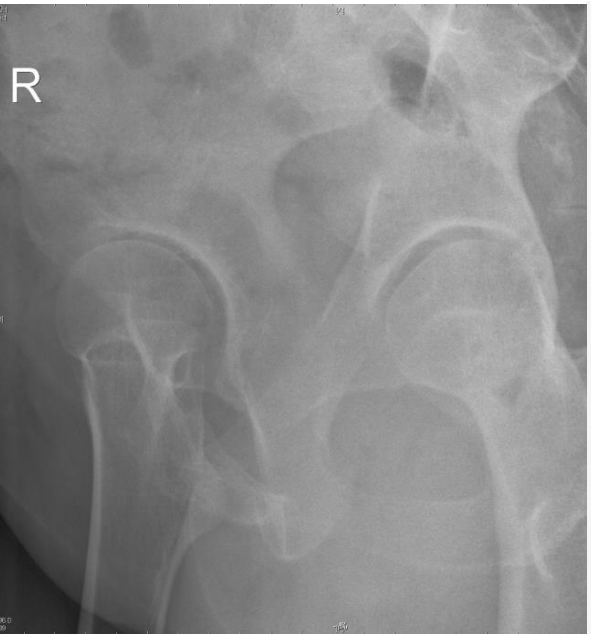
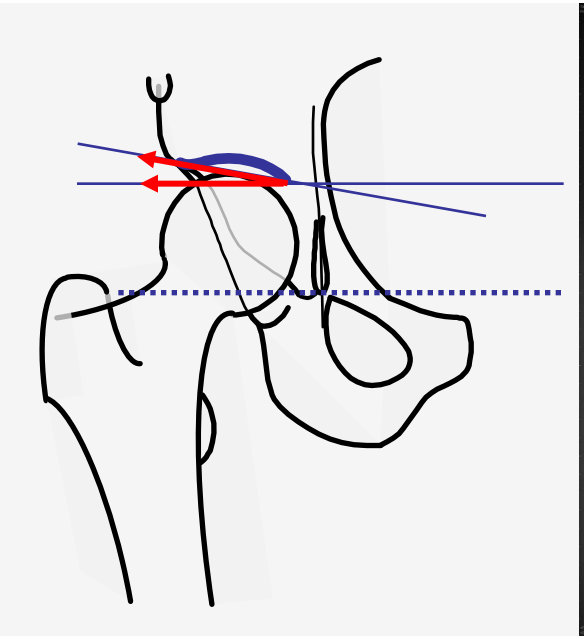
Relevant anatomy for hip preserving surgery

Hubert Nötzli





HOSPITAL DA LUZ
LISBOA

Lisbon International
Hip Symposium

November, 16th and 17th 2017
Hospital da Luz Lisboa auditorium

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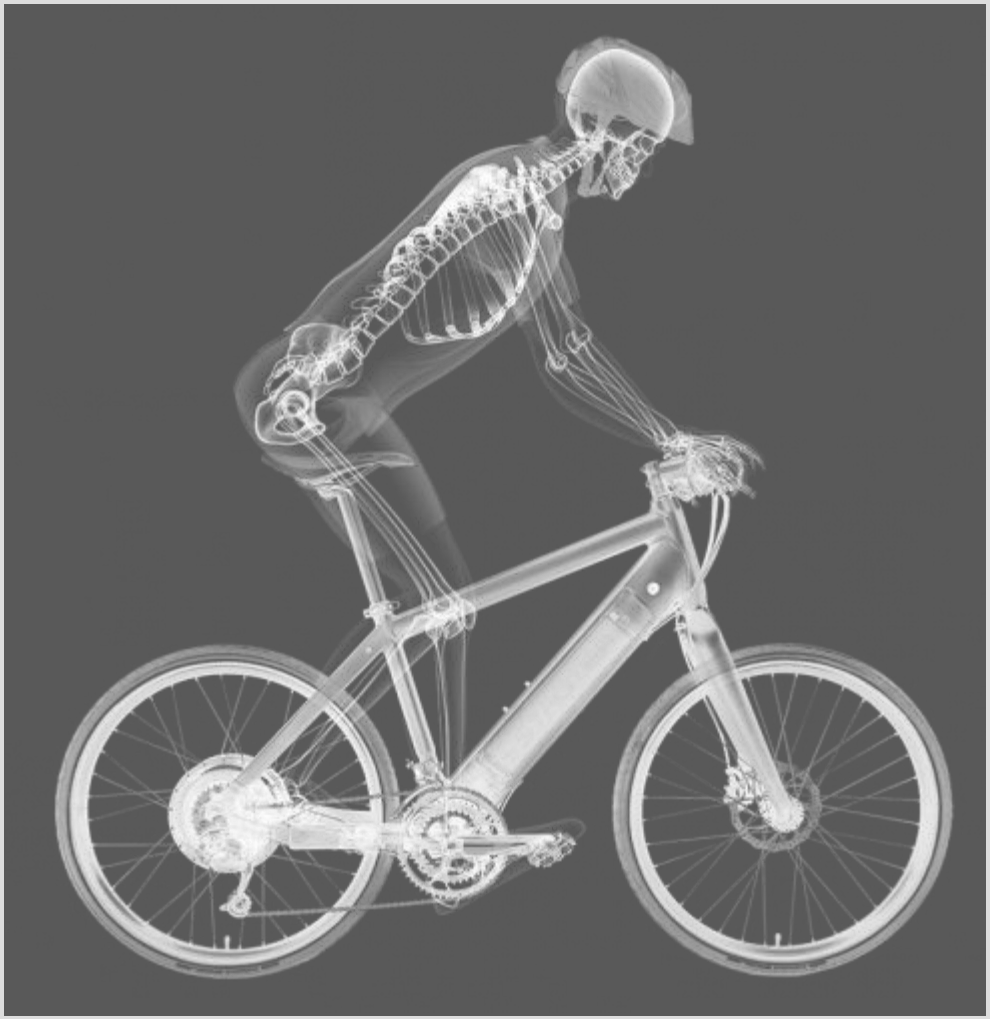

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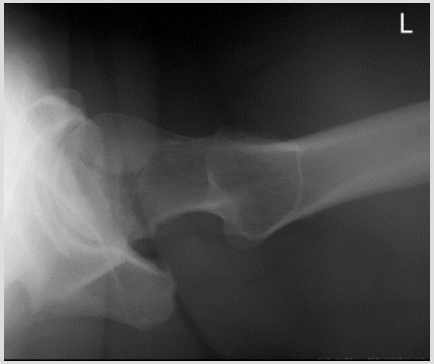
twentytwowords.com

X-Rays in two planes

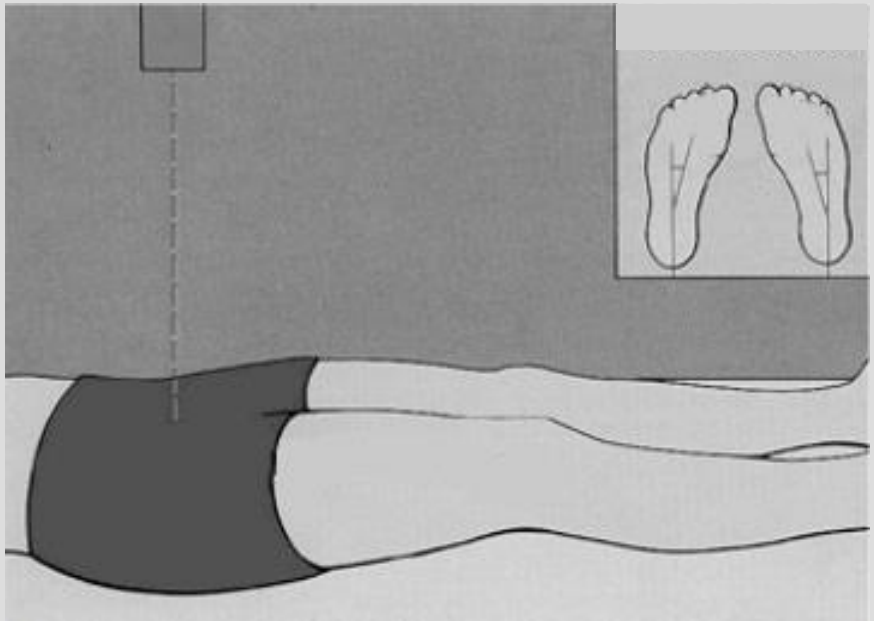
pelvis a.-p.

cross table view

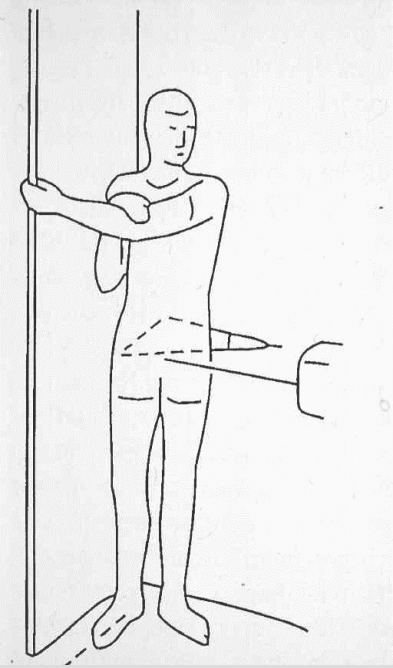


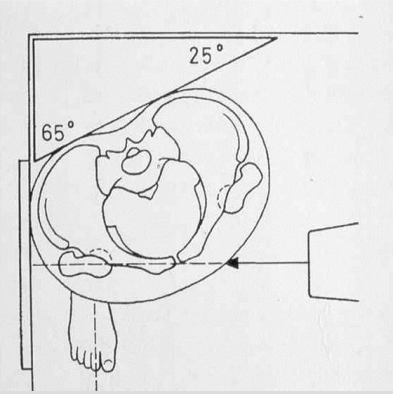
Basic Patient Position

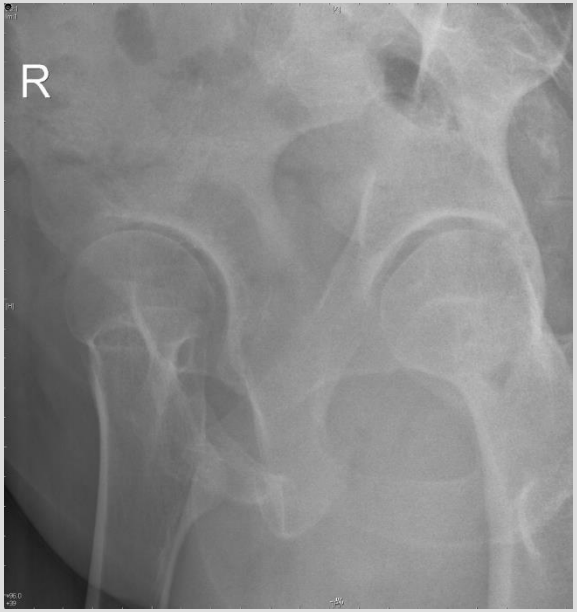
The patient lies supine on the table with the midsaggital line in the center of the table. The legs are internally rotated that the patellae point to the ceiling by separating the heels 10cm and bring the toes together in order to bring the femoral necks parallel to the film to reduce foreshortening.



