What is Possible if one understands the circulation of blood to the femoral head.

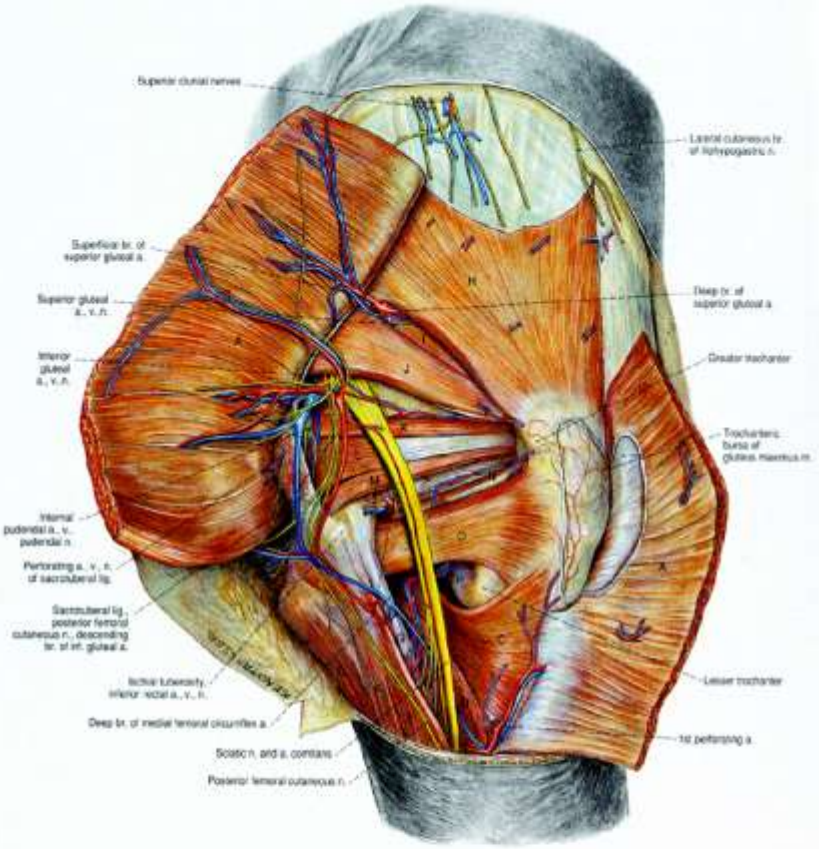
- Surgical Dislocation of the hip
- Neck Lengthening
- Neck Osteotomy
- Acetabuloplasty
- Neck Plasty

Jeff Mast M.D.
AO Center
Mammoth Lakes
California

Bioregenerative Surgery= Applied Biomechanics

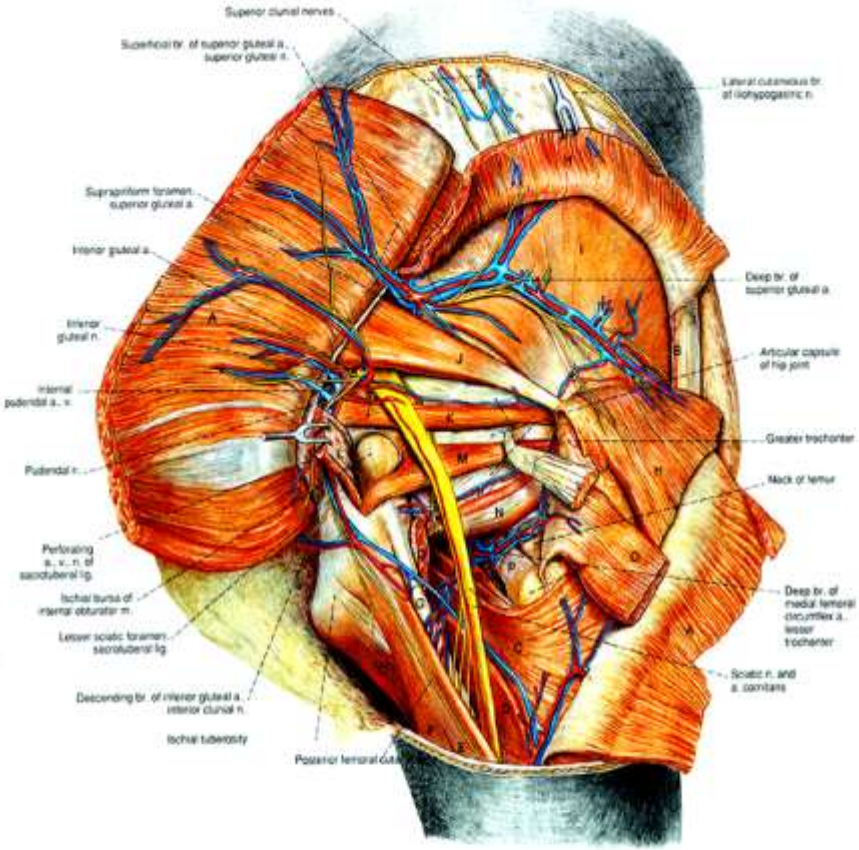
Letournel*
Pauwels
Maquet*
Mueller*
Marti*

Schneider*
Bombelli*
Wagner
Weber*
Ganz**



A = Gluteus maximus m.
C = Adductor minimus m.
D = Adductor magnus m.
E = Long head of biceps femoris m.
F = Semitendinosus m.
G = Semimembranosus m.
H = Gluteus medius m.
I = Gluteus maximus m.
J = Piriformis m.
K = Superior gemellus m.
L = Internal obturator m.
M = Inferior gemellus m.
N = External obturator m.
O = Quadratus femoris m.
P = Iliopsoas m.

