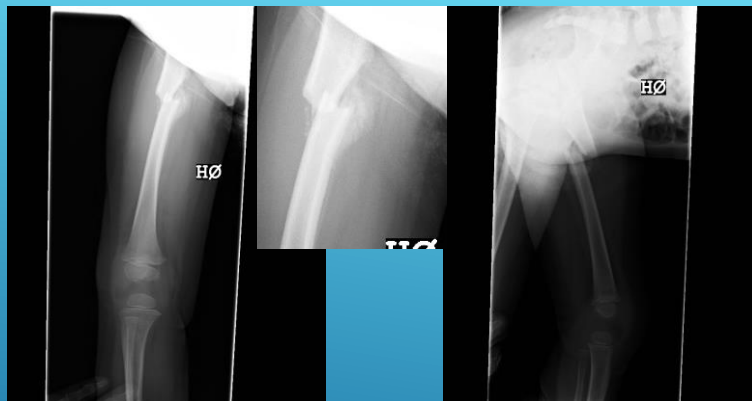
TERMER

84



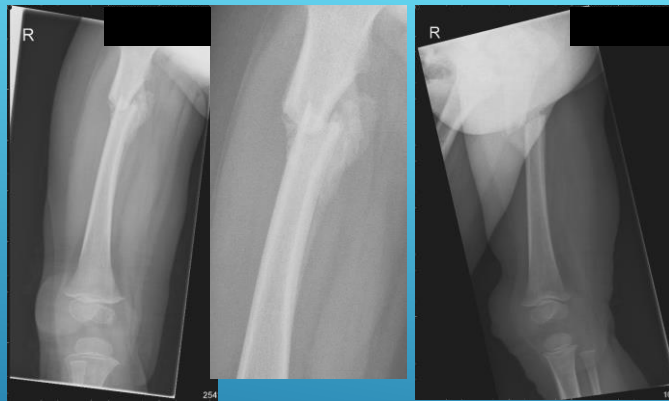
FRAKTURHELING
FEMURFRAKTUR 2-ÅRIG: +0 DAGE

85



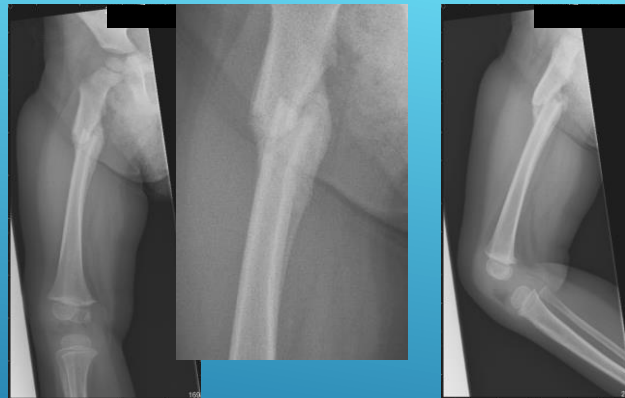
FEMURFRAKTUR: +14 DAGE

86



FEMURFRAKTUR: +18 DAGE

87



FEMURFRAKTUR: +29 DAGE

88



FEMURFRAKTUR: + 2 ÅR

89



FRAKTURLUXATION:
8½ ÅR GAMMEL

90



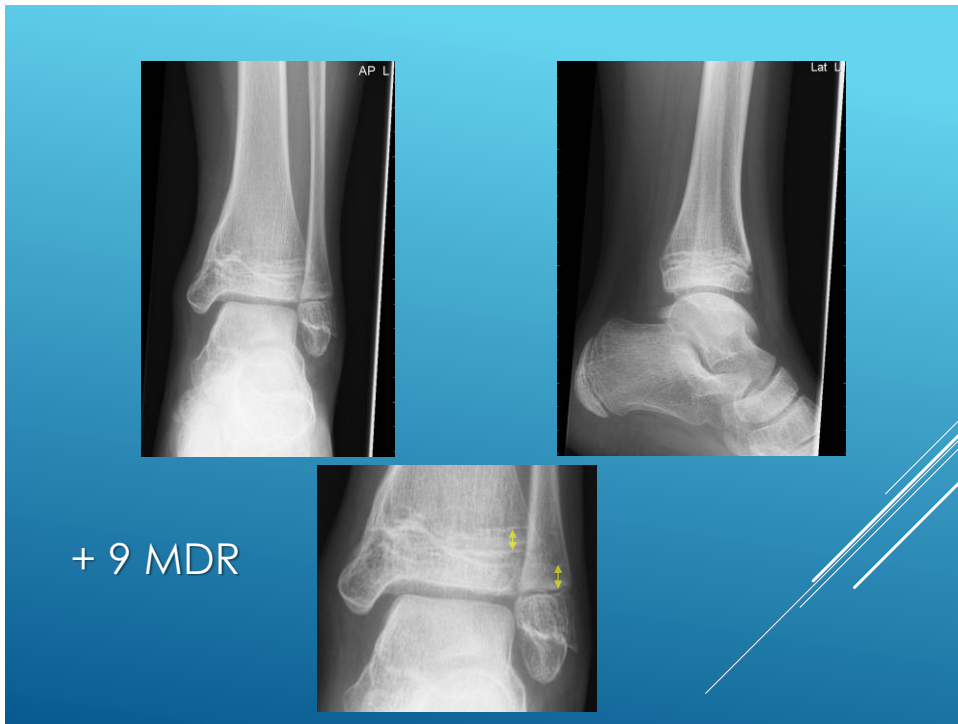
+ 4 MDR

91

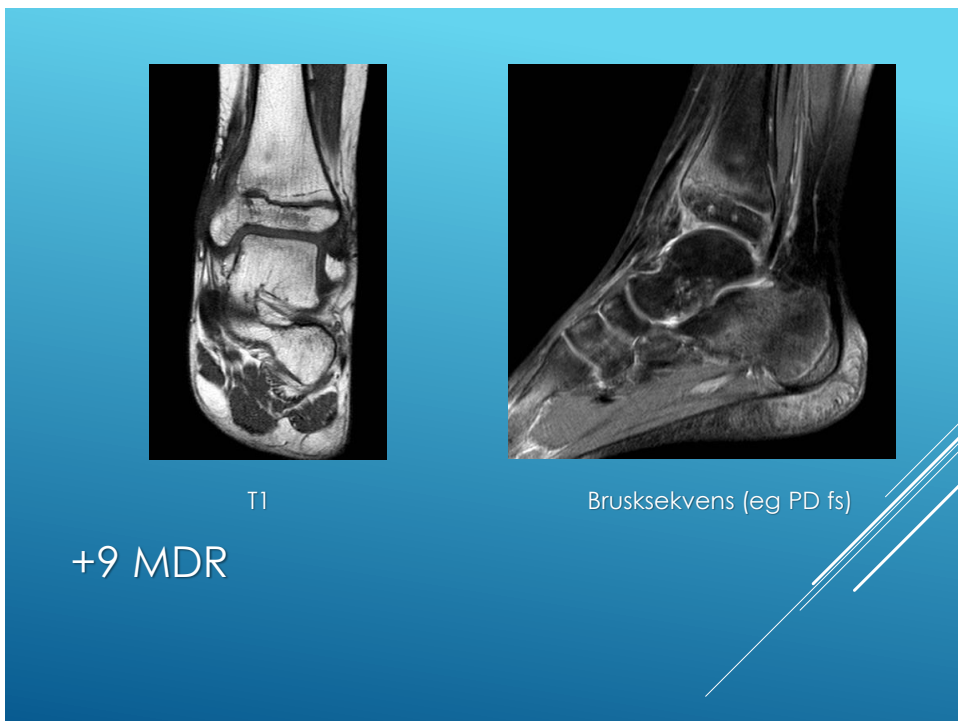


+ 9 MDR

92



93



94

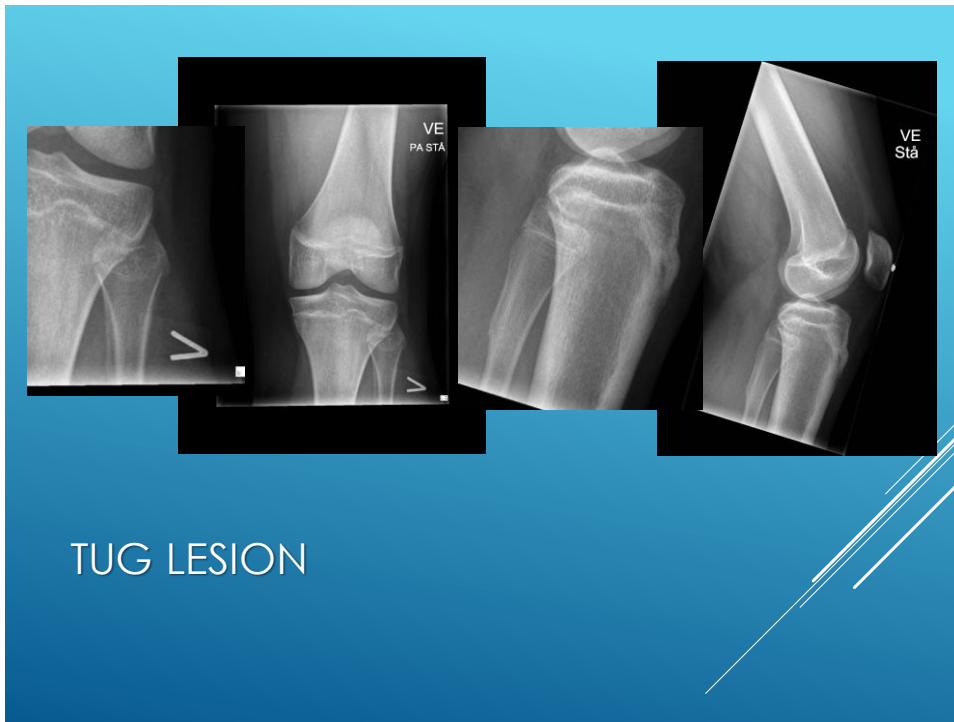
KNOGLETUMORER

95

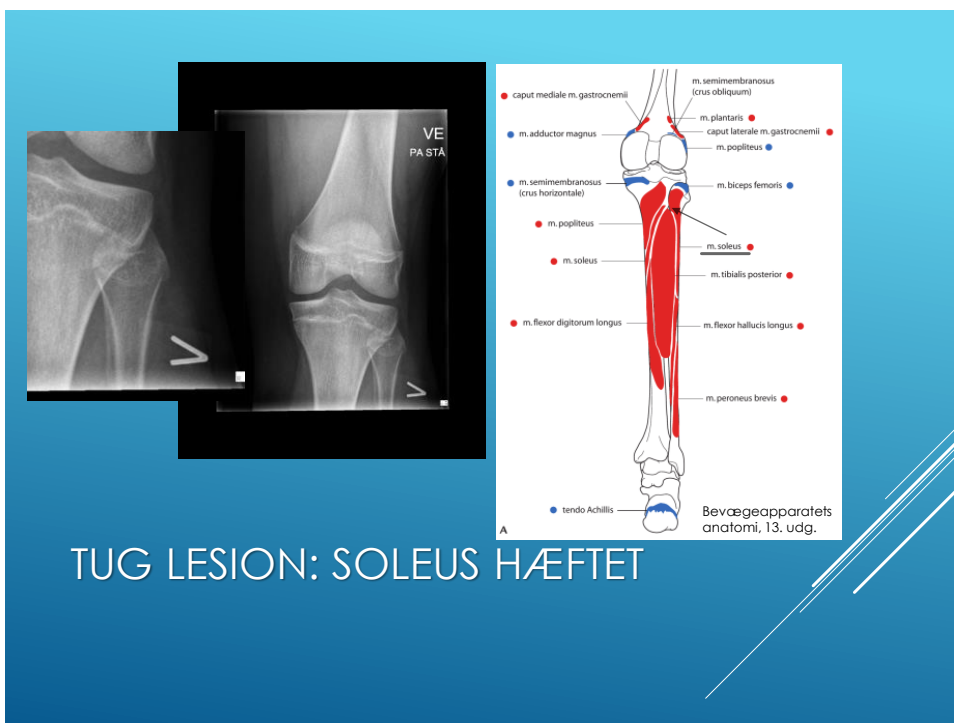
KNOGLE OG BLØDDELSTUMORER: OVERORDNEDE BETRAGTNINGER

Der henvises i øvrigt til A-kursus i Muskuloskeletal radiologi

96



97



98



FORANDRINGER?