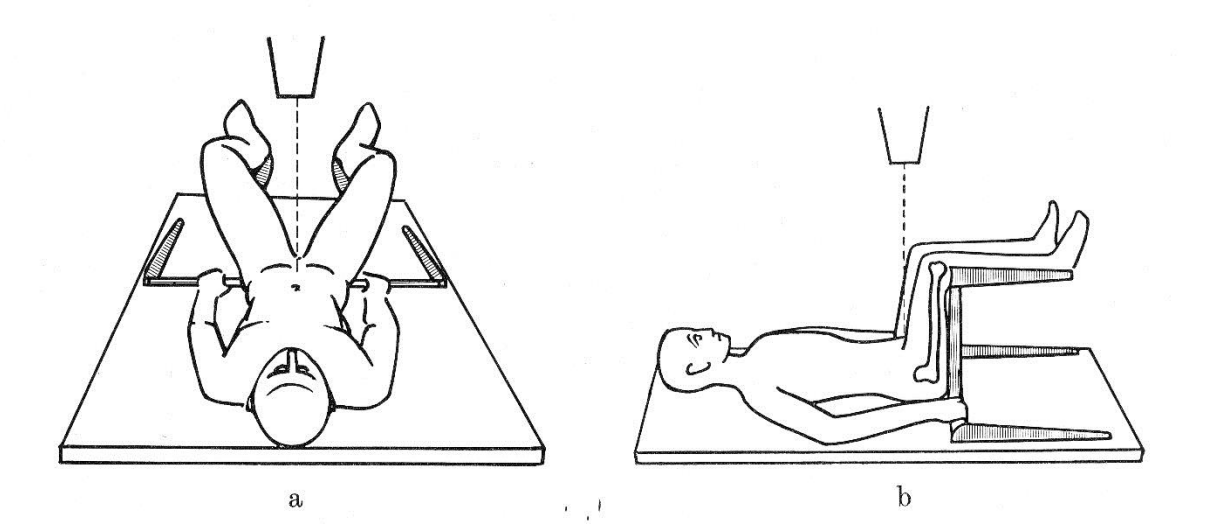
Faux profil view (Incidence of Lequesne)

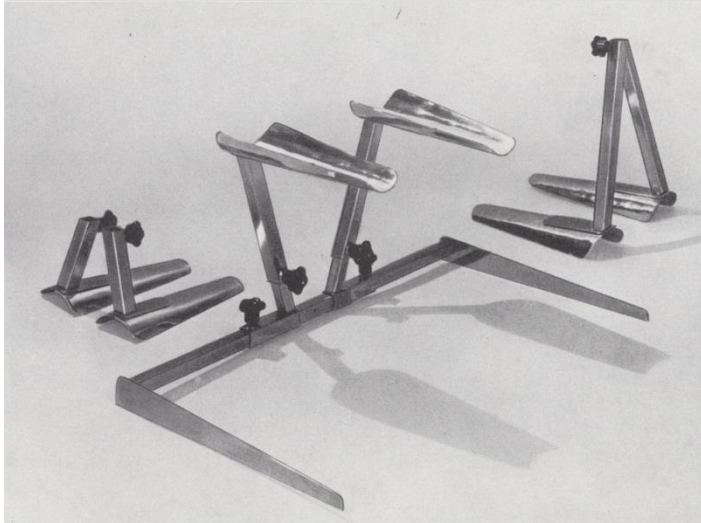






Dunn/Rippstein/Müller





M.E.Müller: Die hüftnahen Femurosteotomien, 1971

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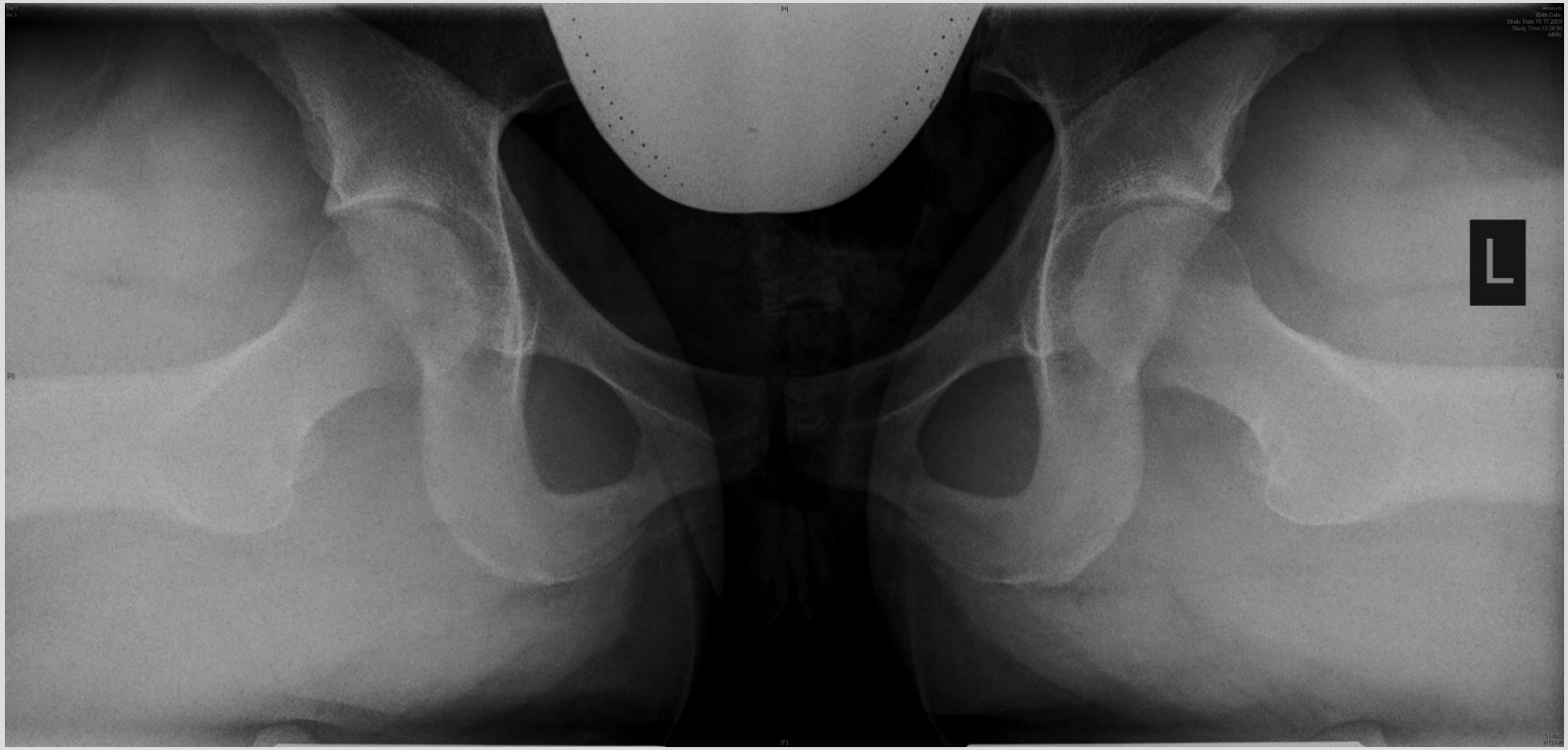

Patient f, age 14

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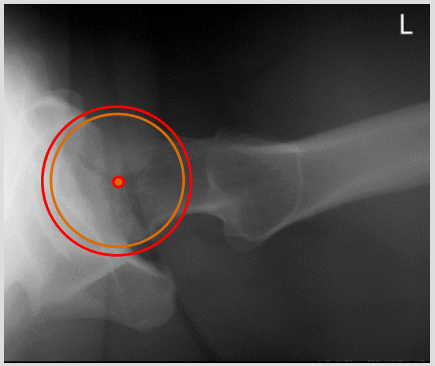
The head is round
and the hip concentric



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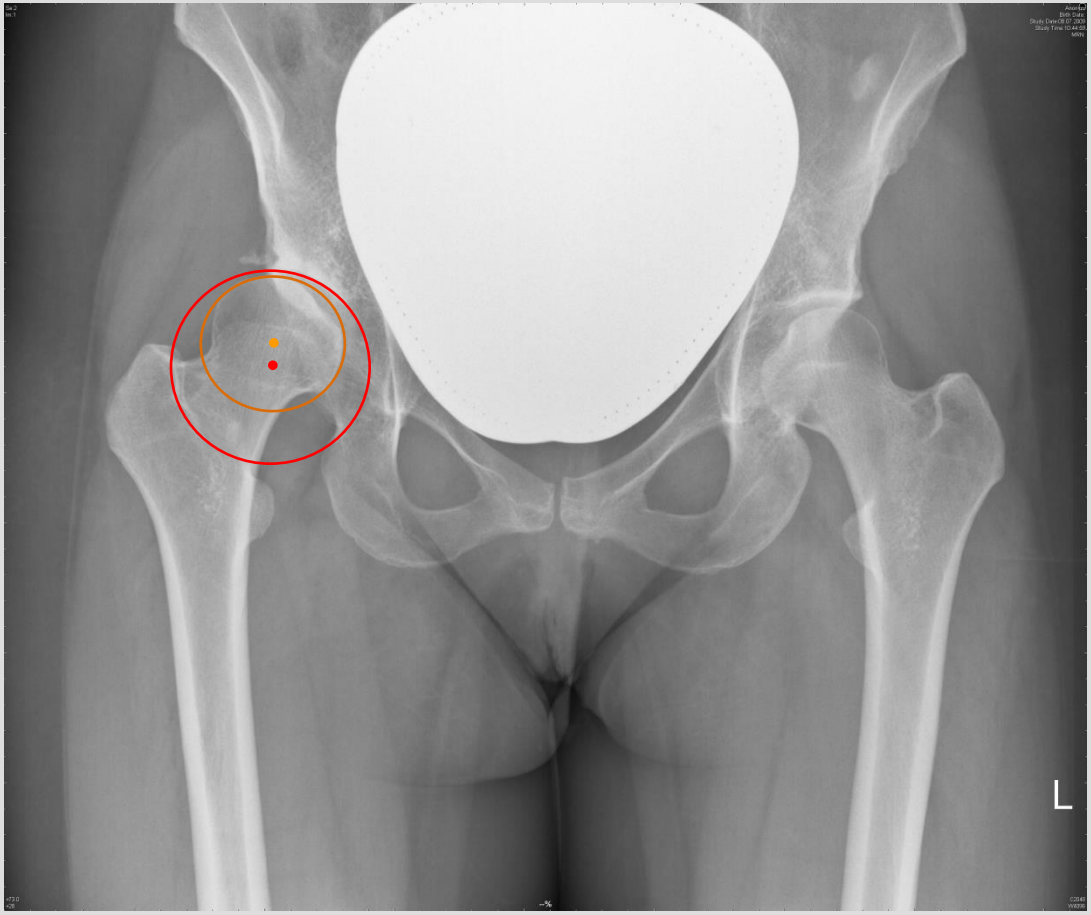