Fig. 327
Gluteal region.
3: The gluteus maximus m. is cut near the trochanter and reflected, bringing into view the points of exits of vessels and nerves.



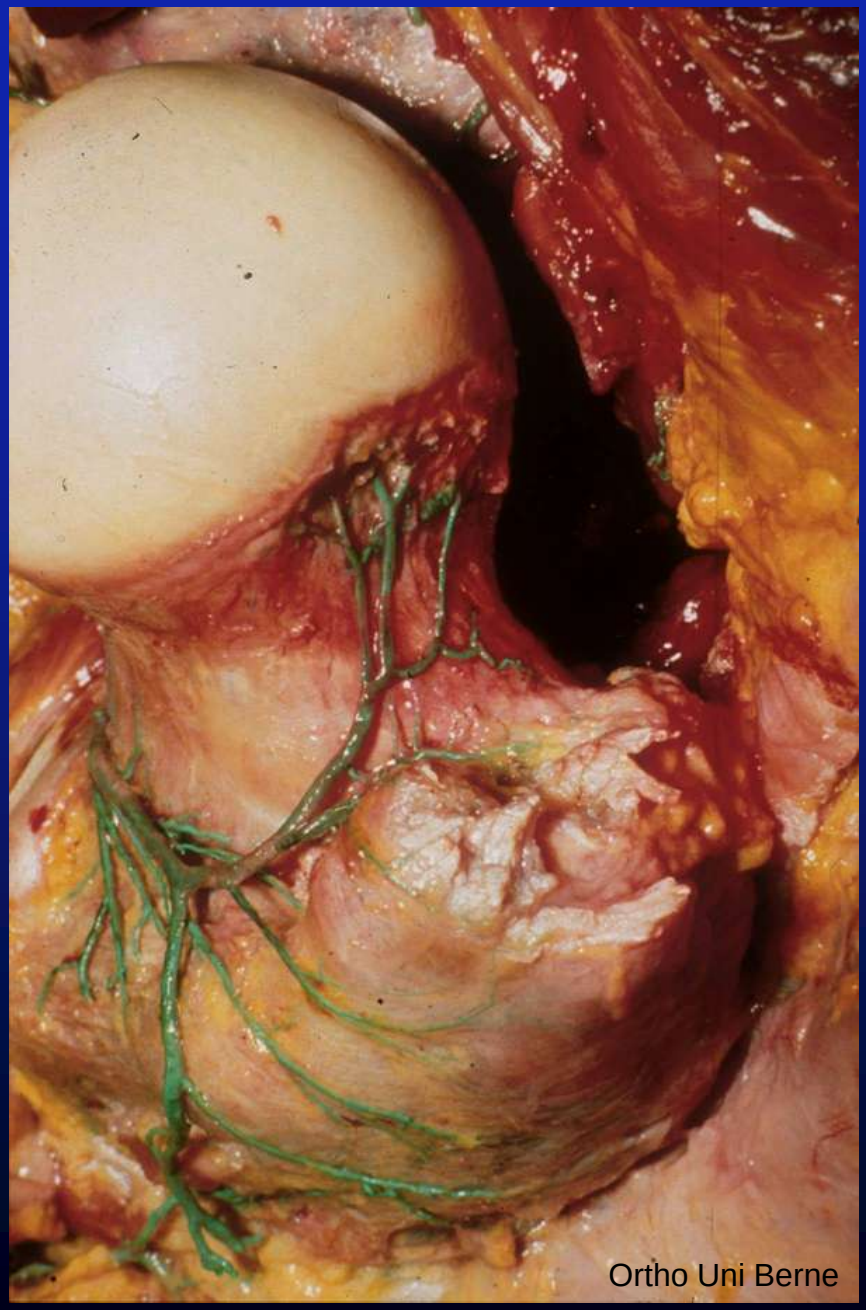
A = Gluteus maximus m.
B = Tensor fasciae latae m.
C = Adductor minimus m.
D = Adductor magnus m.
E = Long head of biceps femoris m.
F = Semitendinosus m.
G = Semimembranosus m.
H = Gluteus medius m.
I = Gluteus maximus m.
J = Piriformis m.
K = Superior gemellus m.
L = Internal obturator m.
M = Inferior gemellus m.
N = External obturator m.
O = Quadratus femoris m.
P = Iliopsoas m.
R = Adductor brevis m.
S = Pectineus m.