99



NON-OSSIFICERENDE FIBROM

100

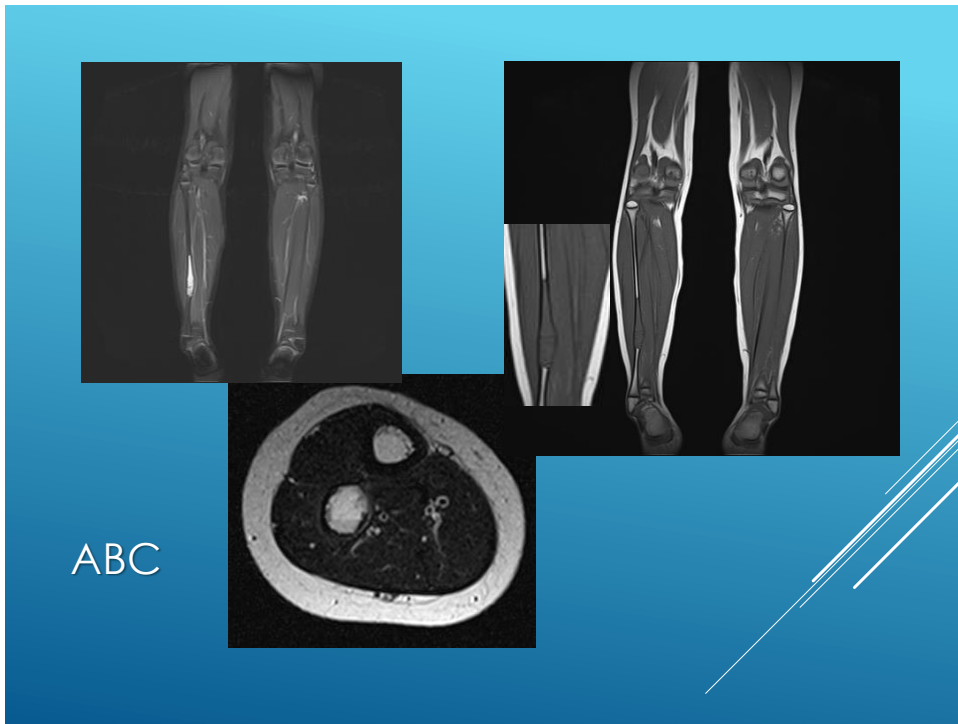


NON-OSSIFICERENDE FIBROM – KONTROL TO ÅR SENERE

101



102



103



104



7-ÅRIG PIGE

105



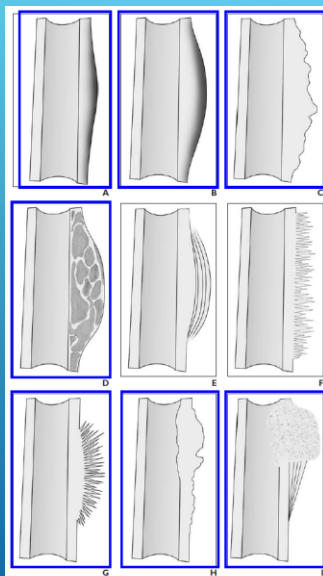
VEDVARENDE SYMPTOMER. NY
RTG. EFTER 4 MDR.

106

- ▶ Onion skin (O)
- ▶ Hair on end periosteal reaction (H)
- ▶ Codmans triangle (C)



107

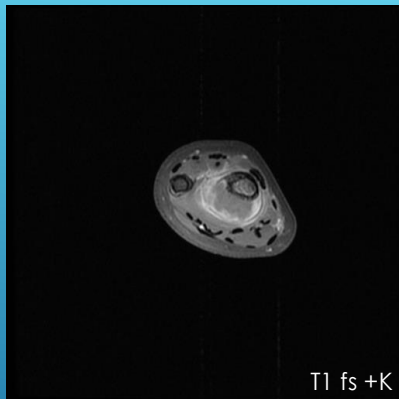


PERIOSTEAL REAKTION

Fig. 1—Various subtypes of nonaggressive and aggressive periosteal reaction. A–I, Diagrams show thin (A), solid (B), thick irregular (C), septated (D), laminated (onionskin) (E) perpendicular/hair-on-end (F) sunburst (G) disorganized (H) Codman triangle (I) periosteal reactions (Courtesy of Larson ME, Boston, MA)

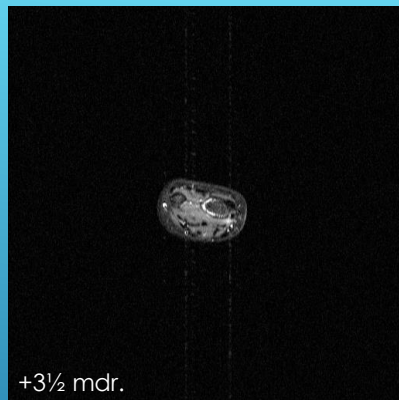
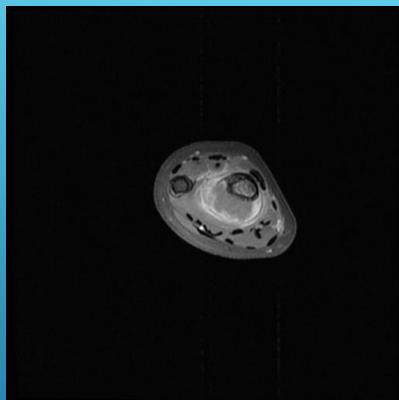
Rana et al. 2009

108



EWINGS SARKOM

109



KONTROL 3½ MÅNED SENERE EFTER KEMOTERAPI

110

- ▶ Primær undersøgelse: Rtg (bidrager til differentialdiagnoser mv.)
- ▶ MR af tumor og hele knoglen mhp. skip lesions ved malign tumor og +K
- ▶ PET-CT afhængig af tumor

KNOGLETUMORER

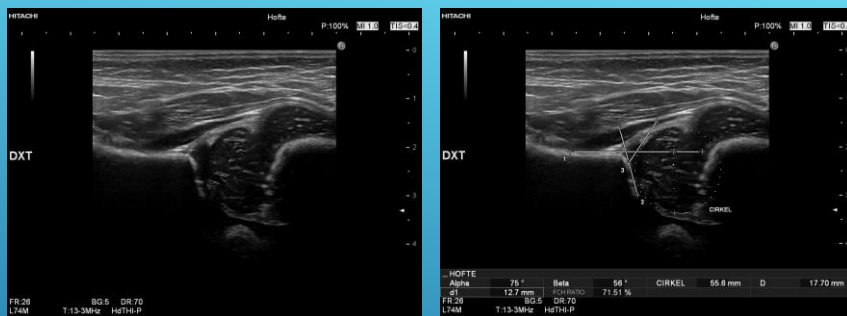
111

KONGENITTE OG ERHVERVEDE FORANDRINGER

112

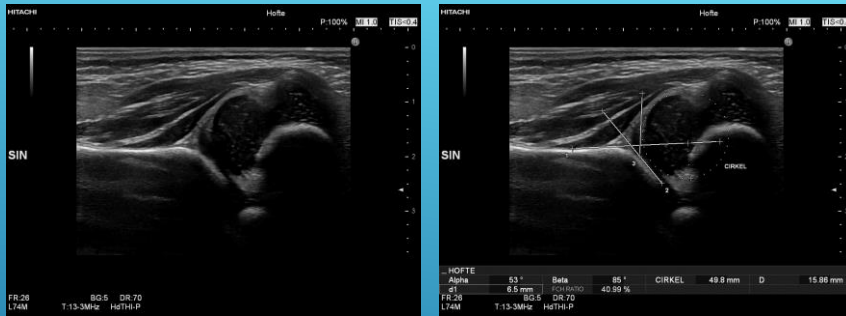
HOFTELESDYSPLASI

113



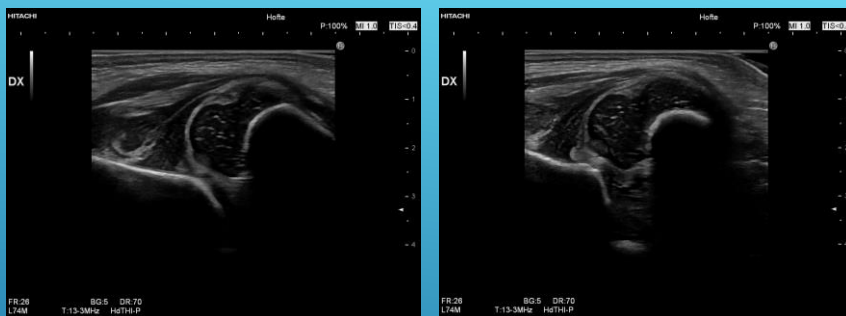
DDH: ULTRALYDSKANNING

114



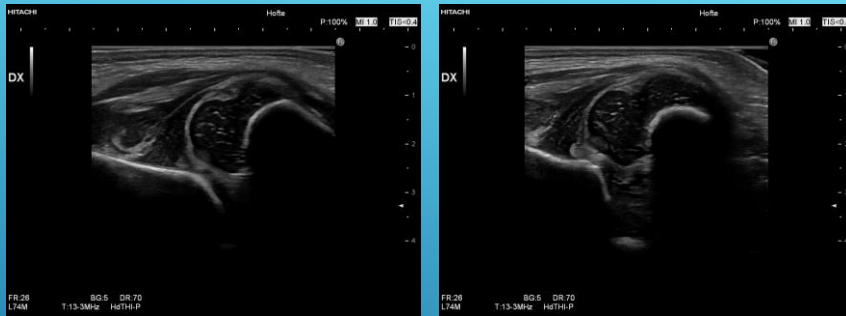
DDH: DYSPLASI OG LATERALISERING, PIGE 9 DAGE

115



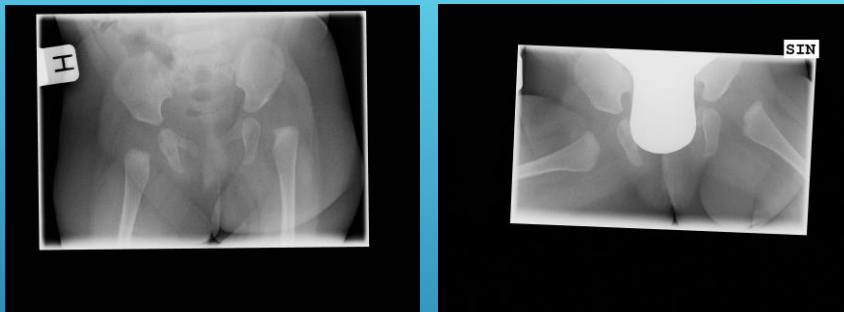
DDH: LUKSATION, DRENG 1 UGE

116



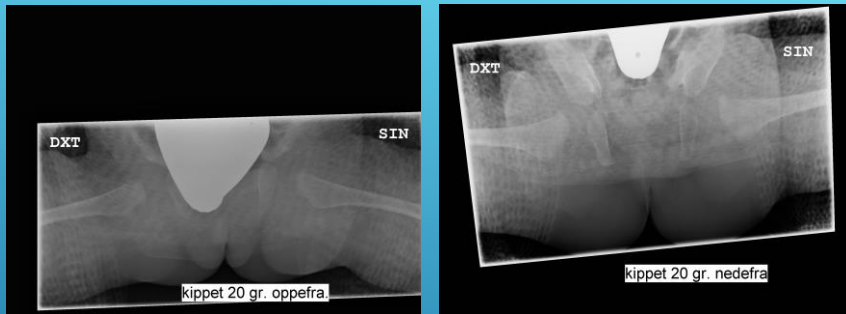
DDH: LUKSATION, DRENG 1 UGE
 BEHANDLING: TIDL. DB-SKINNE I 6
 UGER, SÅ UL KONTROL, NU PAVLIK
 SELE I 4 UGER SÅ KONTROL