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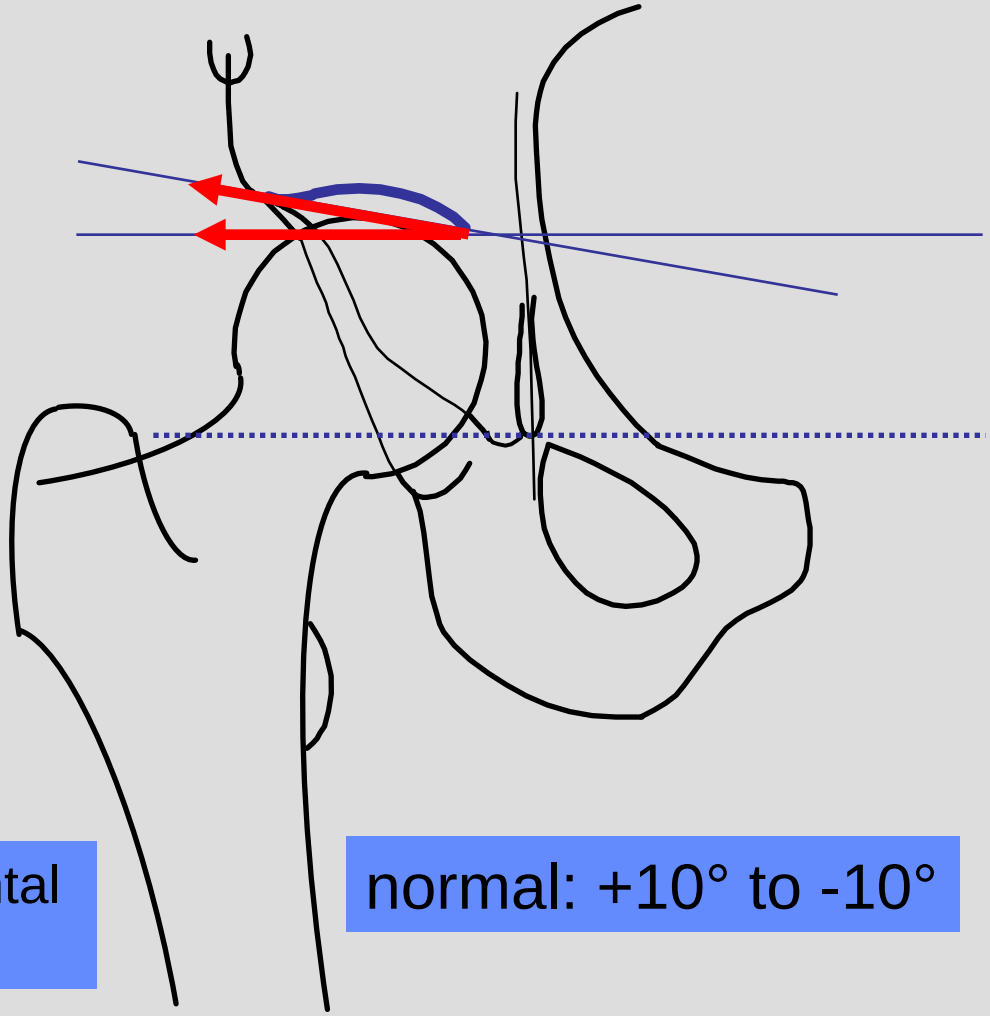
Acetabular-Index



A normal hip has a horizontal weight bearing area

normal: +10° to -10°

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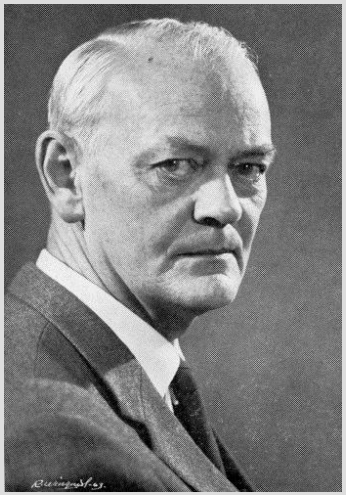
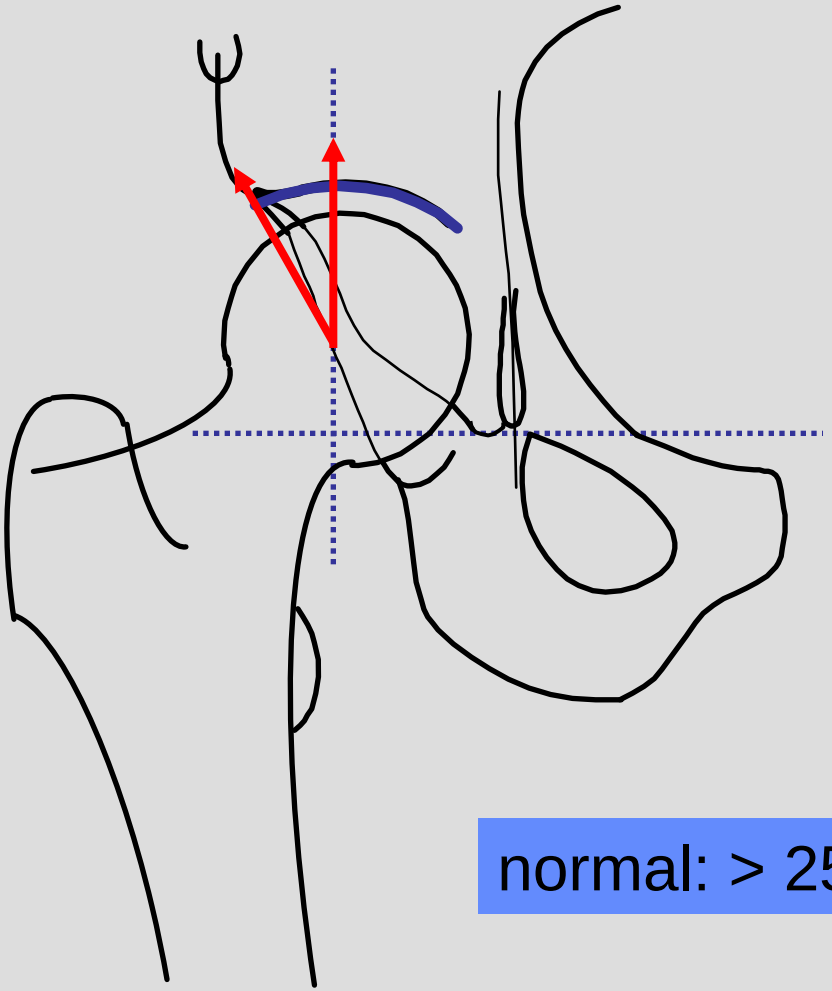
LCE - angle (Wiberg)





normal: > 25°

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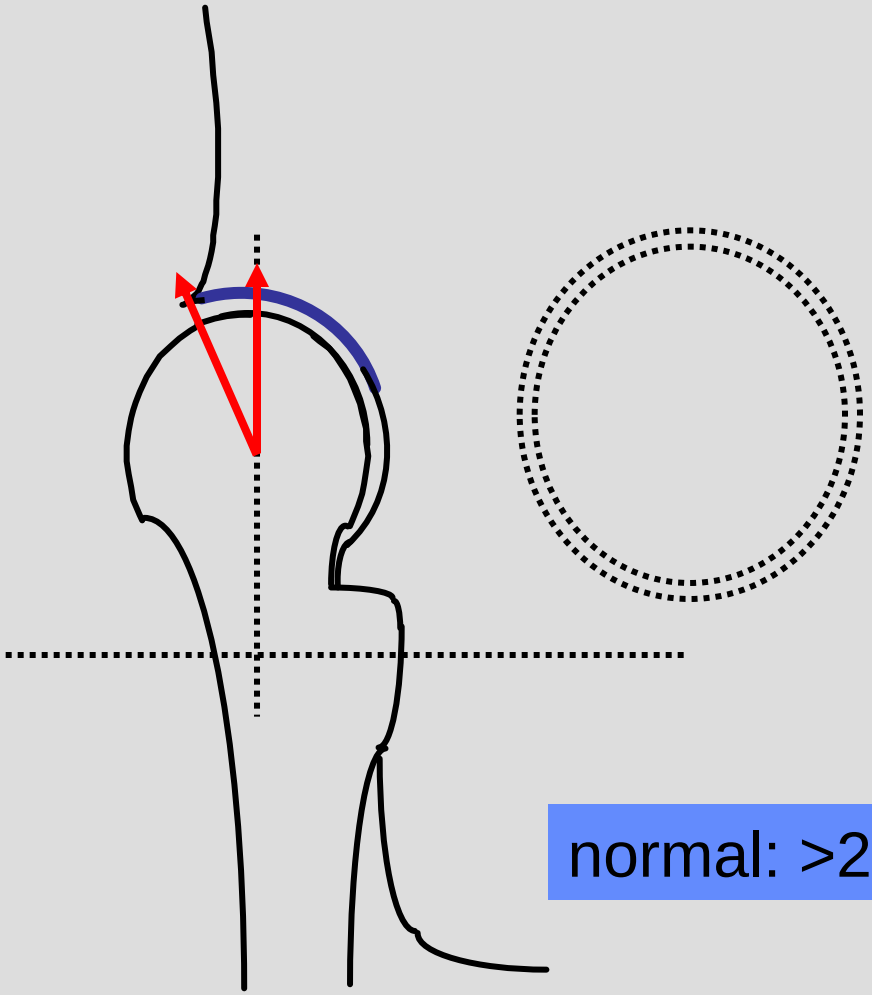
ACE-angle (Lequesne)