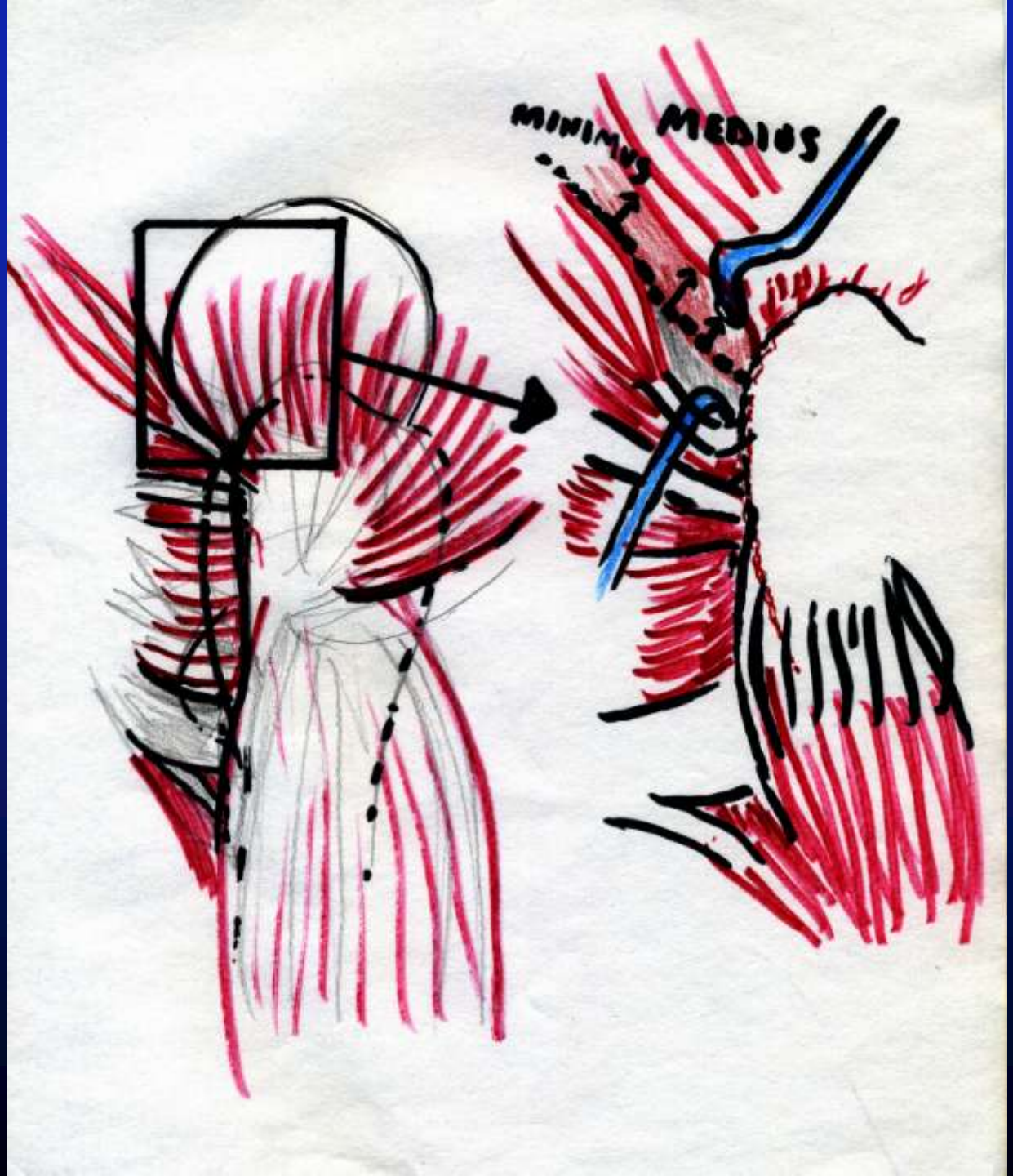
Fig. 328
Gluteal region.
4: Cutting the gluteus medius m. affords a view of the deep branches of the superior gluteal artery and nerve. The capsule of the hip joint is seen after cutting the internal obturator m.