117



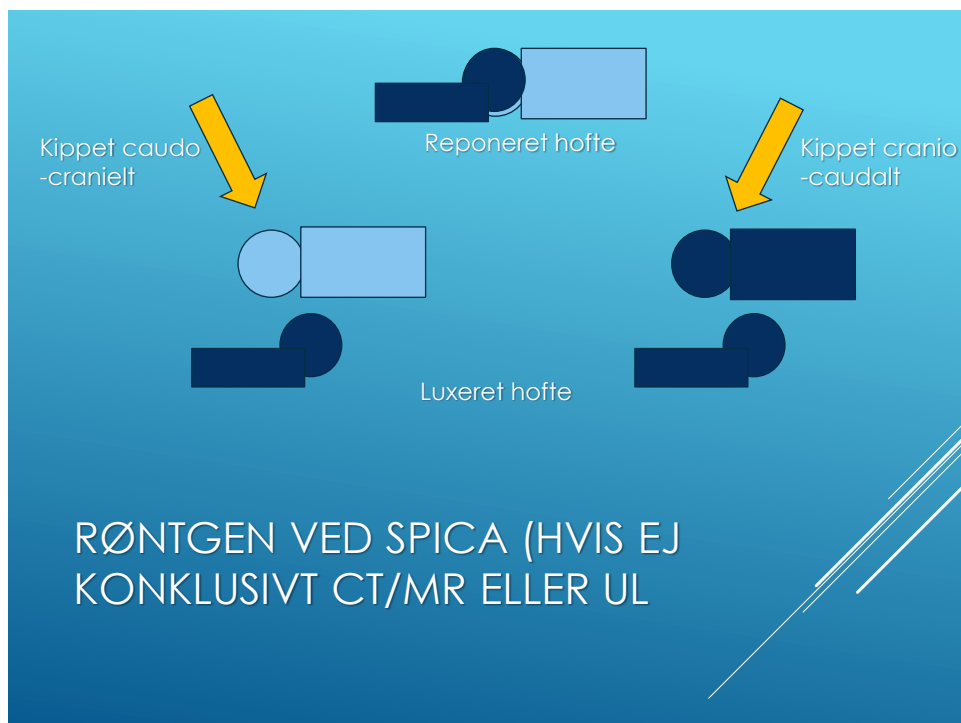
4 MÅNEDER GAMMEL BARN

118



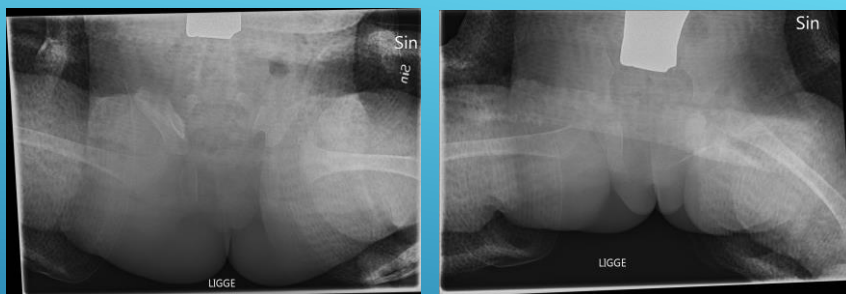
4 MÅNEDER GAMMEL BARN SPICA BEHANDLING, VELREPONERET

119



RØNTGEN VED SPICA (HVIS EJ KONKLUSIVT CT/MR ELLER UL

120

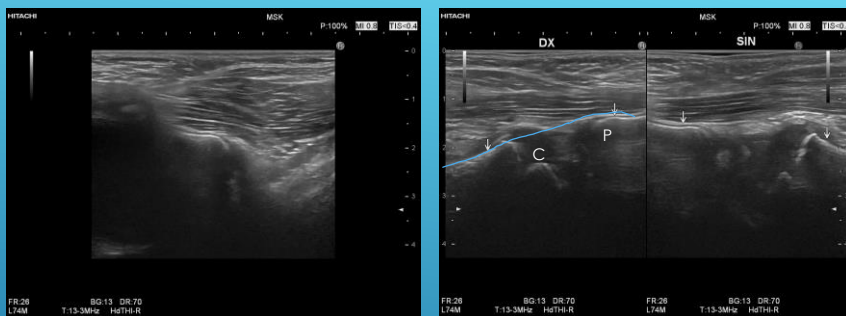


8 MÅNEDER GAMMEL PIGE: SPICA BEHANDLING, IKKE REPONERET

121

5½ måned gammel barn.

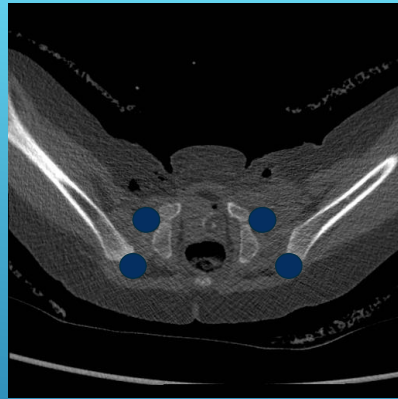
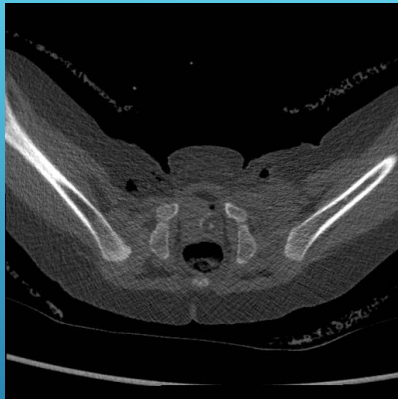
Forkanten af os pubis og femur meta-diafysen ligger på linje



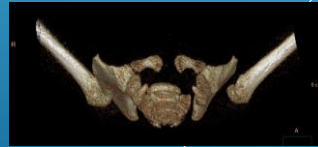
C: Caput femoris. P: Corpus ossis pubis

PER-OP REPONERING AF VENSTRE HOFTE, DYNAMISK UL

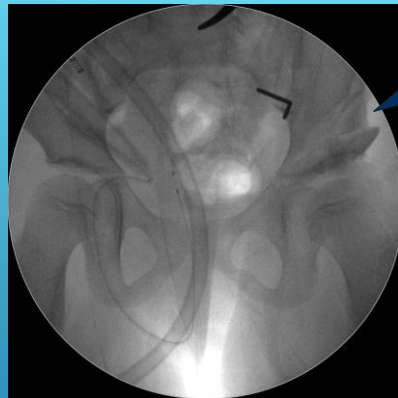
122



CT I UDVALGTE TILFÆLDE



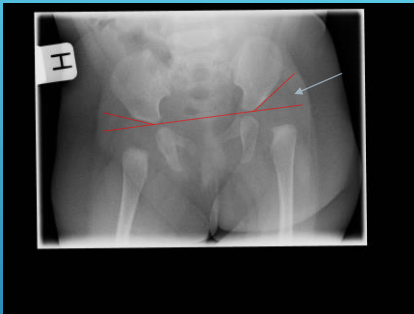
123



6-ÅRIG PIGE BEHANDLET MED
PERIACETABULAR PEMBERTON
OSTEOTOMI

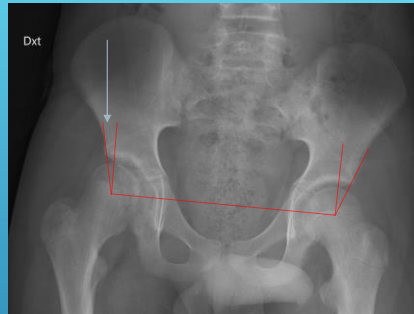
124

Acetabular vinkel



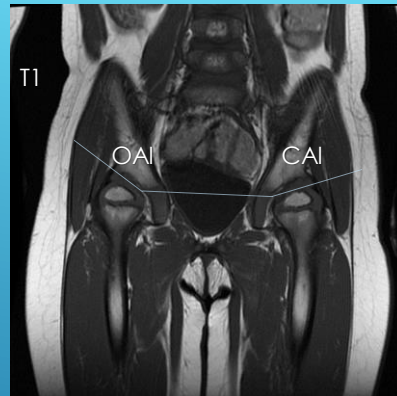
Kaldes ind imellem acetabular indeks: AI

CE vinkel

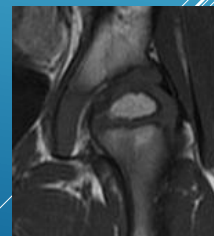


UDMÅLING: INDIMELLEM KAN DET
VÆRE SVÆRT – SKRIV DET SÅ I
BESKRIVELSEN

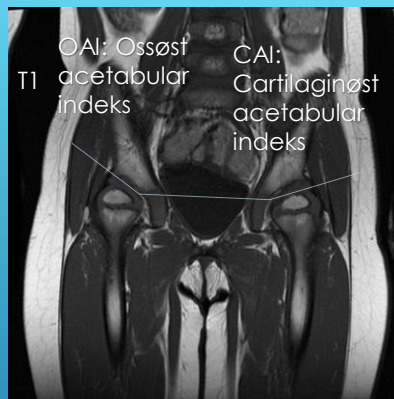
125



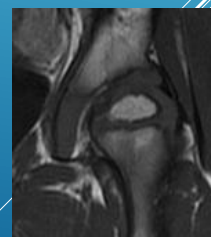
DYSPLASI VURDERING VED MR
SKANNING AD MODUM LI: OAI OG
CAI BESTEMMELSE



126



DYSPLASI VURDERING VED MR SKANNING AD MODUM LI: OAI OG CAI BESTEMMELSE



127

- ▶ CPOP: Cerebral parese (og lignende tilstande) opfølgingsprogram, med kontrol af bl.a. (bevægeapparatet):

- ▶ Høfter (Rtg)
- ▶ Columna (Rtg hvis tegn til skoliose)

- ▶ Reimars index:

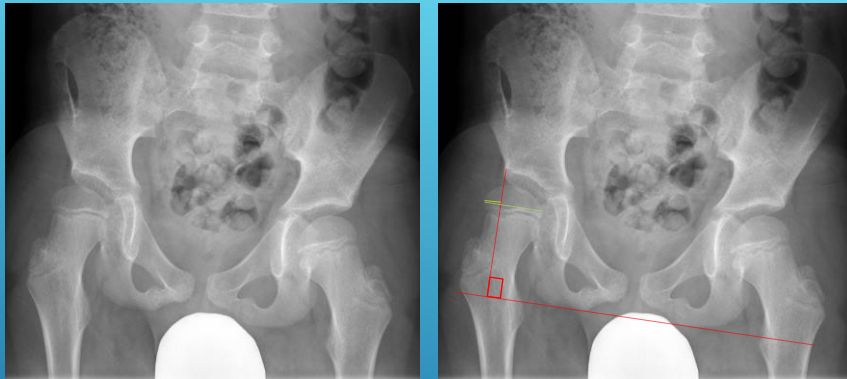
- ▶ <33%: Kontrol
- ▶ 33%-40%: Klinisk afgørelse
- ▶ >40%: Normalt operation



www.cpop.dk

CEREBRAL PARESE

128



LATERALISERING, DYSPLASI OG COXA VALGA

129

SYSTEMISKE SYGDOMME

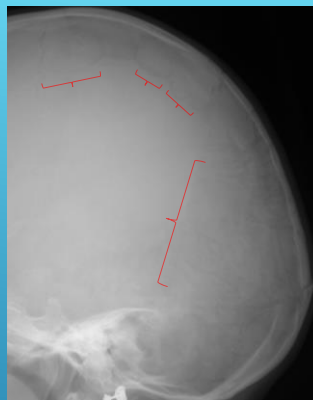
Enkelte eksempler

130

- ▶ 90% pga. mutation i et af de to gener der koder for alfa-kæder i collagen type 1 (COL1A1 og COL1A2)
- ▶ Knogleskørhed med nedsat knoglemasse og abnormt bindevæv
- ▶ Ekstraskeletalt: blå sclerae, dentinogenesis imperfecta, løshed i ligamenter og hud, nedsat hørelse
- ▶ Type 1-5: Stigende sværhedsgrad: 1,4,5, 3 og 2 (perinatal letal)
- ▶ Bemærk: Stor variation i præsentation fra in utero frakturer til milde former med få (eller ingen) frakturer i voksenalder

OSTEOGENESIS IMPERFECTA

131



MULTIPLE OSSA WORMIANA (SES OGSÅ VED EKSEMPELVIS CLEIDOCRANIEL DYSOSTOSE)