normal: >25°

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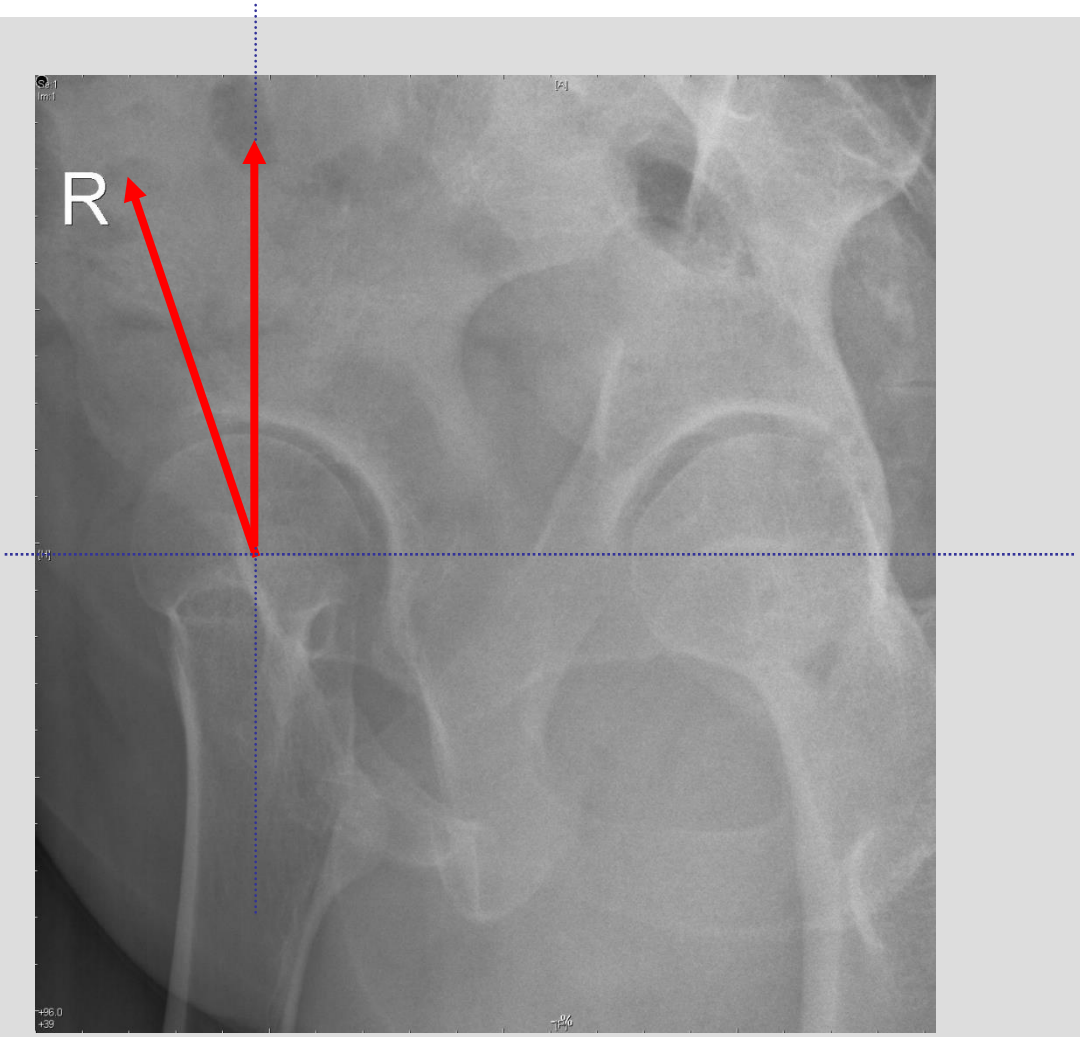

LCE- and ACE-angle

Normal 30°

Normal:	Grade I	> 25°
Pathologic:	Grade II	> 20° - 25°
	Grade III	> 5° - 20°
	Grade IV	< 5°

How much is too much?

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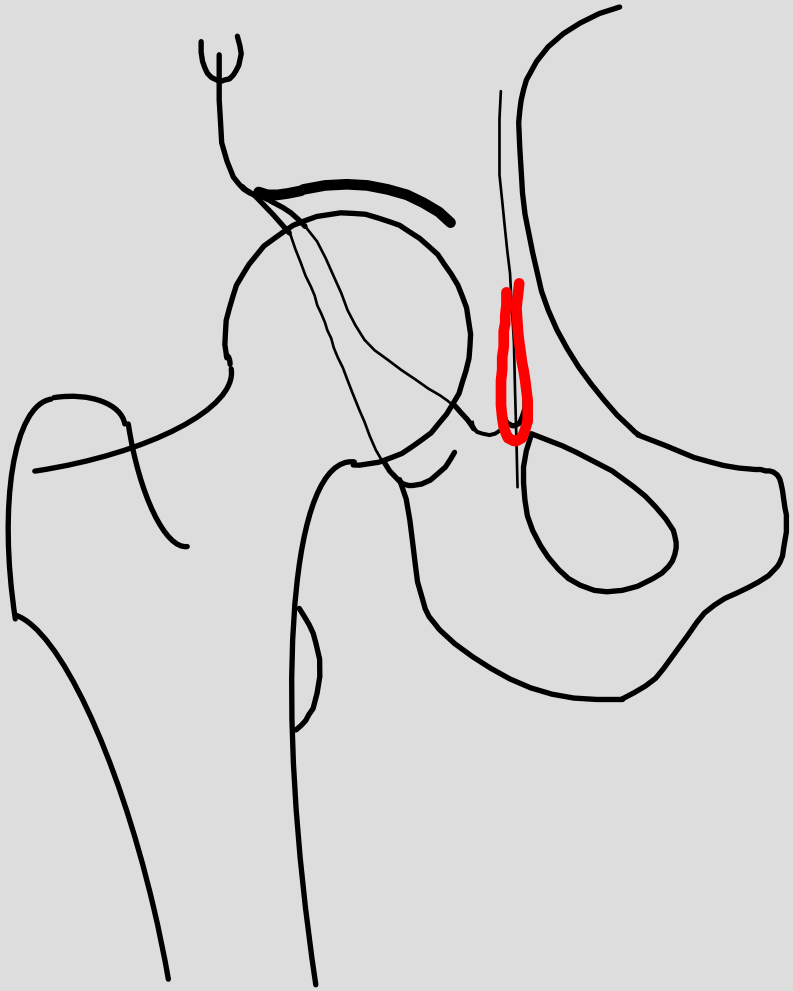
Teardrop-figure
(Koehler)



A normal teardrop figure
Looks like a tear

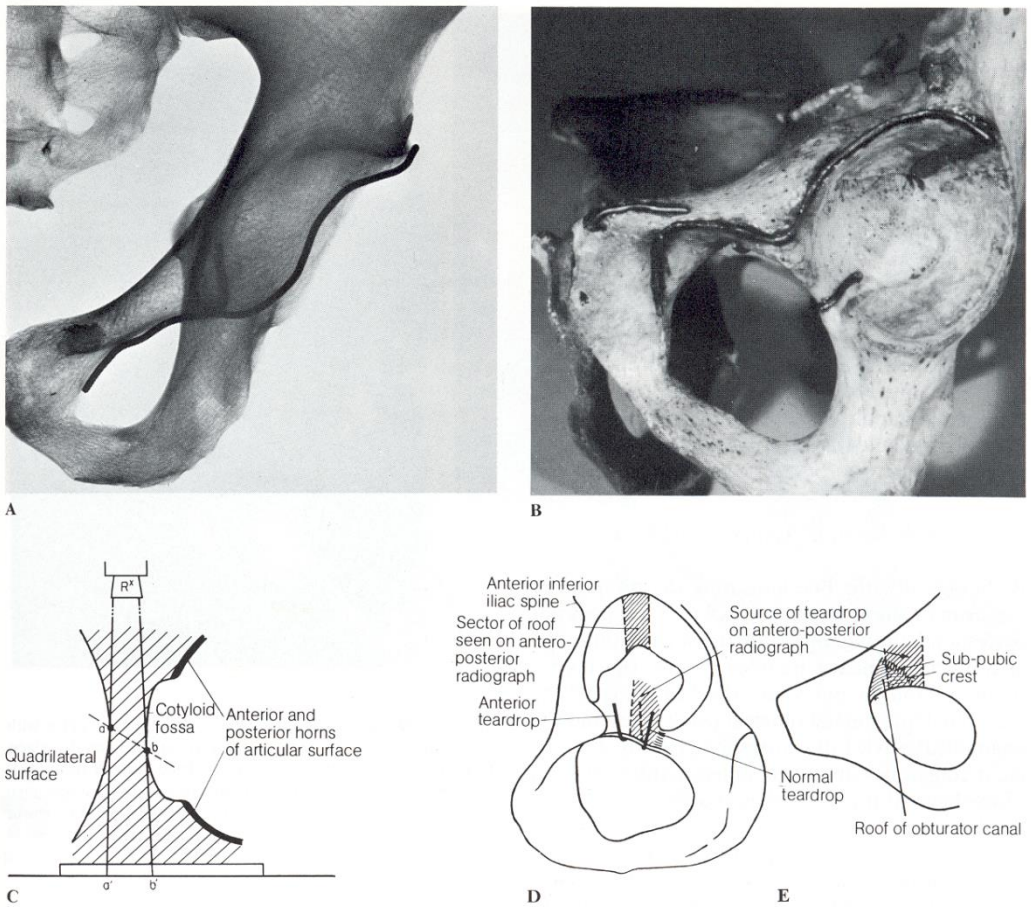


Fig. 3.7 A–E. The teardrop. **A** Radiograph of dried bone (lead wire accentuates the outline of the teardrop and the acetabulo-obturator line, and lead foil outlines the roof), **B** corresponding dried bone. **C–E** Diagrams. **C** Horizontal section showing the limbs of the teardrop formed by tangential incidence at sites not in the same coronal plane, **D** possible sources of the teardrop, **E** zone of bone responsible for the internal limb of the teardrop

E. Letournel
Fractures of the acetabulum 1993

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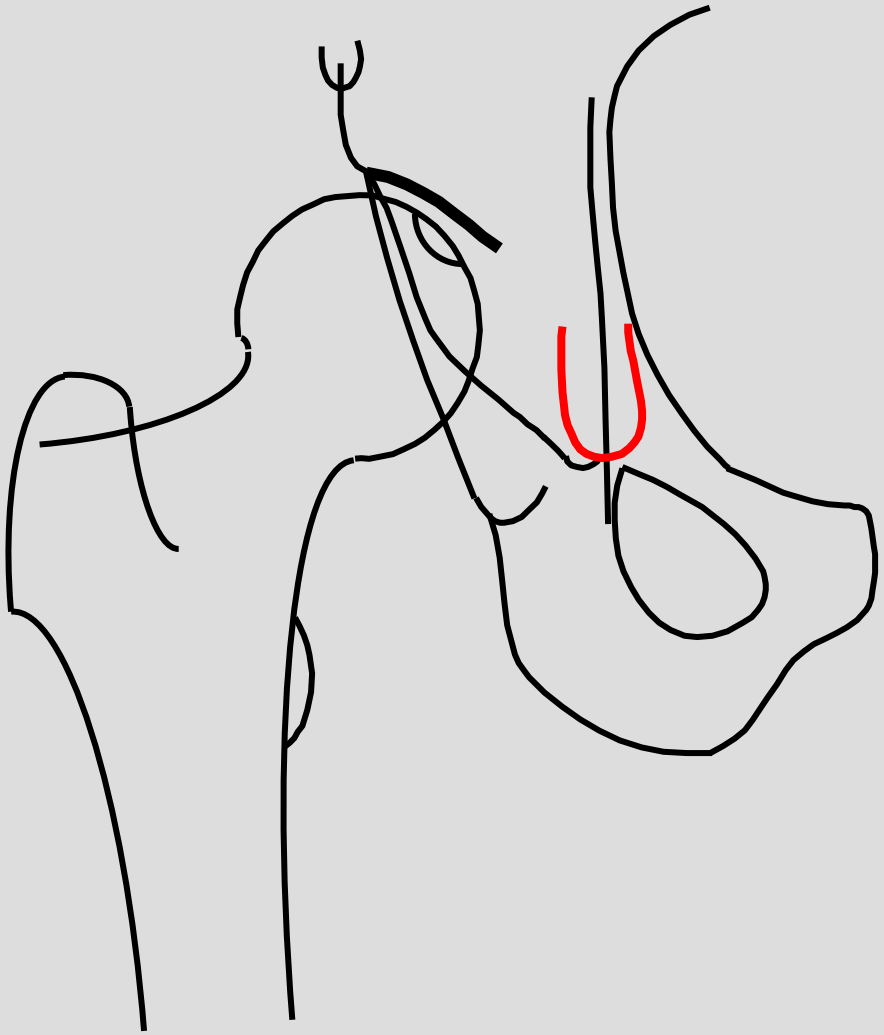
Teardrop-figure
(Koehler)