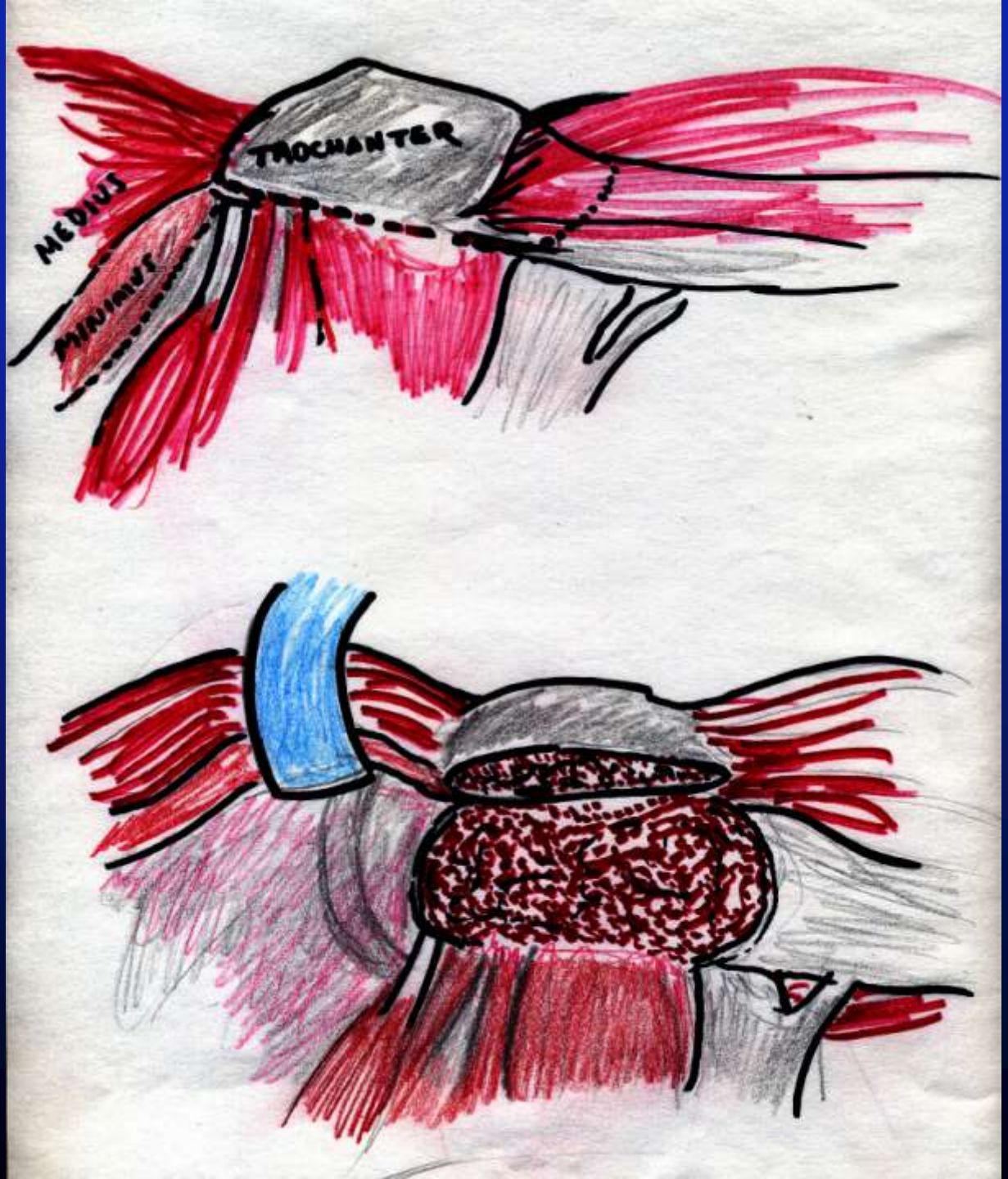
Anatomical considerations I

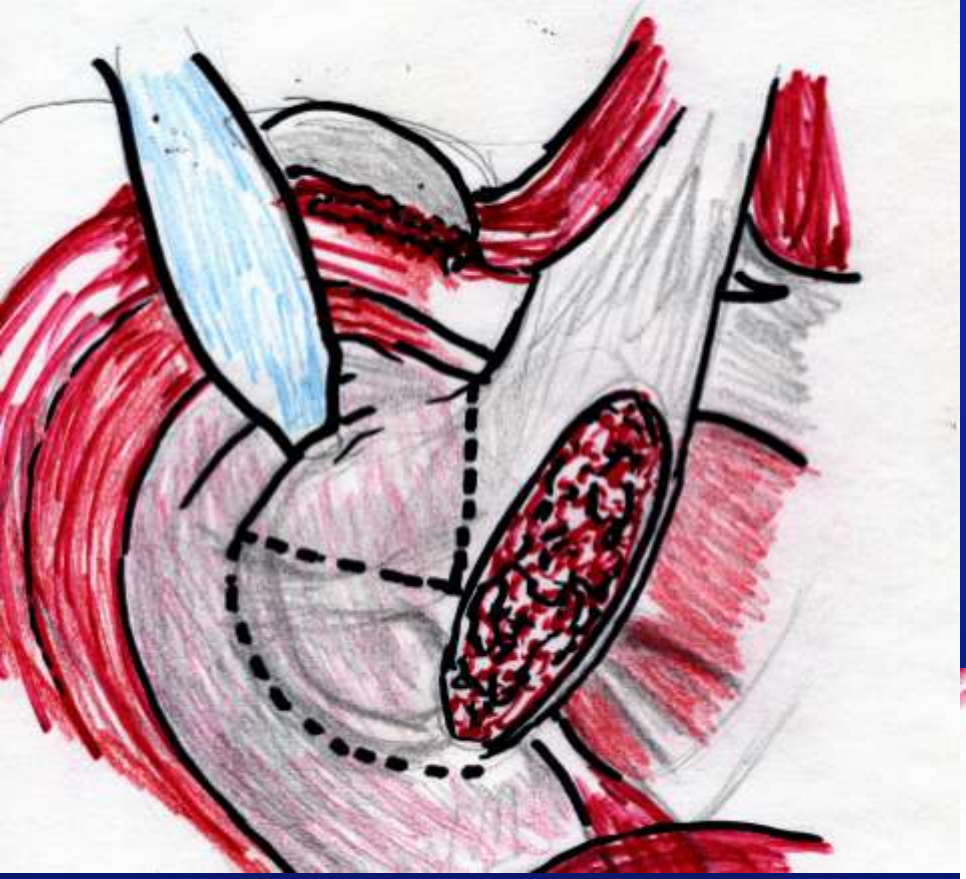
Blood supply to the femoral head sufficient by the medial femoral circumflex artery