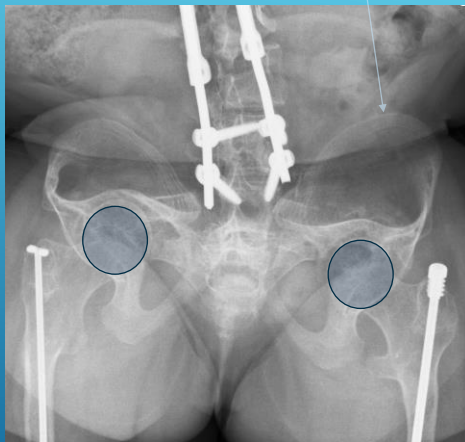
132



OSTEOGENESIS
IMPERFECTA:
CENTRAL MIGRATION AF
CAPUT FEMORIS BILATERALT

16-årig kvinde

133

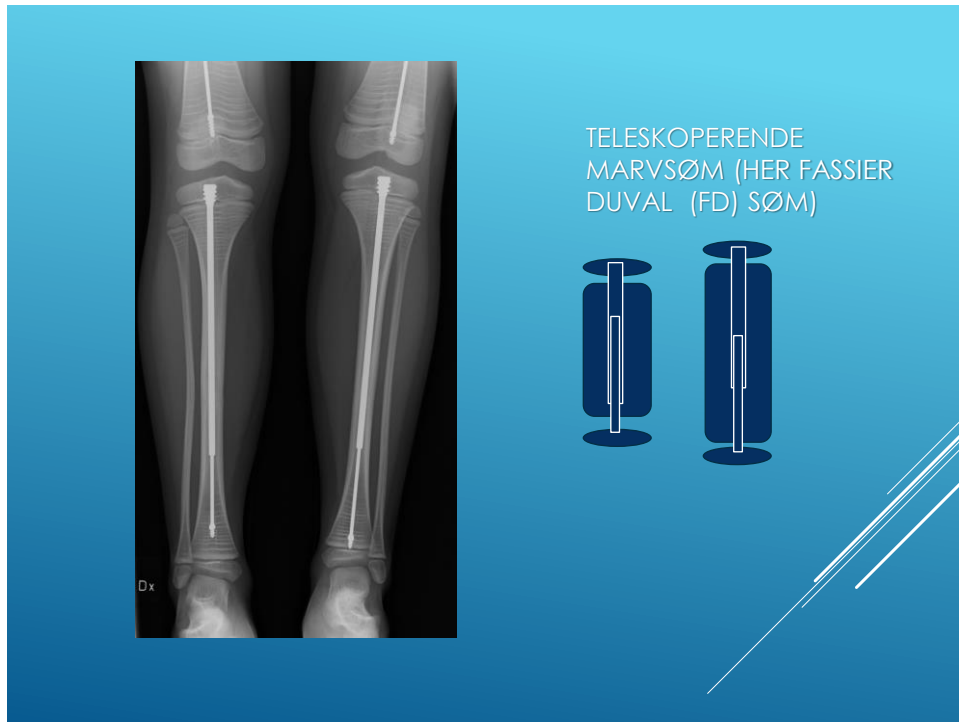


Multiple growth
arrest/recovery lines

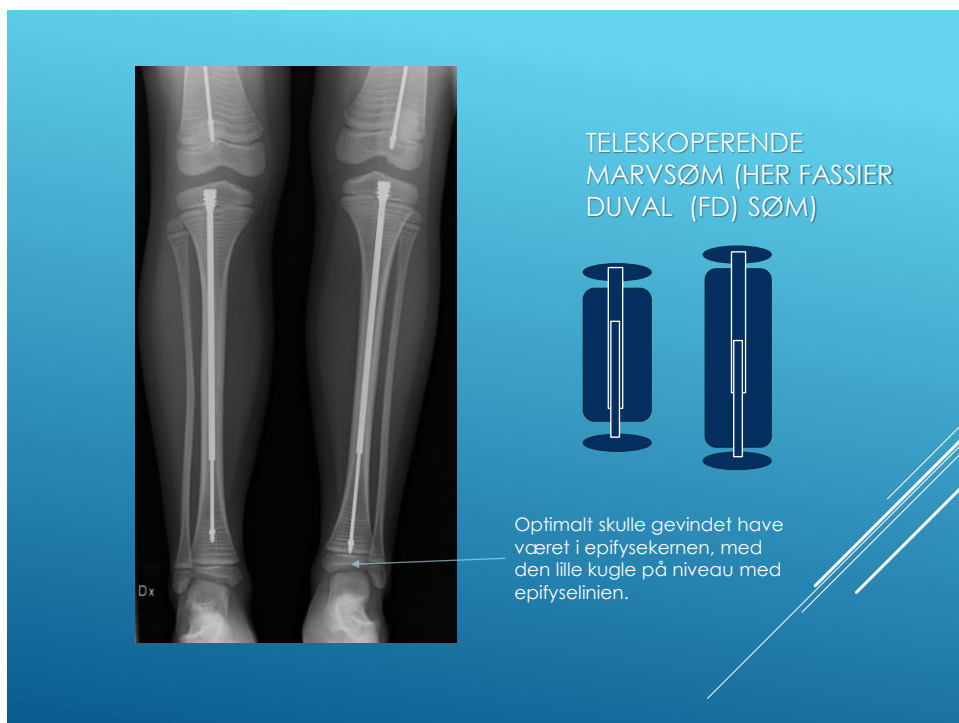
OSTEOGENESIS
IMPERFECTA:
CENTRAL MIGRATION AF
CAPUT FEMORIS BILATERALT

16-årig kvinde

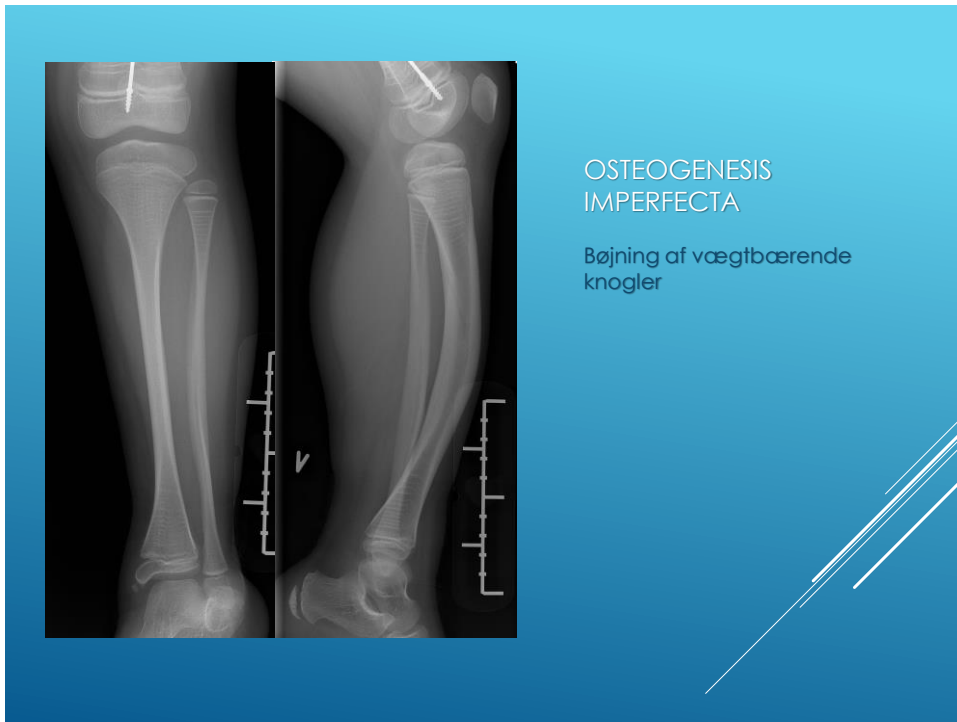
134



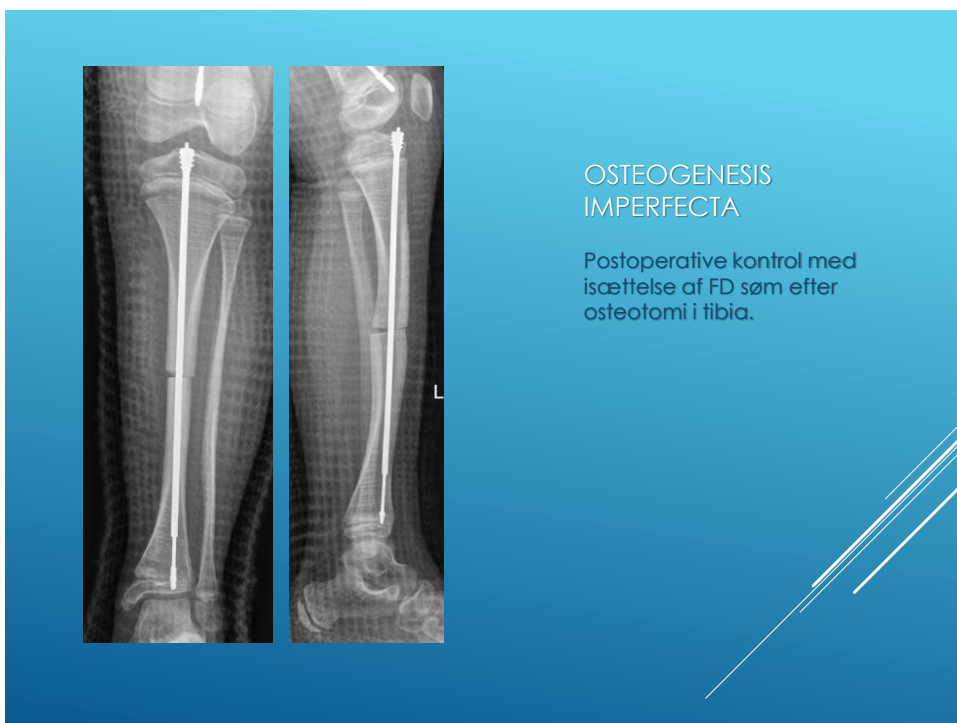
135



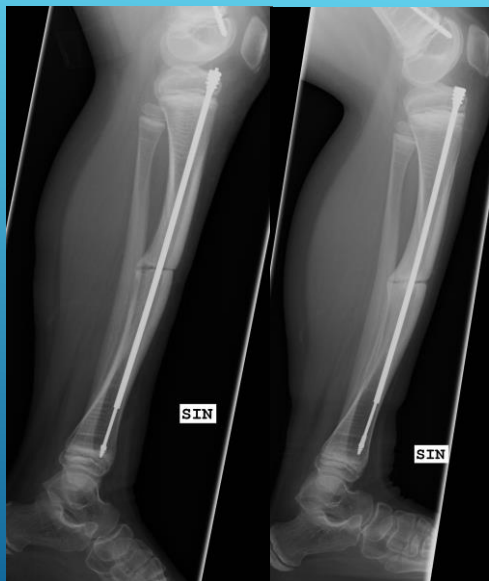
136



137



138



OSTEOGENESIS IMPERFECTA

Kontrol efter hhv. 3 og 9 måneder med forsinket heling.

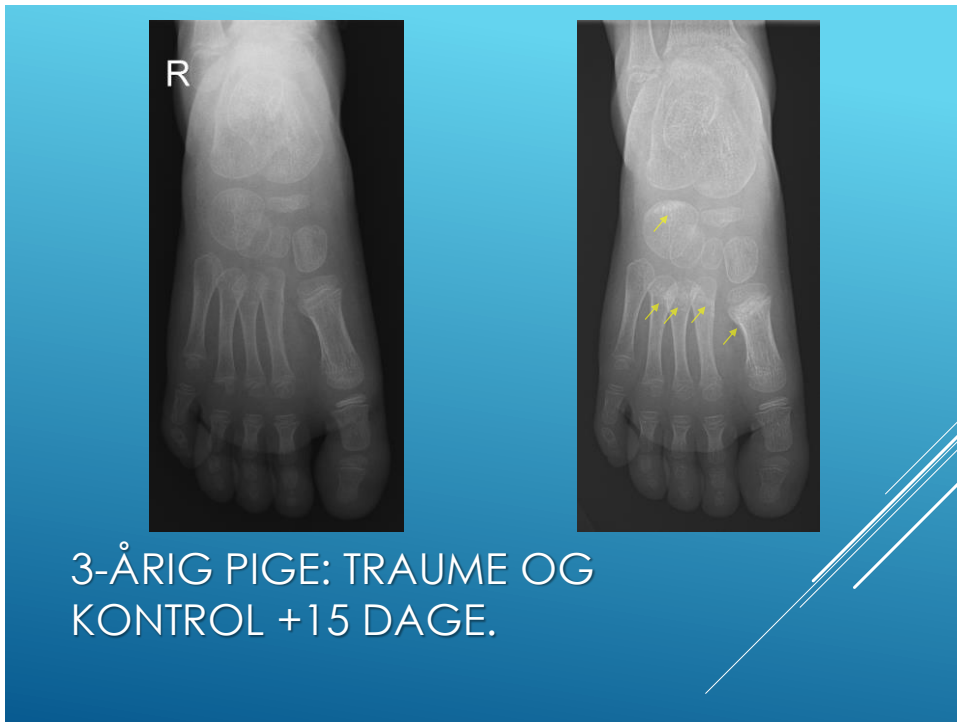
Bemærk den proximale migration af den distale del af sømmet, der ikke var placeret i epifysekernen.