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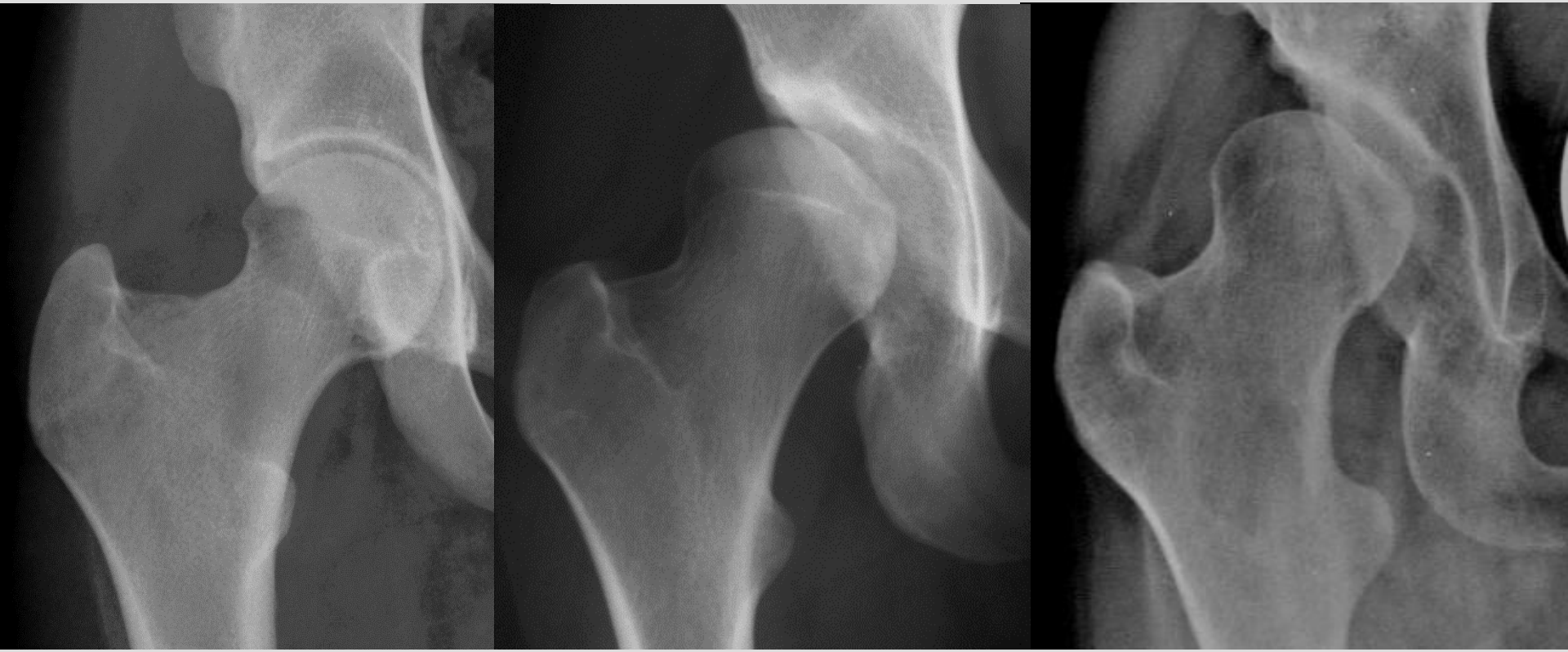
Teardrop figure (Koehler)



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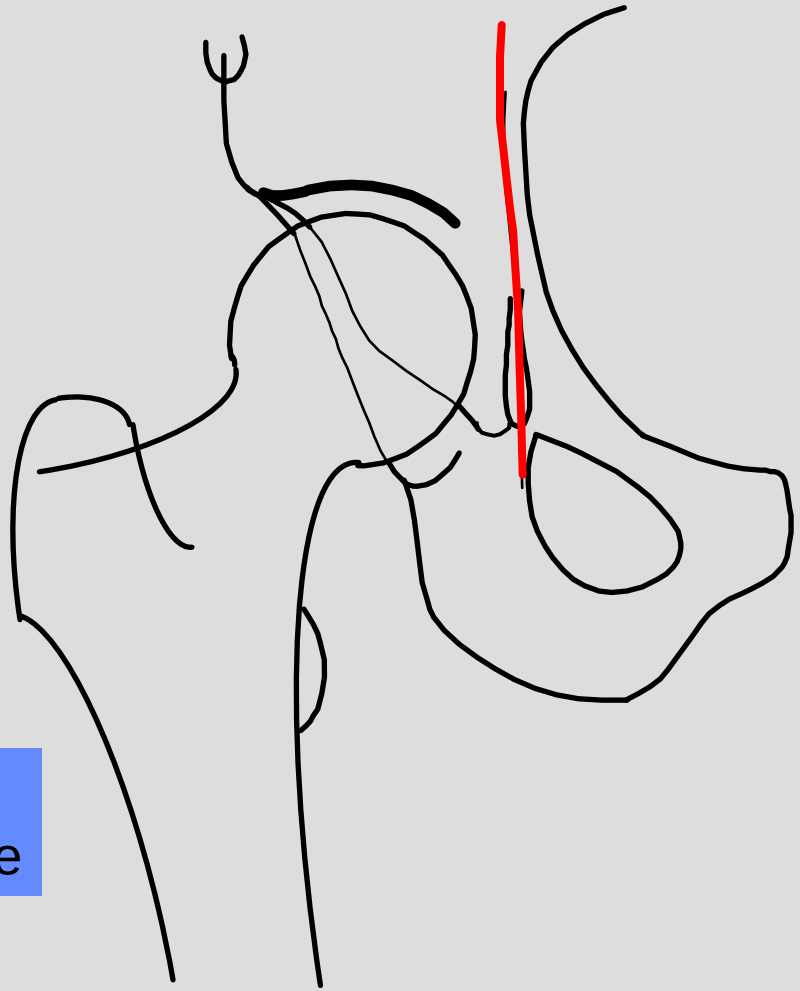
Ilio-ischial line



Neither the acetabulum nor the femoral head cuts the ilio-ischial line

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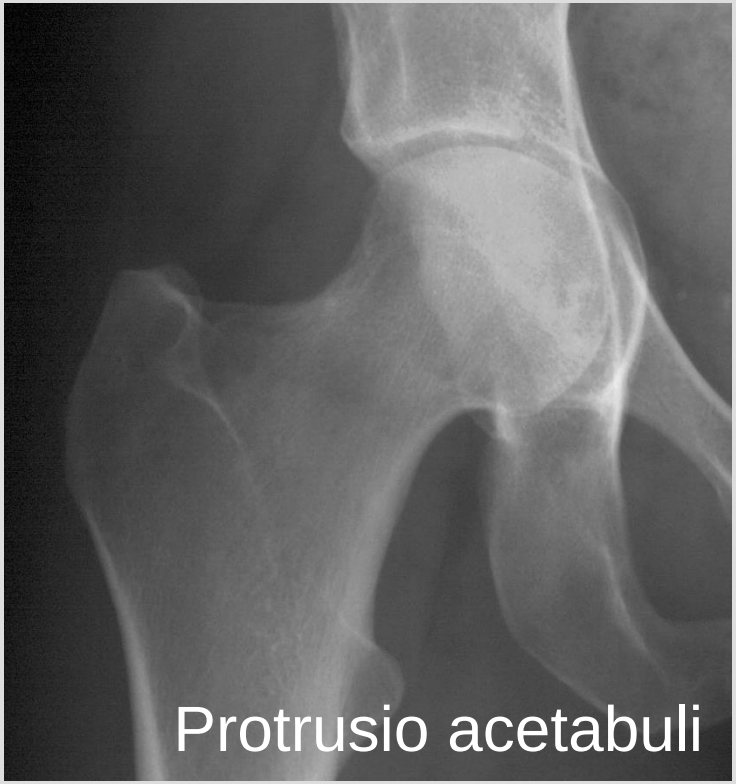
Ilio-ischial line



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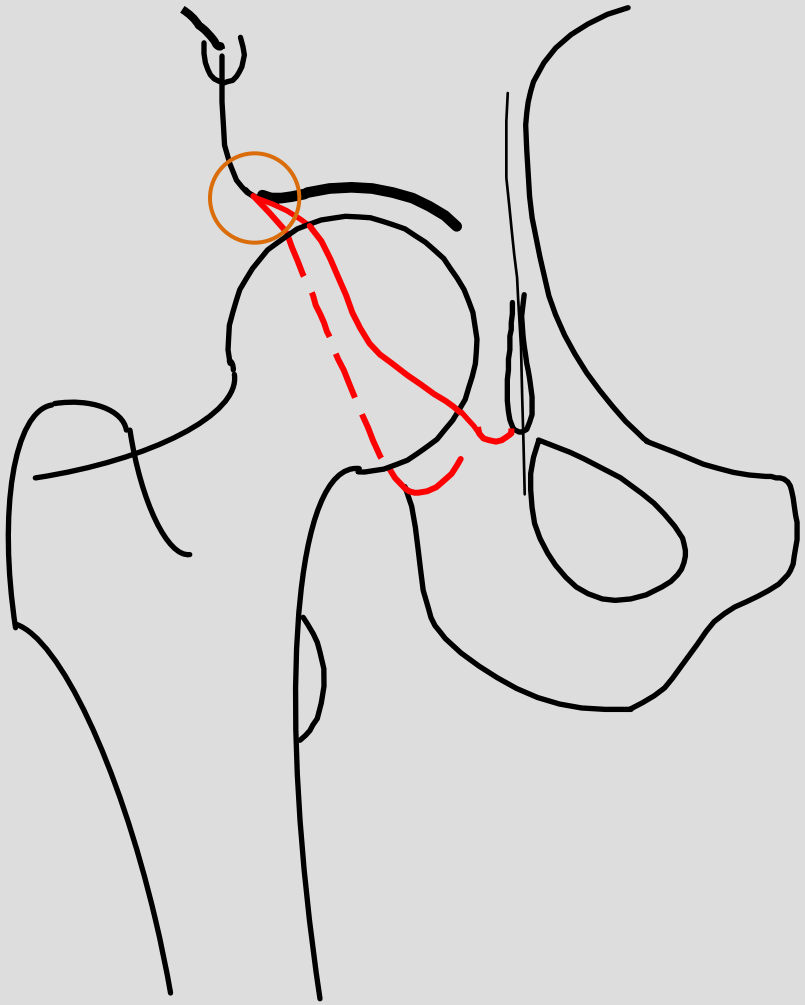
Posterior and anterior wall of the acetabulum