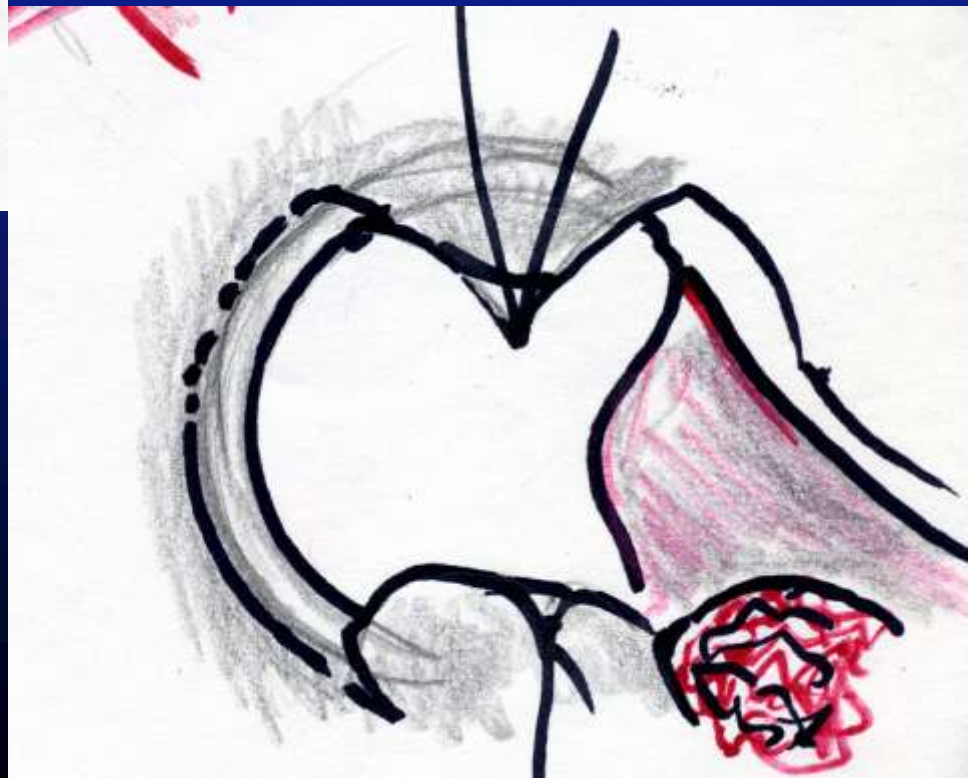
Truetta and Harrison, JBJS, 35-B:442, 1953;
Sevitt and Thompson, JBJS, 47-B:560, 1965.