139

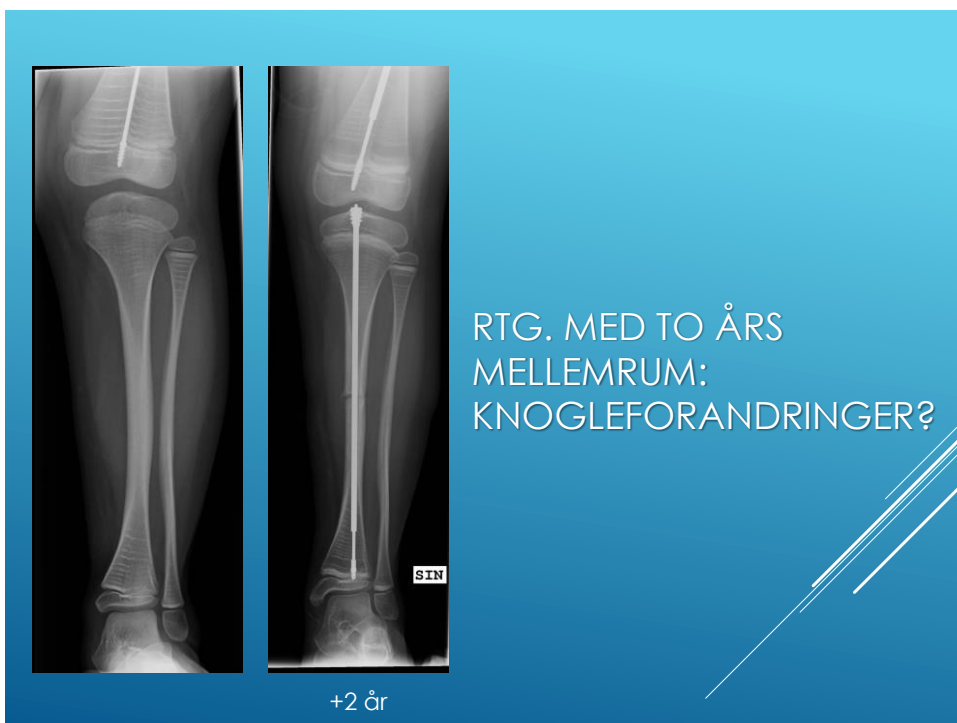


3-ÅRIG PIGE: TRAUME OG
KONTROL +15 DAGE.

140



141



142



RTG. MED TO ÅRS MELLEMRUM

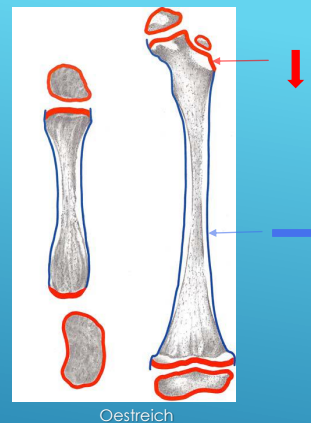
143



RTG. MED TO ÅRS MELLEMRUM:
BIFOSFONATBEHANDLING

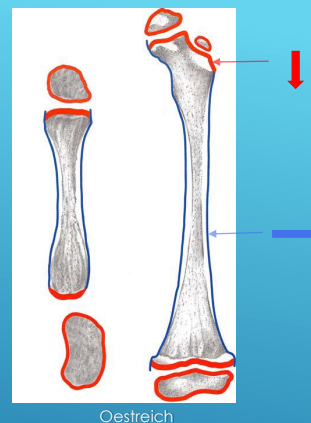
144

- ▶ Dværgvækst
- ▶ Fødselshyppighed: 1:10.000-30.000
- ▶ Autosomal dominant (FGFR3 mutation)
- ▶ Høj mutationsrate (80% har forældre med normal højde)



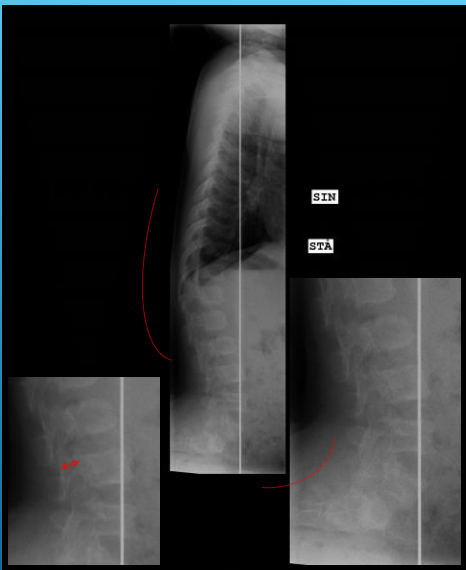
ACHONDROPLASI

145



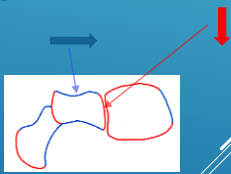
ACHONDROPLASI

146




SKOLIOSEOPTAGELSE

Odontoid hypoplasi (få)
 Udvikling af kyfose (nogle), samt smertegivende lændelordose
 Kort pedikel og interpedikulær afstand. Neurologisk påvirkning af UE ved 20 års alderen hos 20 %



Oestreich

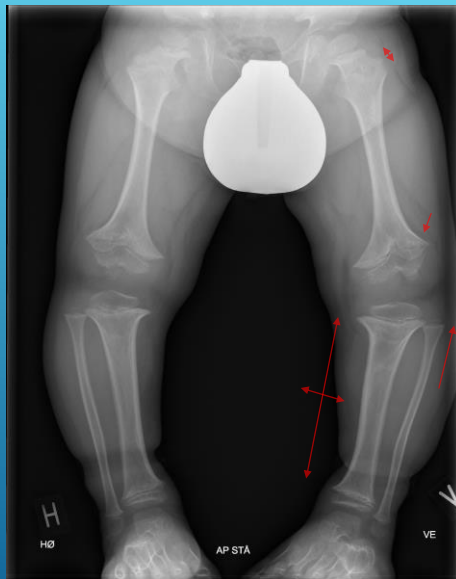
147



HKA OPTAGELSE

HKA: Hip-Knee-Ankle
 Stående optagelse med stor FFA (gerne 3 m eller derover)

148



HKA OPTAGELSE

Øget diameter i forhold til
længde (dysproportional)

Kort collum femoris

Metafysære
uregelmæssigheder

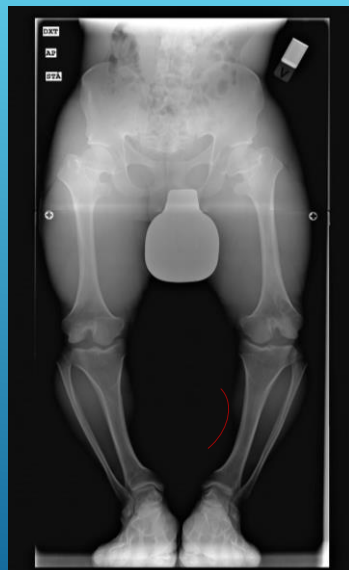
Fibulær overvækst

Genu varum



Oestreich

149



HKA OPTAGELSE

16-årig mand

150

MUCOPOLY- SACCHARIDOSER (MPS)

- ▶ Lysosomal sygdom
 - ▶ 4-6/100.000 nyfødte
 - ▶ Mange subtyper: MPS-I-IX (ikke V eller VIII).
 - ▶ Fraset MPS-II, autosomal recessiv.
 - ▶ Normal ved fødsel (progressiv sygdom)
- ▶ Skeletalt: Dysostosis multiplex
 - ▶ Forsinket vækst/ophør
 - ▶ Håndforandringer
 - ▶ Columna forandringer
 - ▶ Hofteforandringer
 - ▶ Tykke korte diafysler og hypoplastiske epifyser

MORQUIO SYNDROM (MUCOPOLYSACCHARIDOSIS IV)

151

MORQUIO SYNDROM (MUCOPOLYSACCHARIDOSIS IV)



J-FORMET SELLA



152

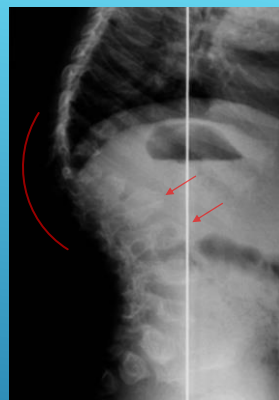
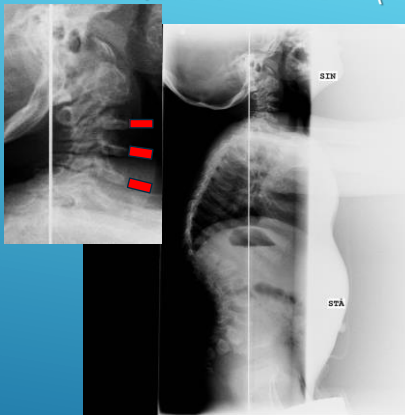
MORQUIO SYNDROM (MUCOPOLYSACCHARIDOSIS IV)



HOFTEDYSPLASI CAPUT FORANDRINGER

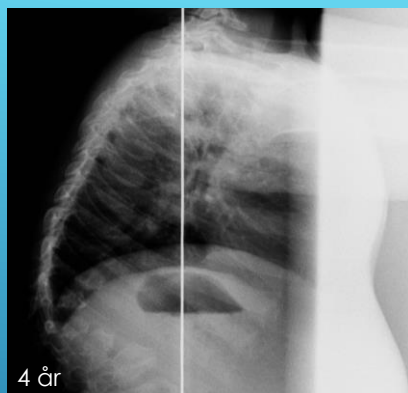
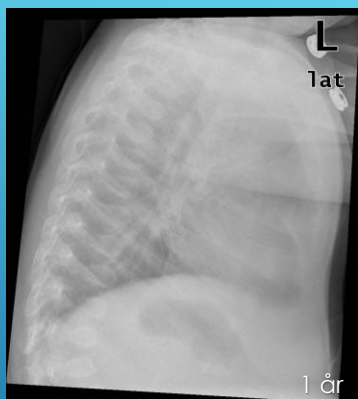
153

MORQUIO SYNDROM (MUCOPOLYSACCHARIDOSIS IV)



PLATYSPONDYLI KYFOSE PÅ THORACOLUMBALE OVERGANG

154



PROGRESSION AF FORANDRINGER (PROGRESSIV SYGDOM)

155

- ▶ Systemiske sygdomme og syndromer kan præsentere sig:
 - ▶ Med tydelige og entydige fund
 - ▶ Med diskrete forandringer
- ▶ Det er vigtigt altid at analysere hele undersøgelsen og evt. tidligere undersøgelser
- ▶ Det er vigtigt at have et godt kendskab til den radiologiske normal anatomi
- ▶ MDT-konferencer er ofte nødvendige.

SYNDROMER OG DYSPLASIER (OFTEST) SPECIALISTOPGAVE

156

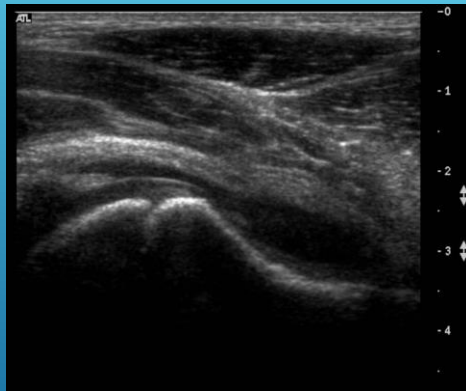
DET HALTENDE BARN

157

- ▶ 7-årig dreng.
- ▶ Spontan opstået smerter i venstre hofteregion, for få dage siden.
- ▶ Ligger med hoften flekteret.
- ▶ Afebril

BILLEDDIAGNOSTIK?