Posterior and anterior wall of the acetabulum end at the same proximal point

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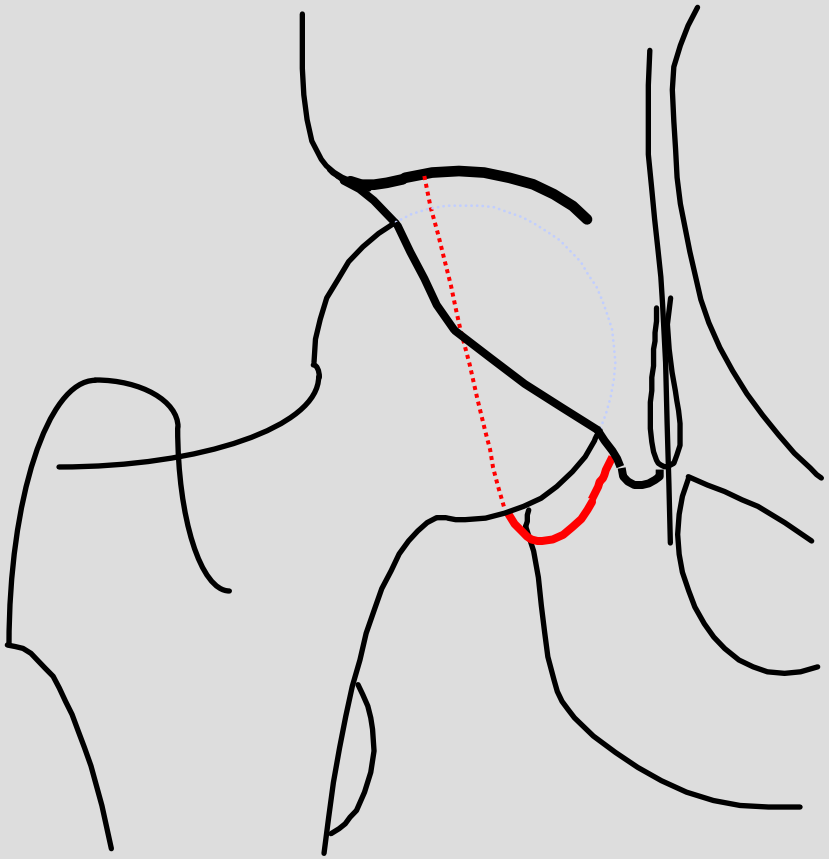
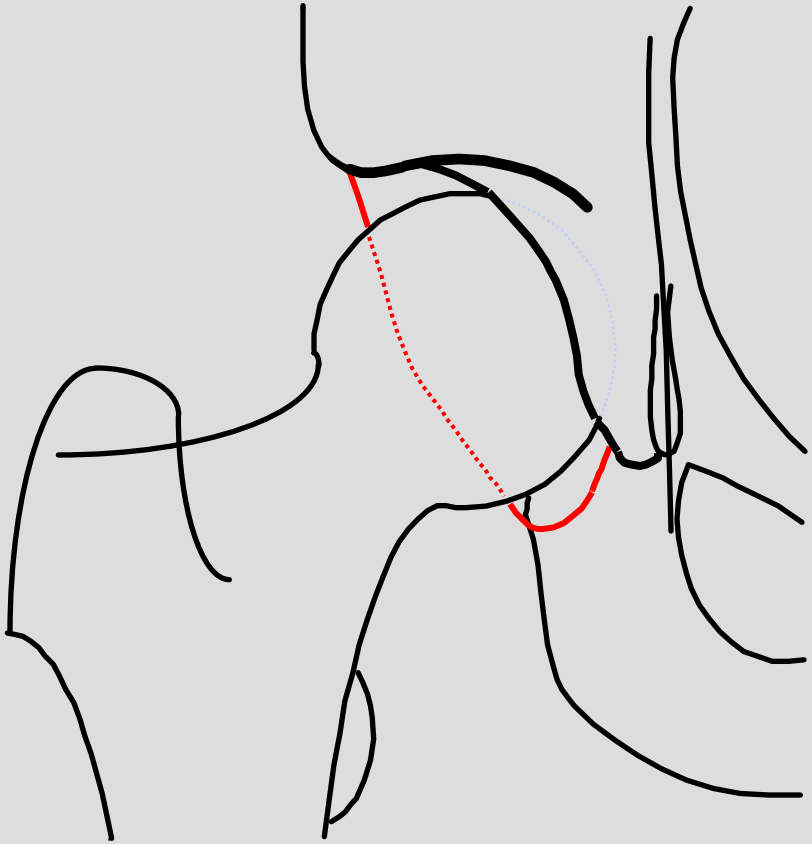
Retroversion



Anteversion



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Torsion

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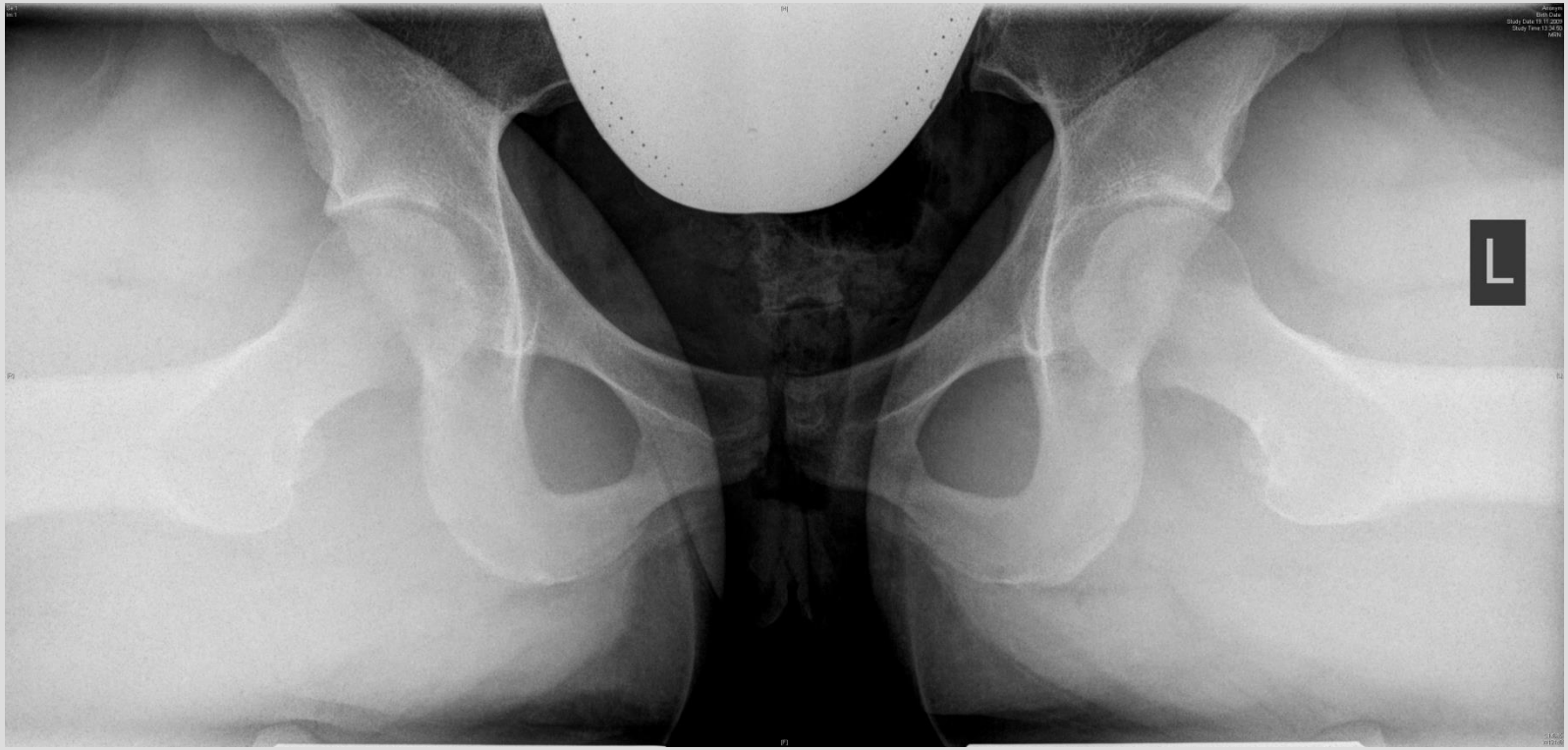

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„Pistol-grip deformity“

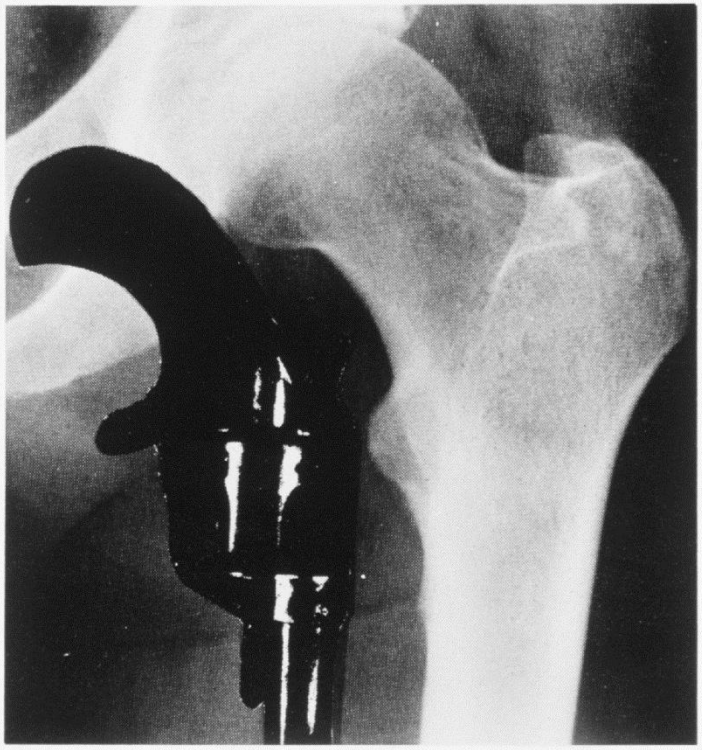

Fig. 14-9. Pistol-grip deformity.

D.A. Goodman

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"... that the changes were better visualized on the lateral radiograph with the beam directly perpendicular to the axis of the neck..."