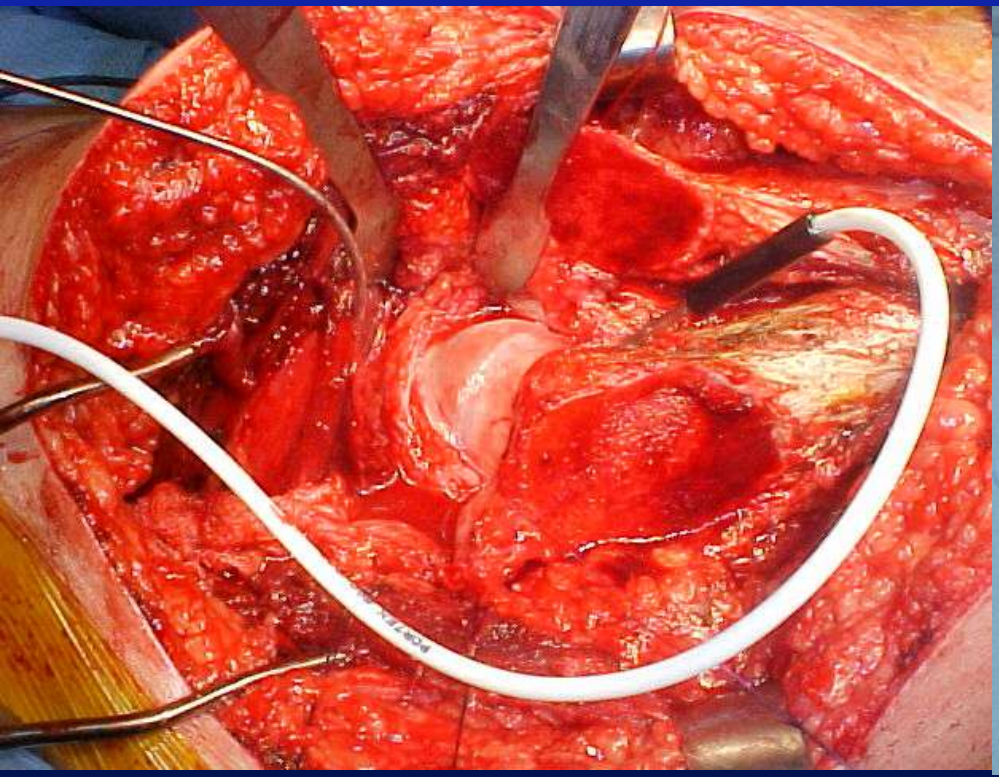


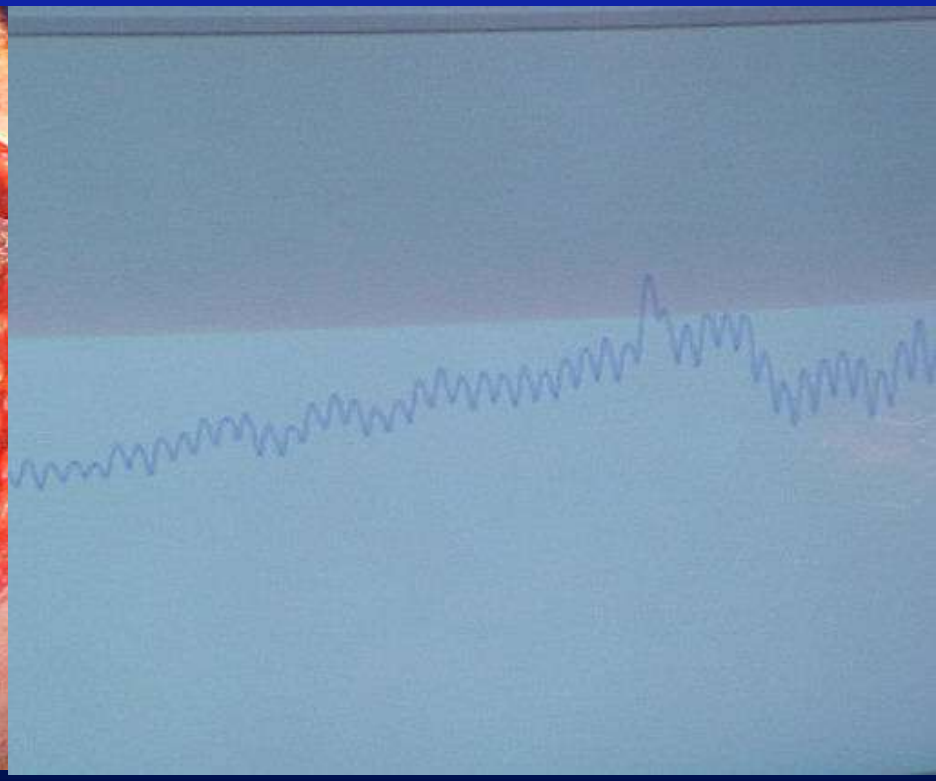

MINIMUS
MEDIUS


TROCHANTER
MEDIUS
MINIMUS