158

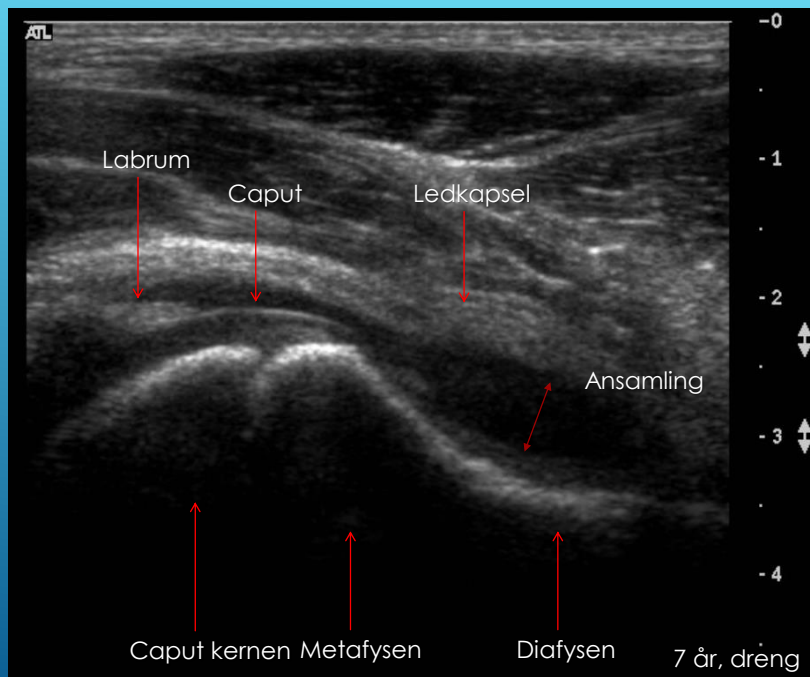


ULTRALYD

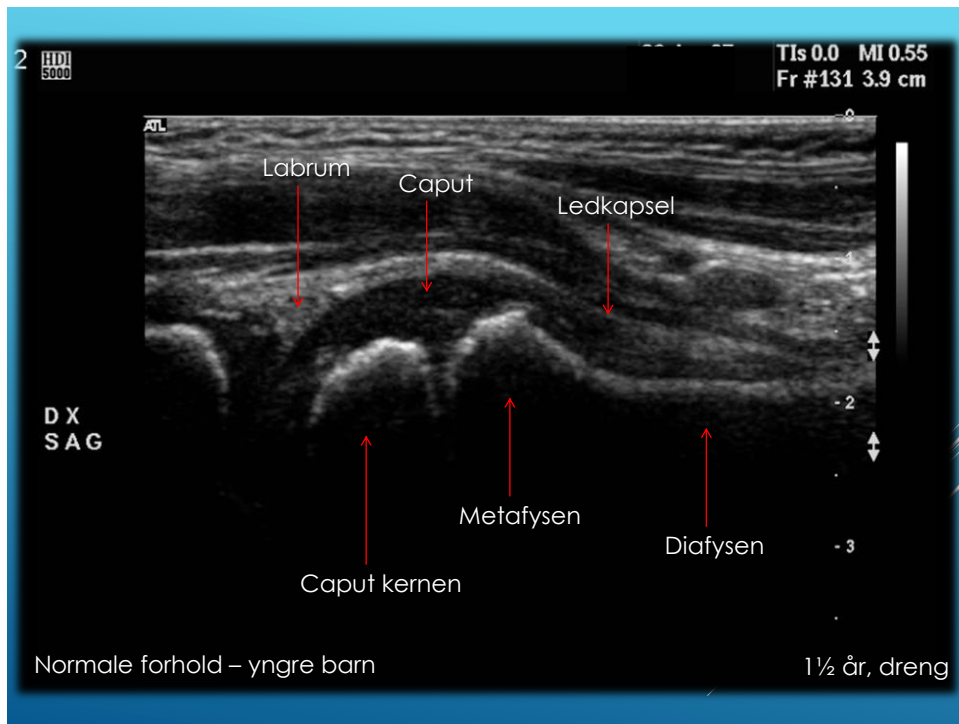
Kort anamnese – serøs coxit?

Længere anamnese (> 1 uge?), eller reciderende symptomer: Rtg. bækken AP+Lauensteins projektion.

159



160



161

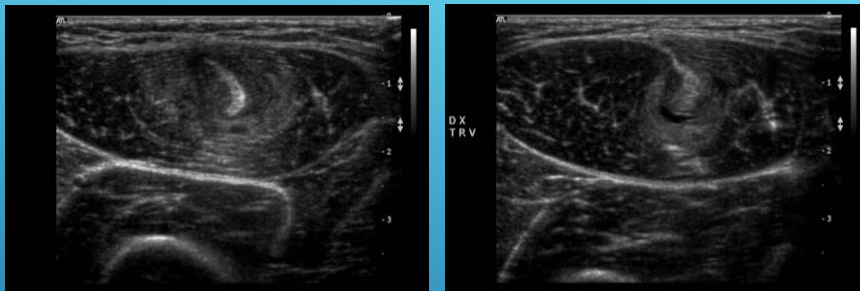


162

BILLEDDIAGNOSTIK?

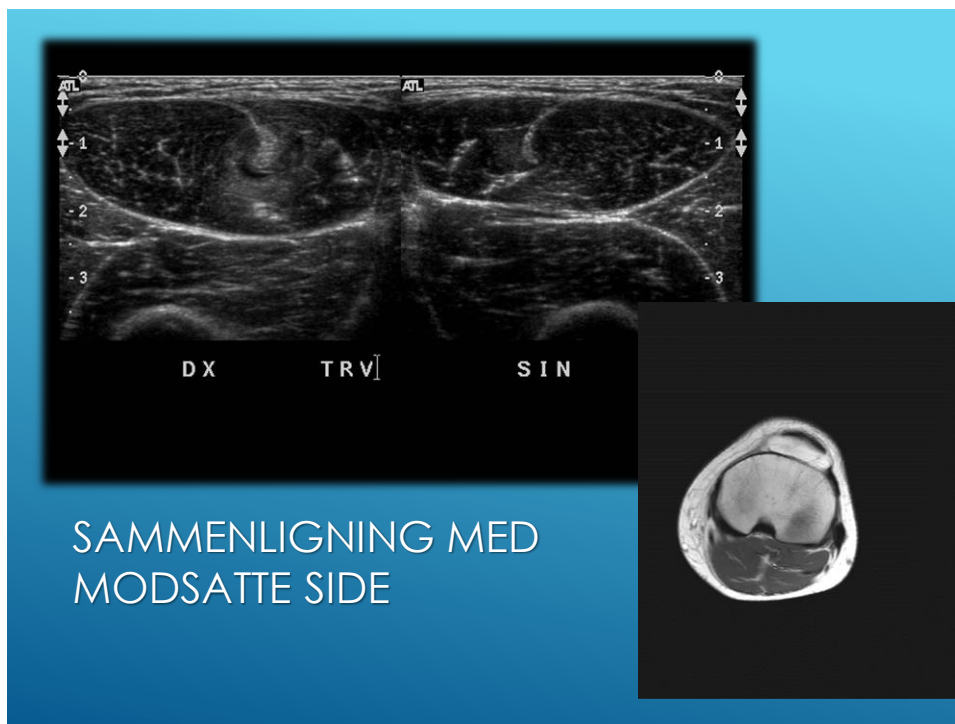
- ▶ 9-årig dreng med ømhed og hævelse gennem 1½ måned i højre lår anteriort.
- ▶ Klinisk mistanke om tumor.

163

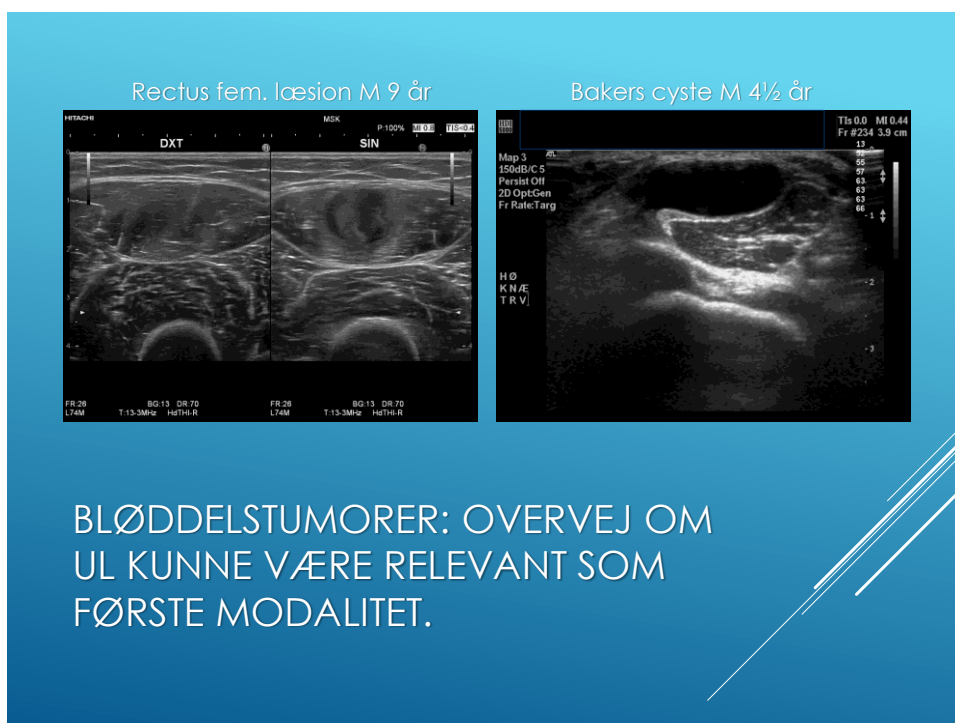


SKANNING HHV. PROXIMALT OG
DISTALT VED HÆVELSEN

164



165



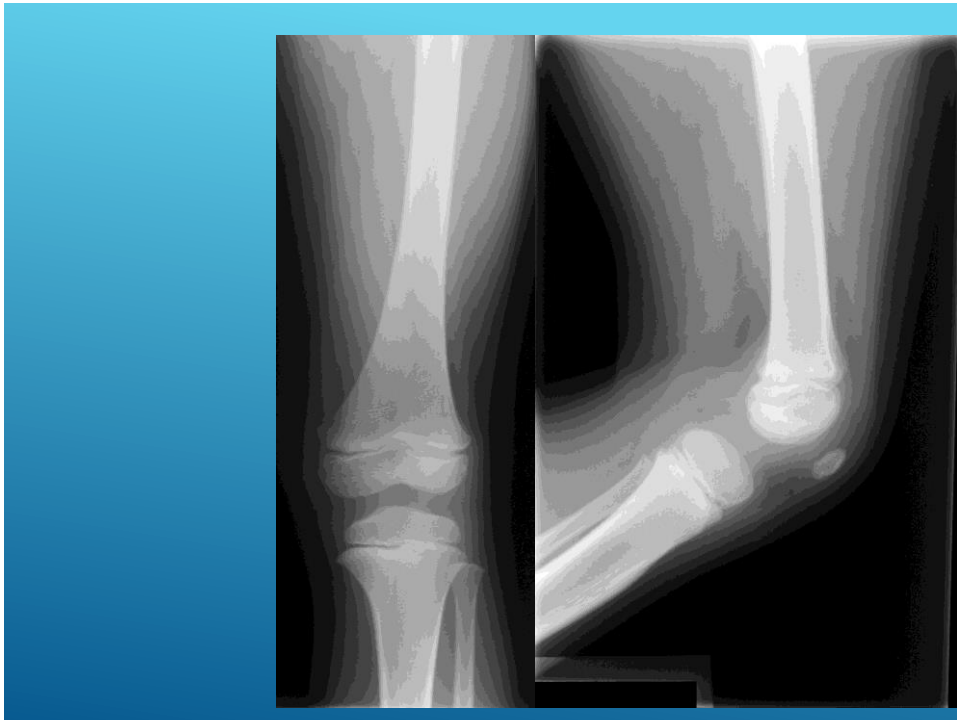
166



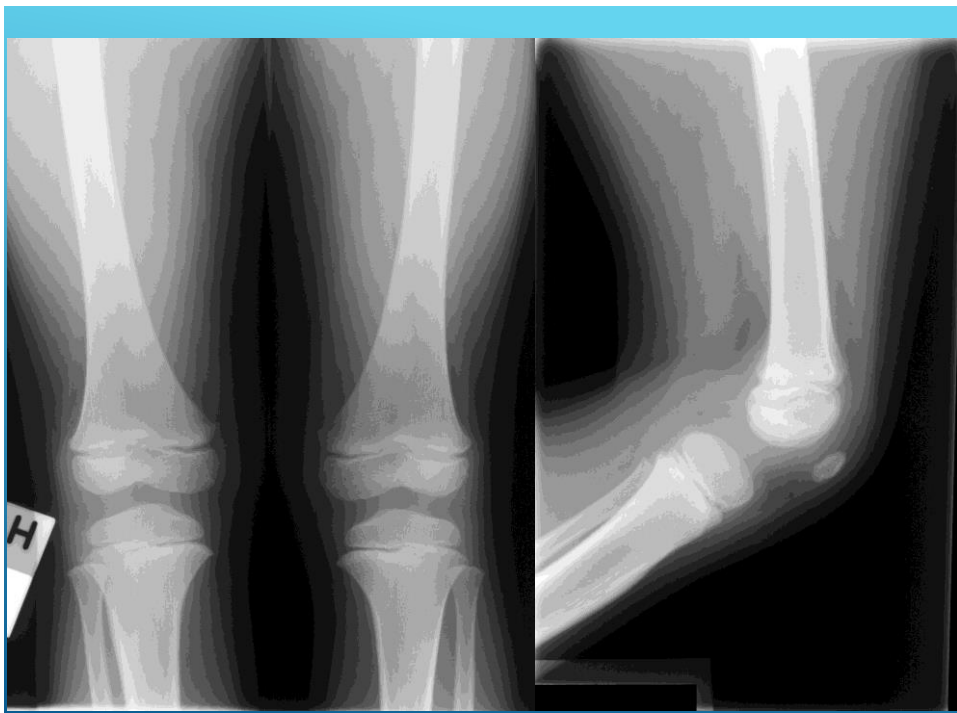
167



168



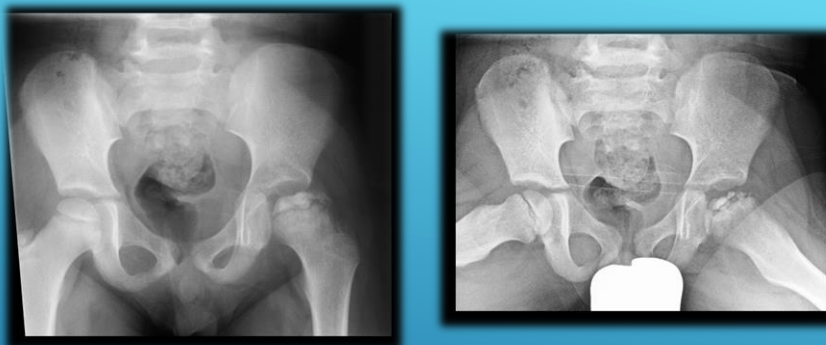
169



170

DRENGEN NU 6 ÅR GAMMEL
(11 MÅNEDER SENERE),
SMERTER FRA VENSTRE HOFTE.