JBJS 79-A, 1997

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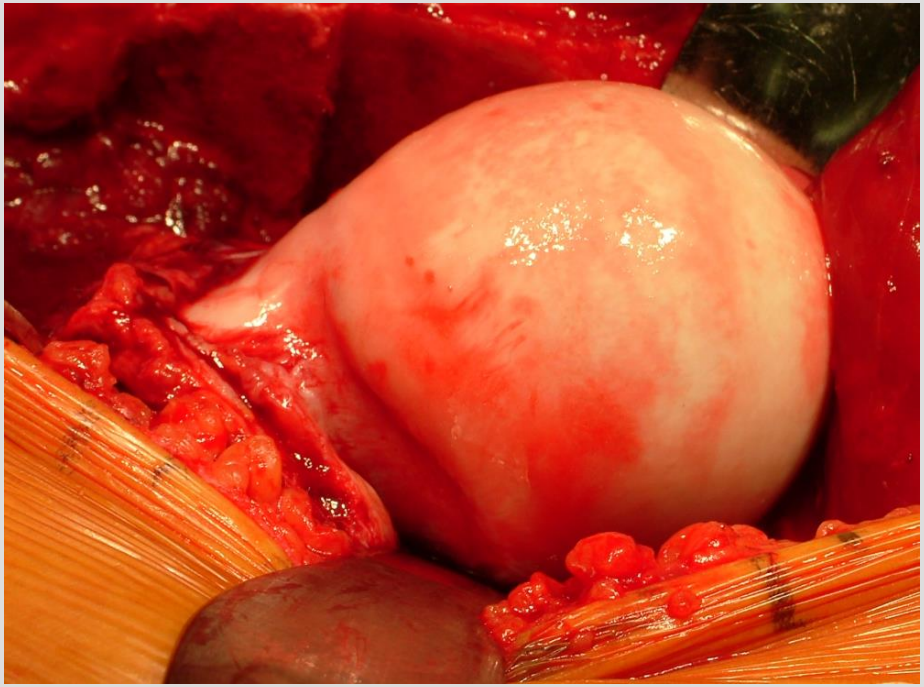
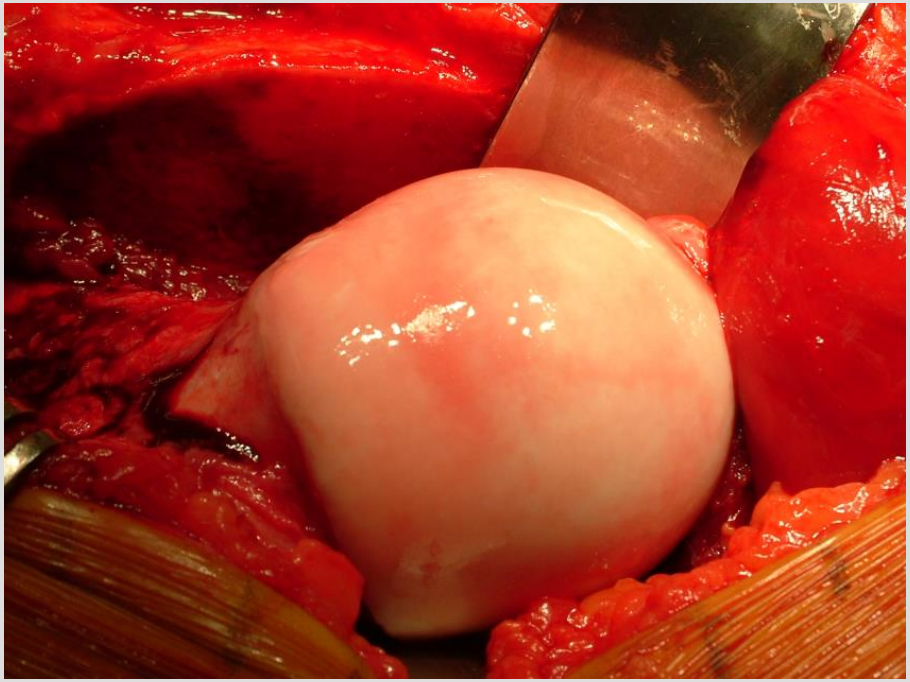
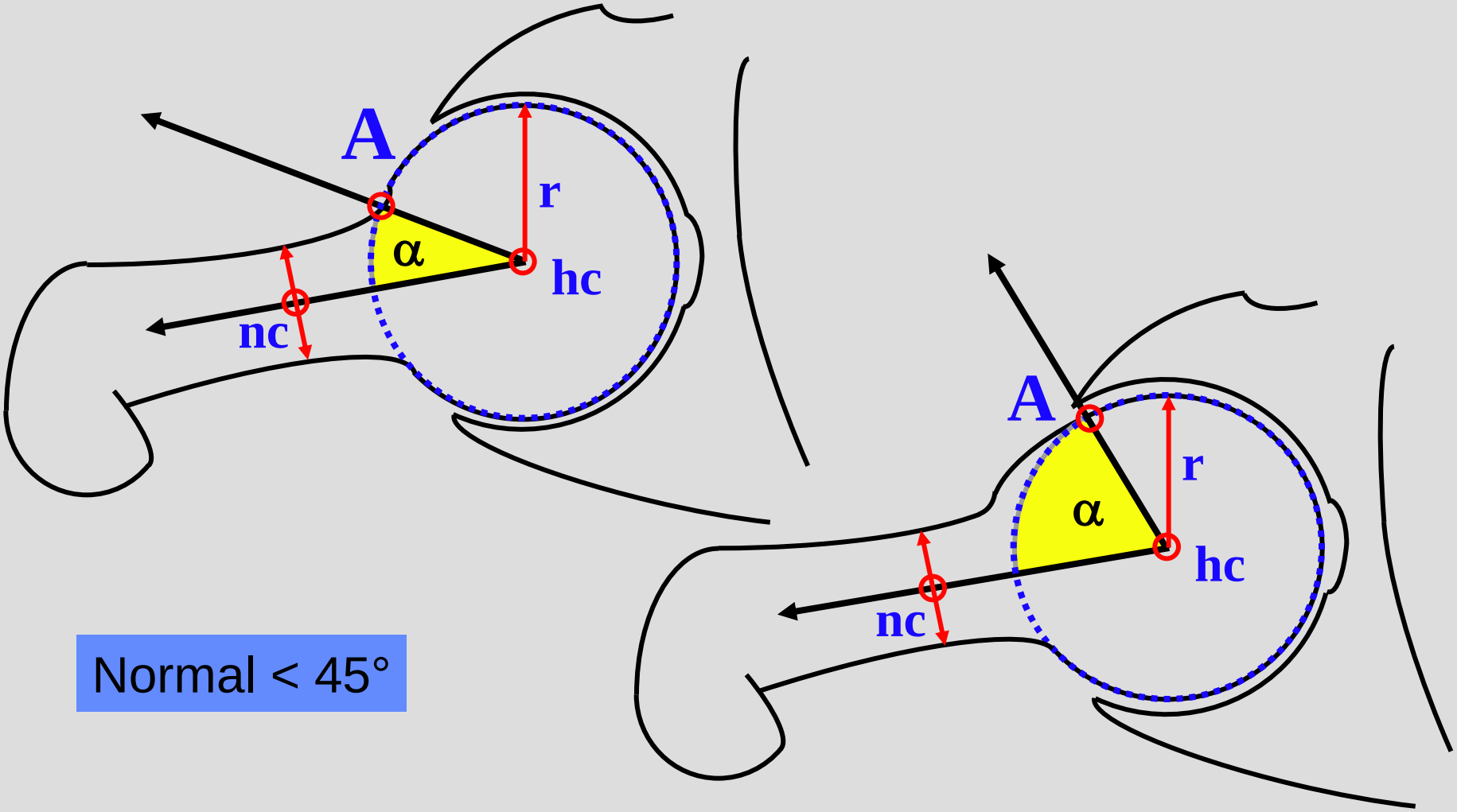
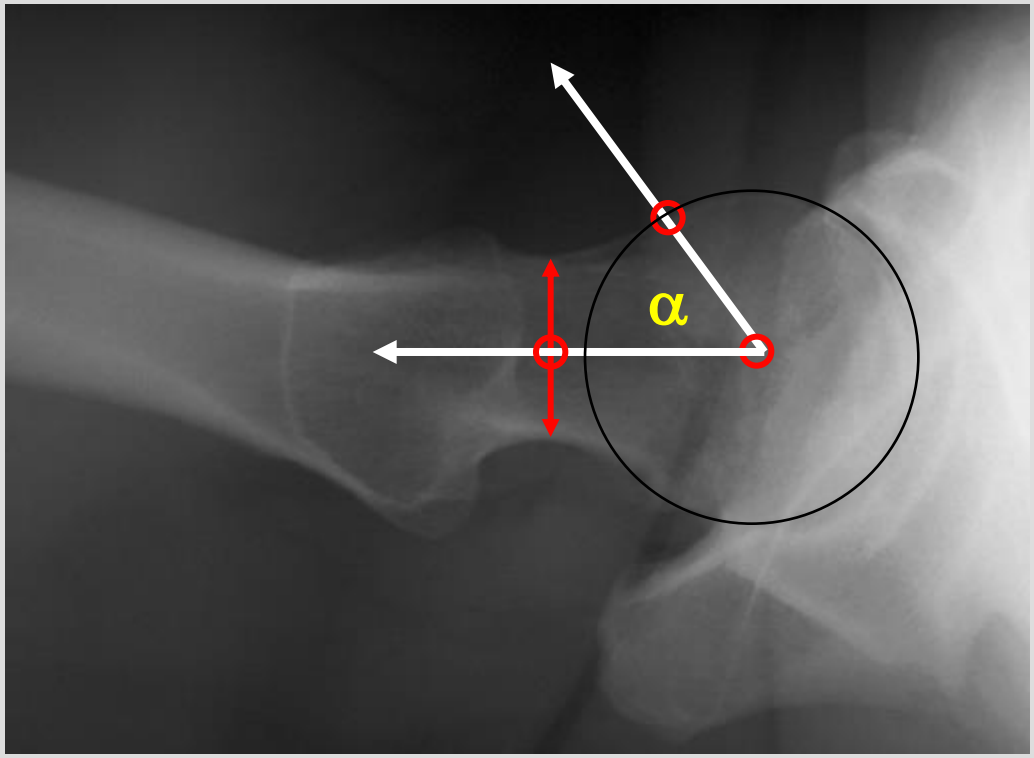






Normal < 45°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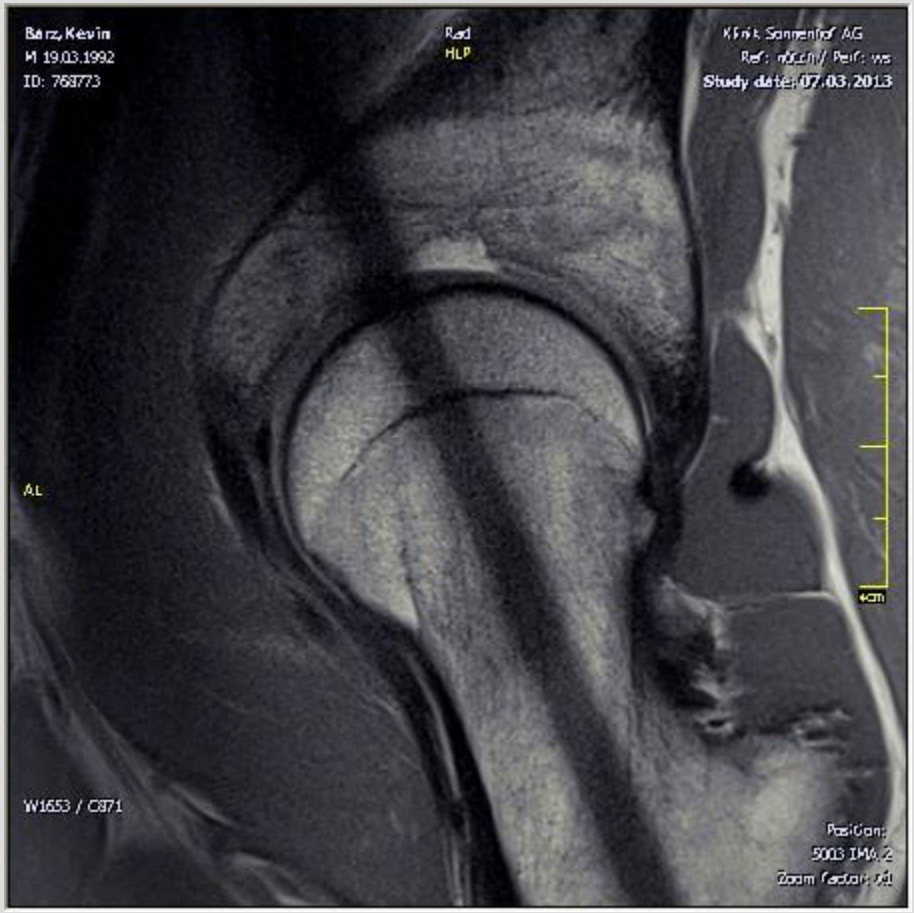

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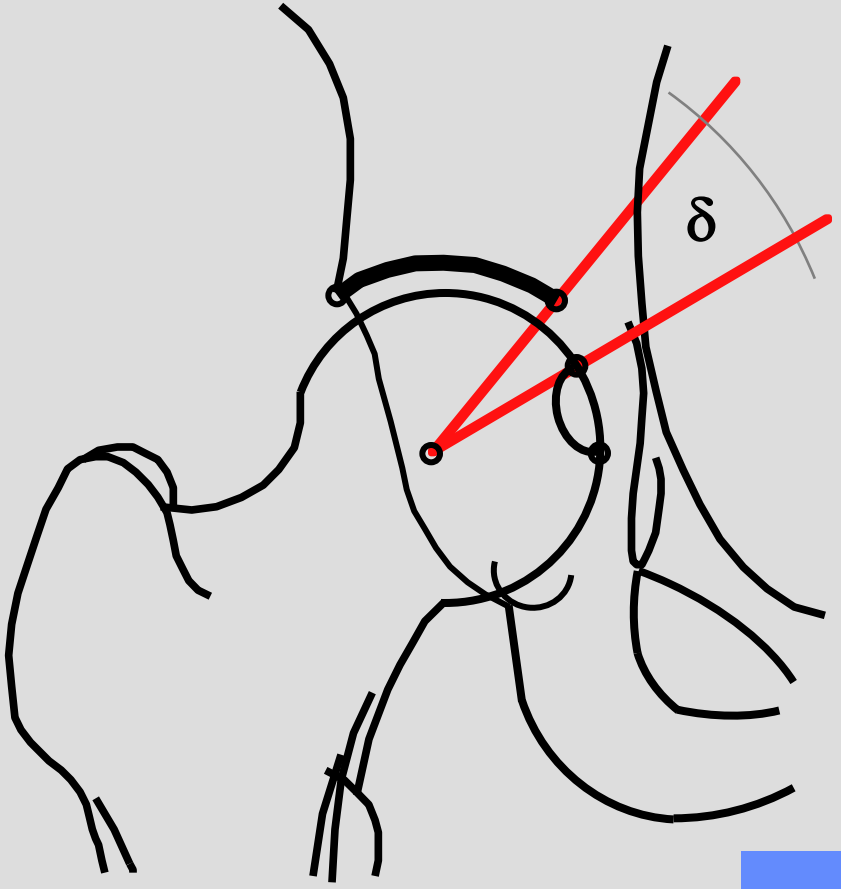
Fovea



normal: >20°

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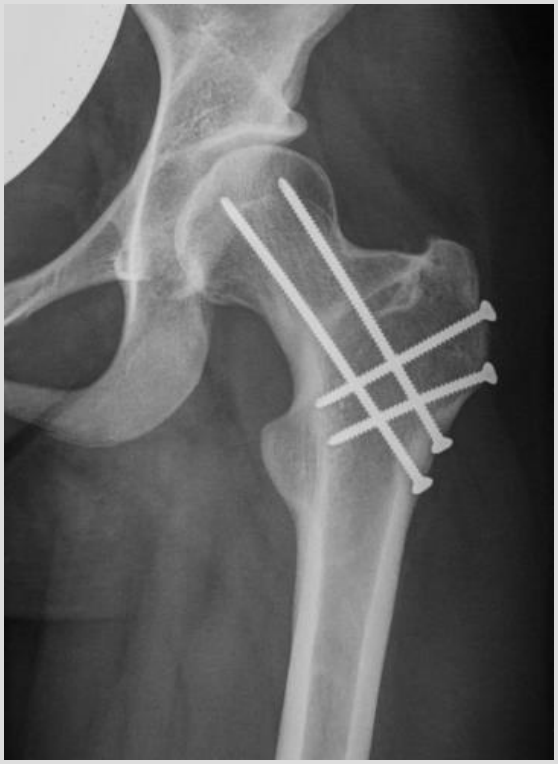

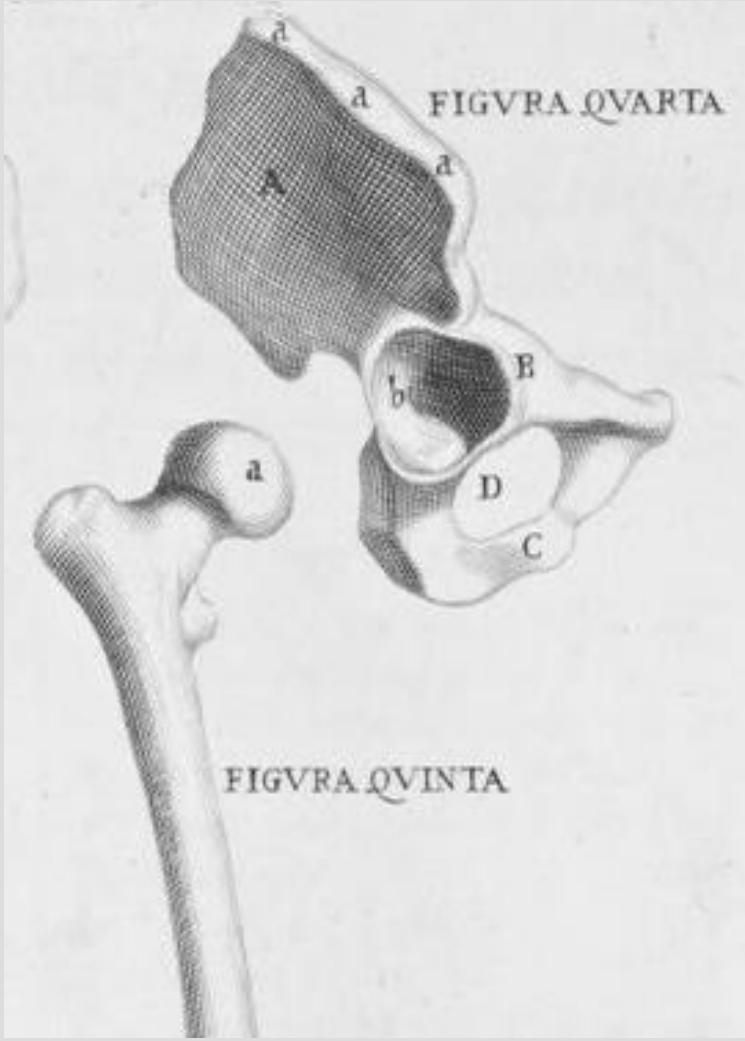
FIGVRA QVARTA
d
d
d
A
B
b
a
D
C
FIGVRA QVINTA

Problem

The common values describe the anatomy of only one part of the joint. Their correlation with the real function may be limited.

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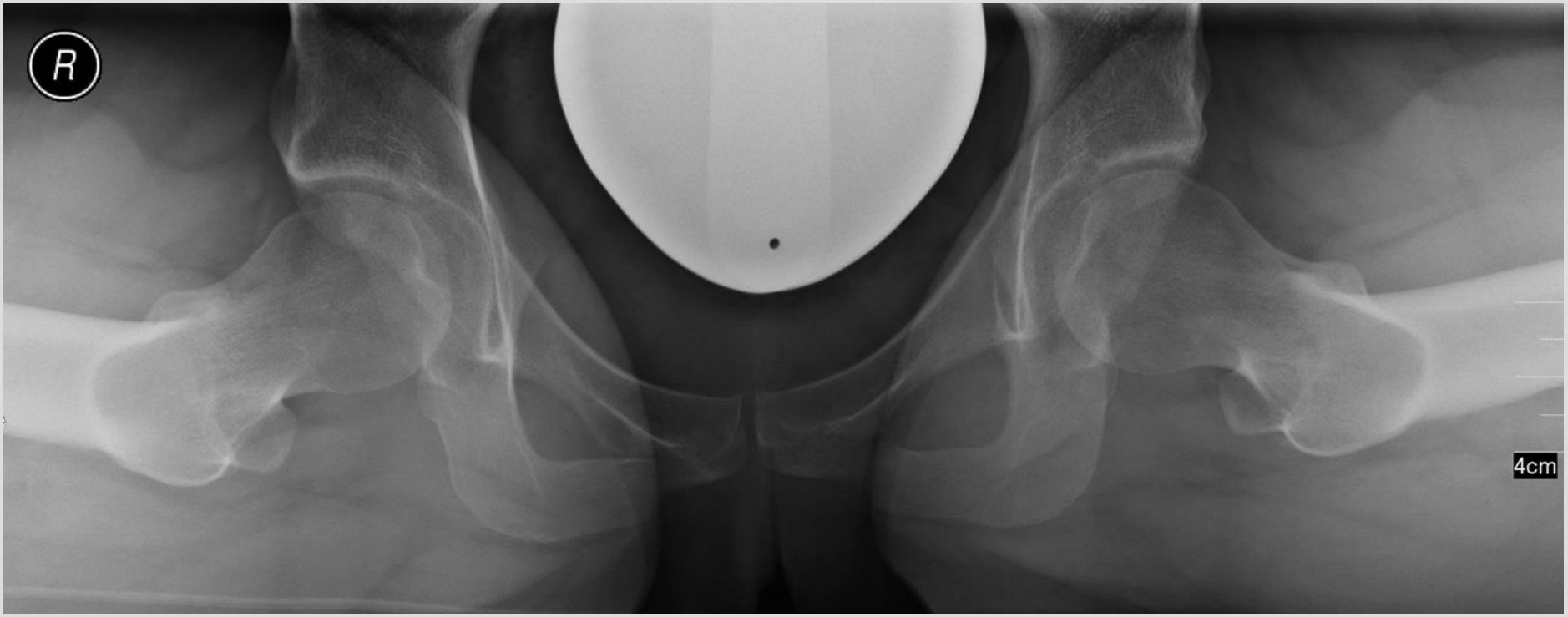

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Thank you!