171

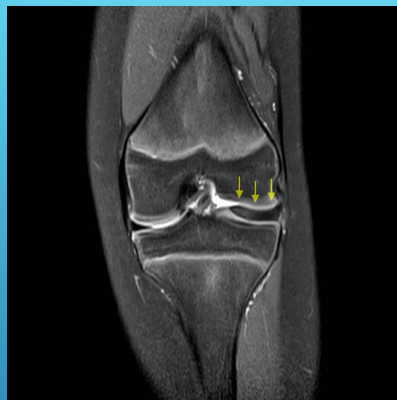


172



10-ÅRIG PIGE: KNÆSMERTER

173



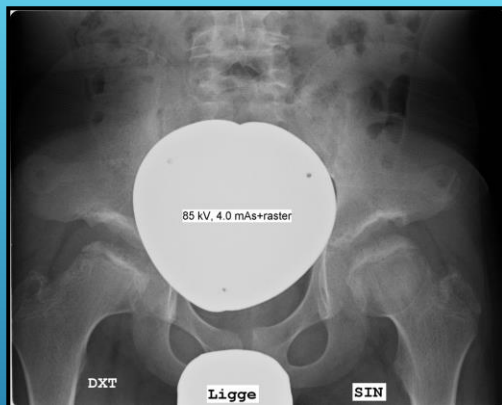
10-ÅRIG PIGE: DISCOID LATERAL
MENISK

174

DET HALTENDE BARN

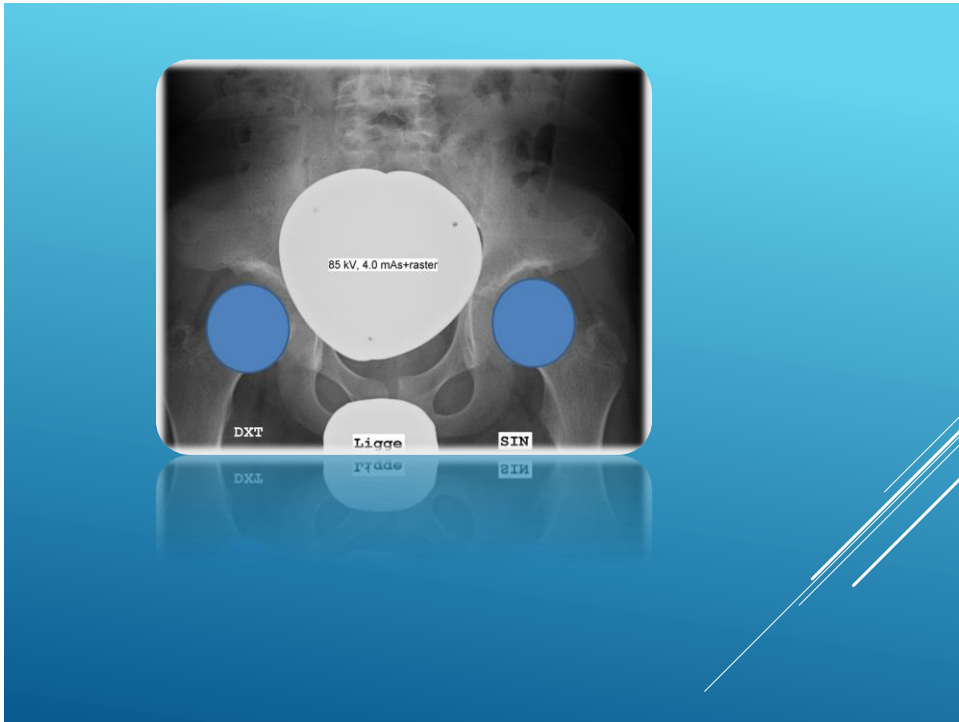
CLP vs. spondyloepifysær dysplasi

175

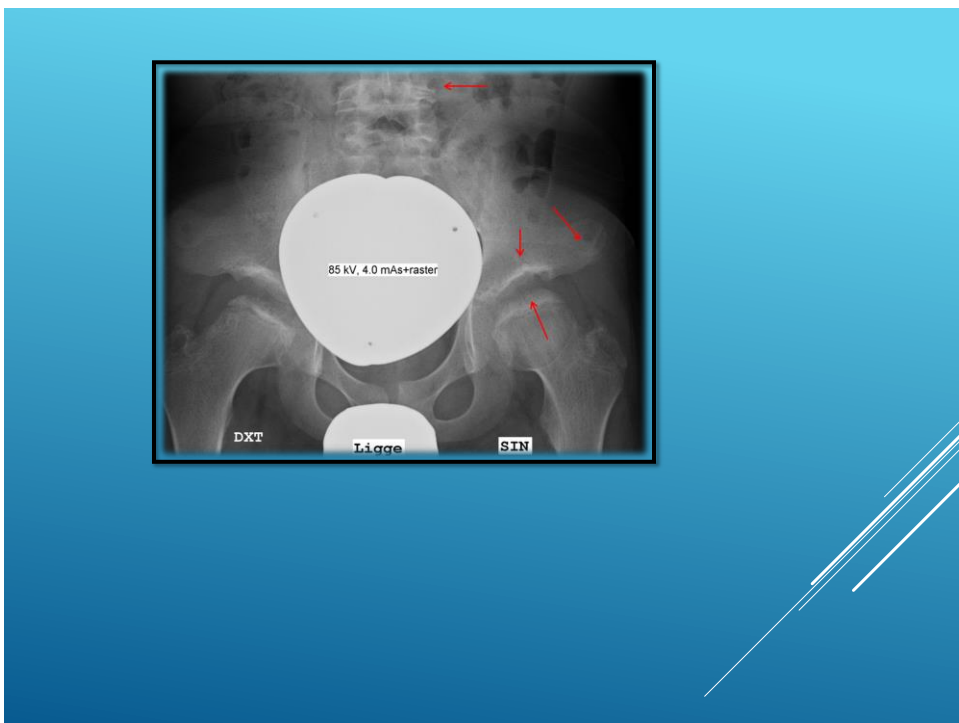


BILATERAL MB. CALVÉ-LEGG-
PERTHES – FULGT FOR DETTE
GENNEM FLERE ÅR – NU 12 ÅR

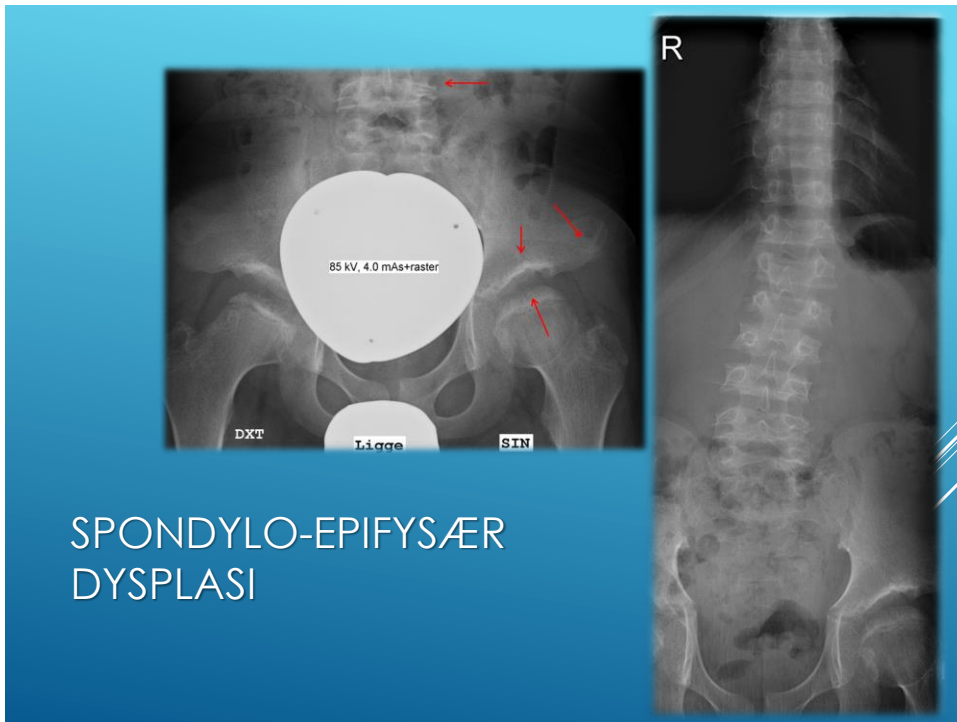
176



177



178



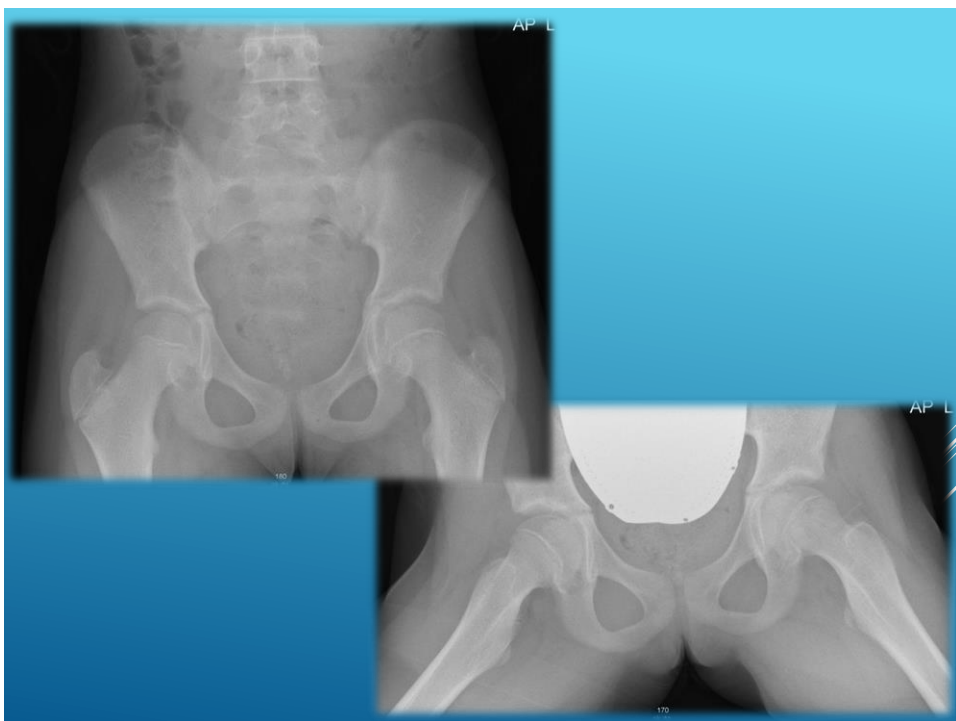
179



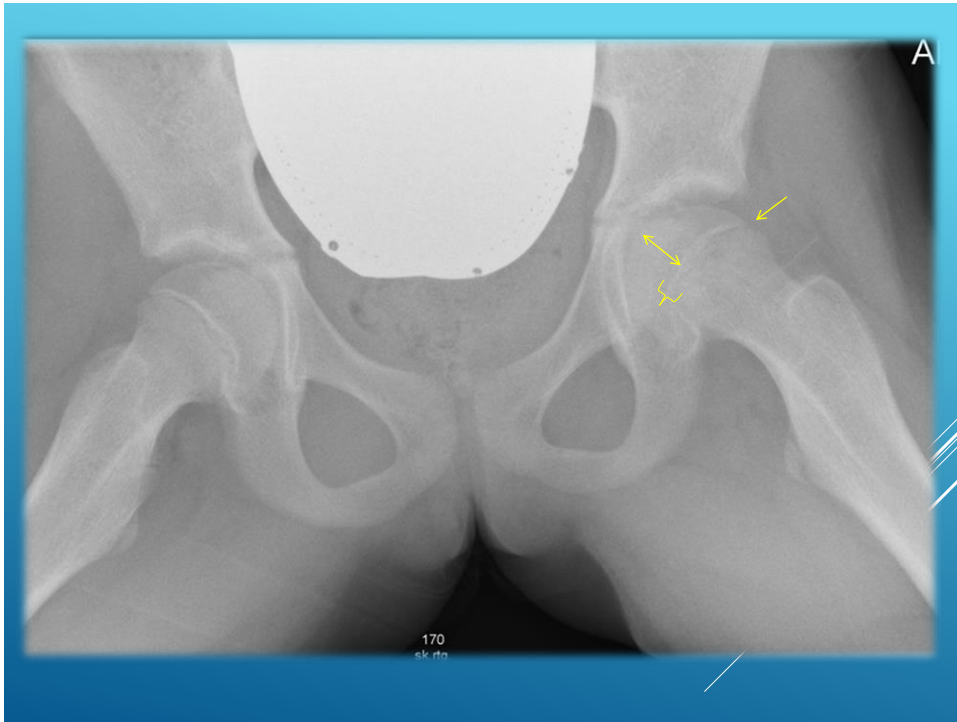
180

11-ÅRIG PIGE, VÆLTET PÅ
CYKEL.
SMERTER FRA VENSTRE HOFTE.

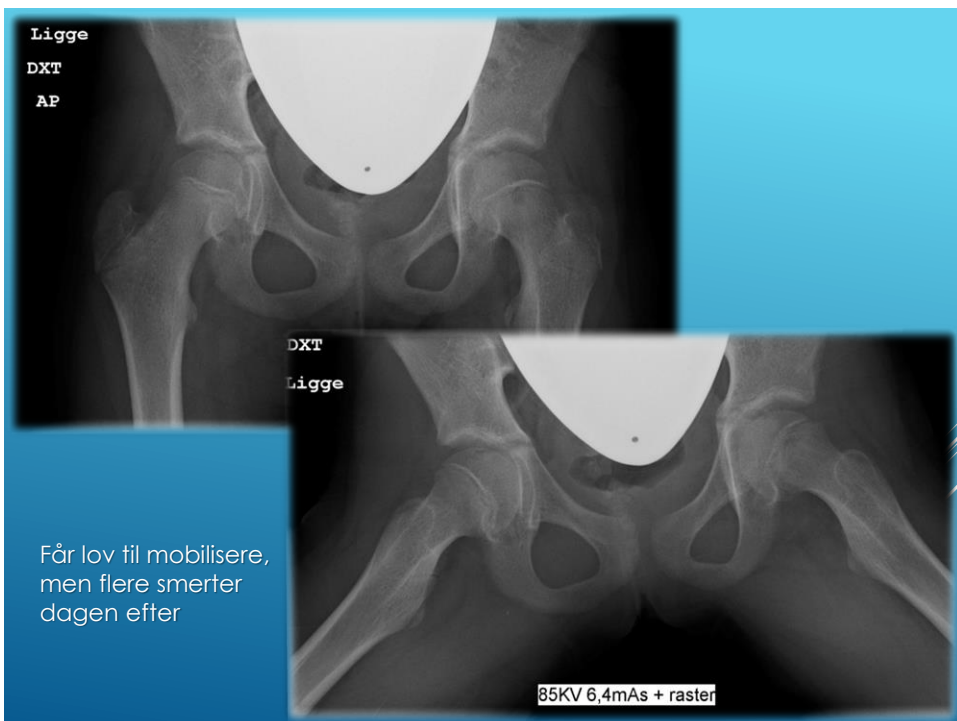
181



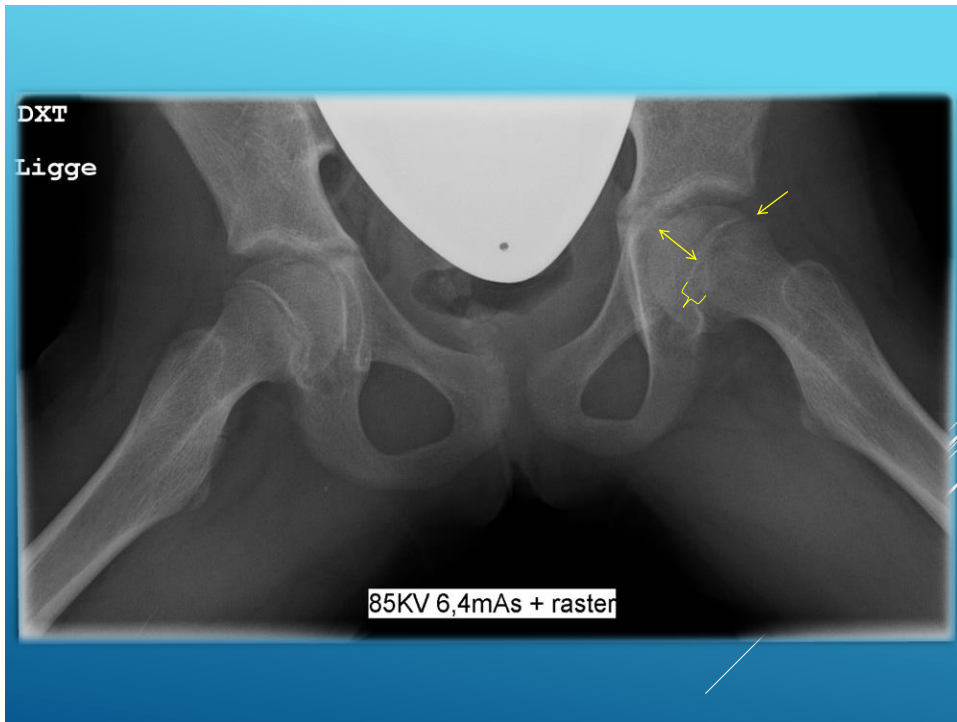
182



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CAVE!

Epifysiolyse svarende til caput femoris, er en akut tilstand, hvor der foretages akut operation.

186

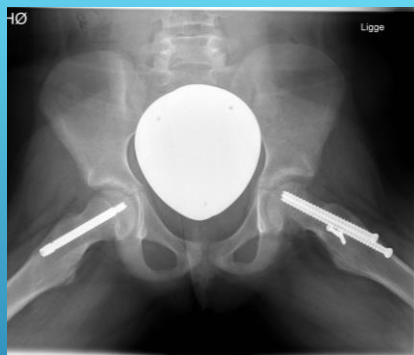
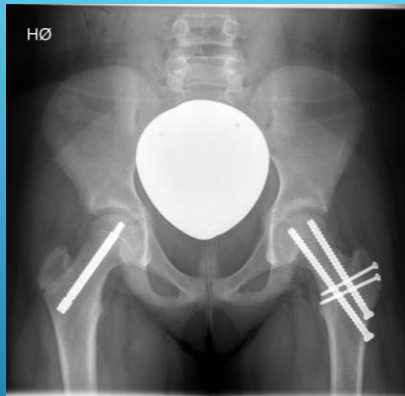
Pt. Nr 1



10 ÅR OG 11 MDR.

187

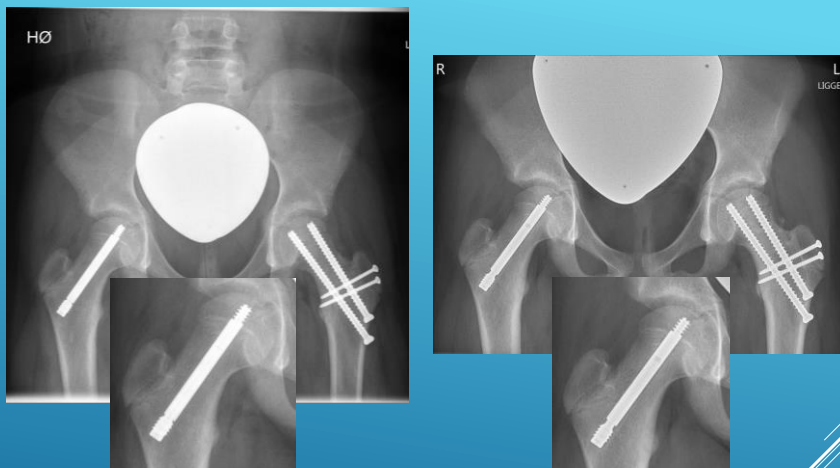
Pt. Nr 1



11 ÅR 4 MDR.

188

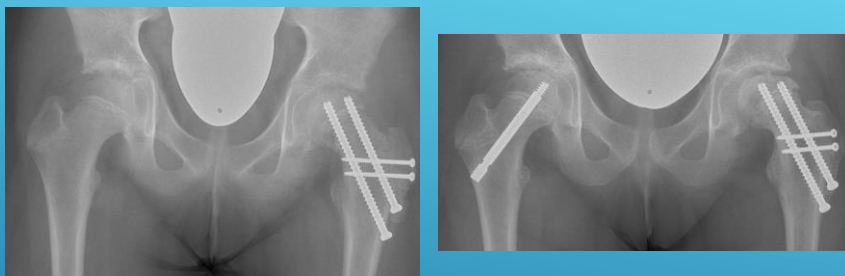
Pt. Nr 1



11 ÅR 4 MDR. + 12 ÅR 0 MDR.

189

Pt. Nr 2

KONTROL 11 DAGE EFTER OP (12ÅR
OG 2 MDR.) SAMT KONTROL EFTER
5½ MDR.

190

Pt. Nr 2



KONTROL 11 DAGE EFTER OP (12 ÅR
OG 2 MDR.) SAMT KONTROL EFTER
5½ MDR.

191

Pt. Nr 3



12 ÅR 11 MDR. OG 13 ÅR 6 MDR.

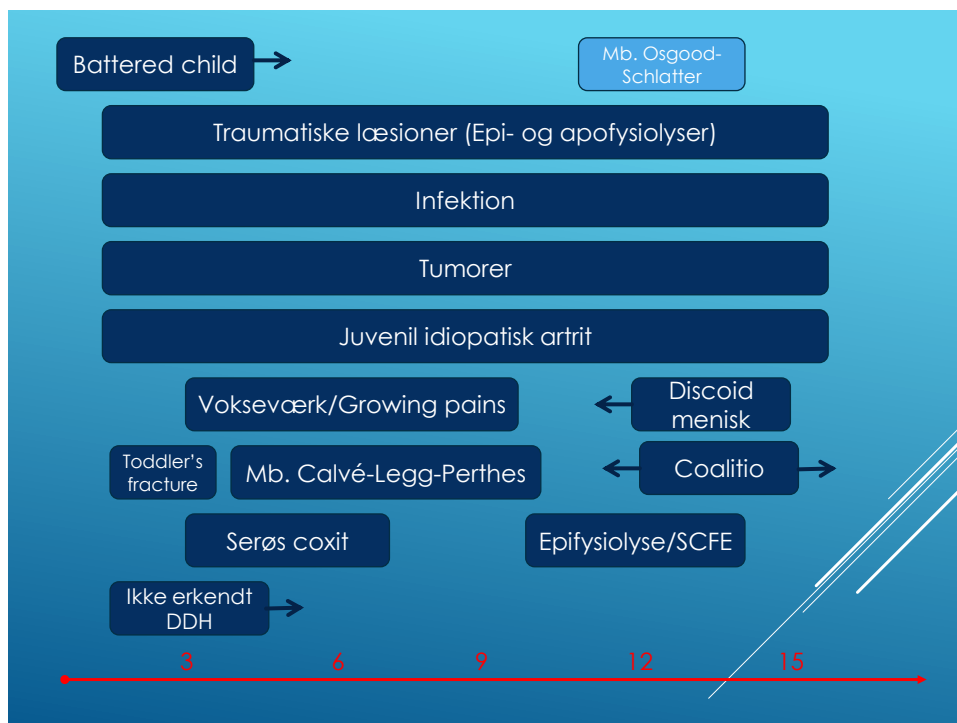
192

Pt. Nr 3



12 ÅR 11 MDR. OG 13 ÅR 6 MDR.
CHONDROLYSE

193



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195

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- ▶ Hip Sonography – Graf, Springer 2006
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- ▶ Tsai et al.: High-resolution CT with histopathological correlates of the classic metaphyseal lesion of infant abuse. Pediatr Radiol (2014) 44: 124-140
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- ▶ <http://omim.org> (Syndromer)
- ▶ https://www.orthorad.de/index.php/orthorad/pe_dbone (Normal anatomi - Røntgenbilleder)

LINKS

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APP'S