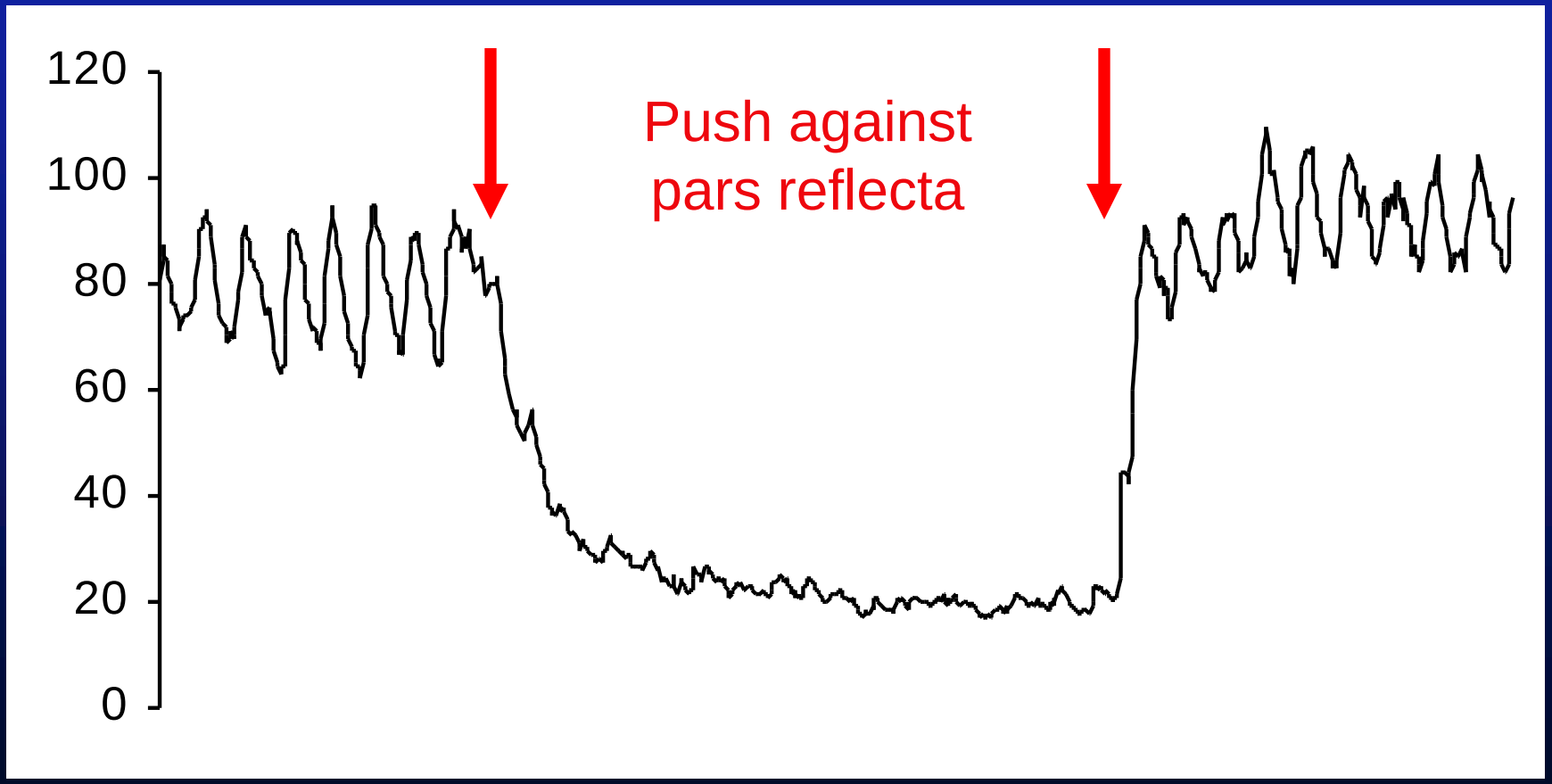


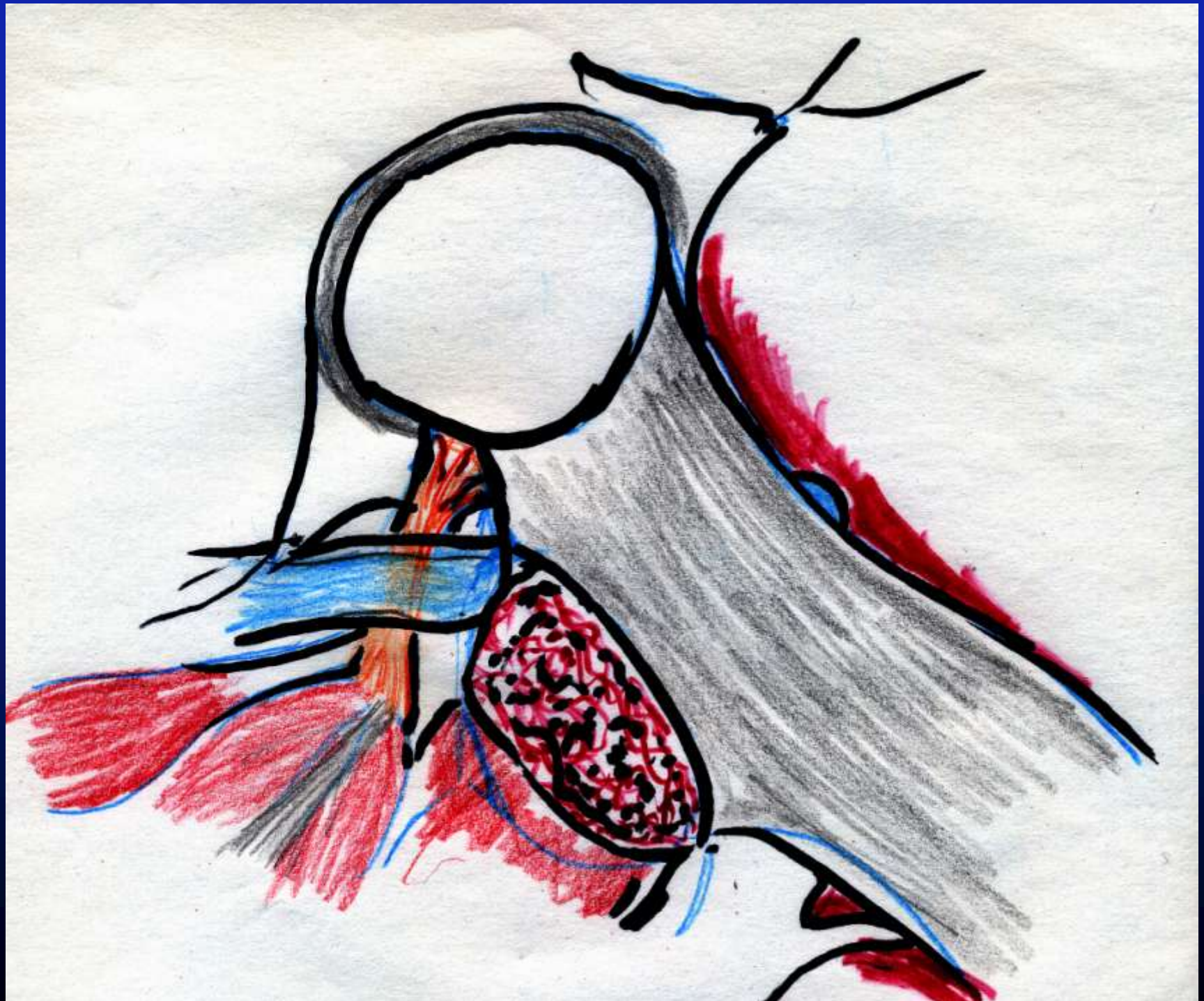


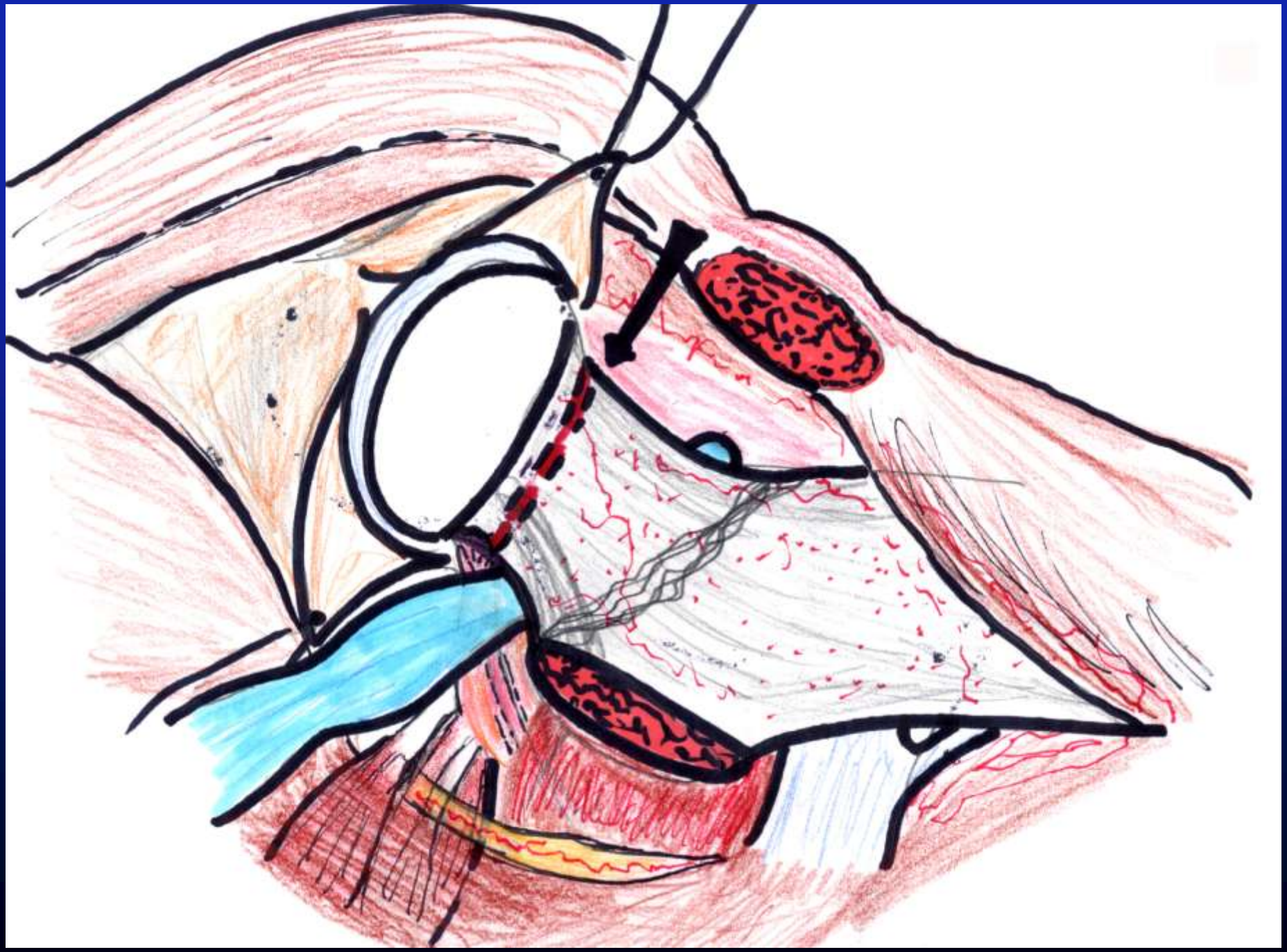


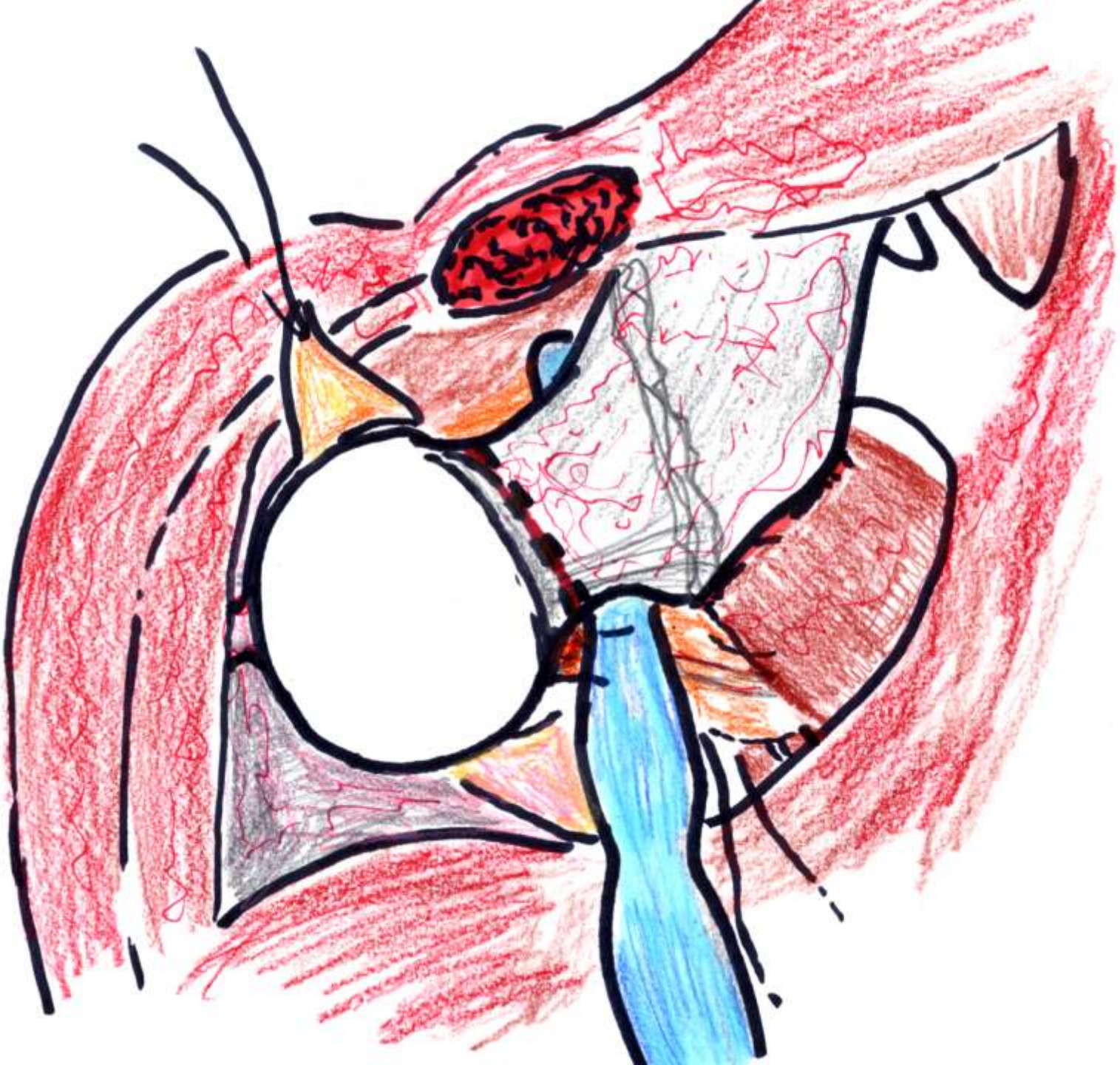


Assessment of blood flow by LDF









Actual and Relative Femoral Neck Lengthening

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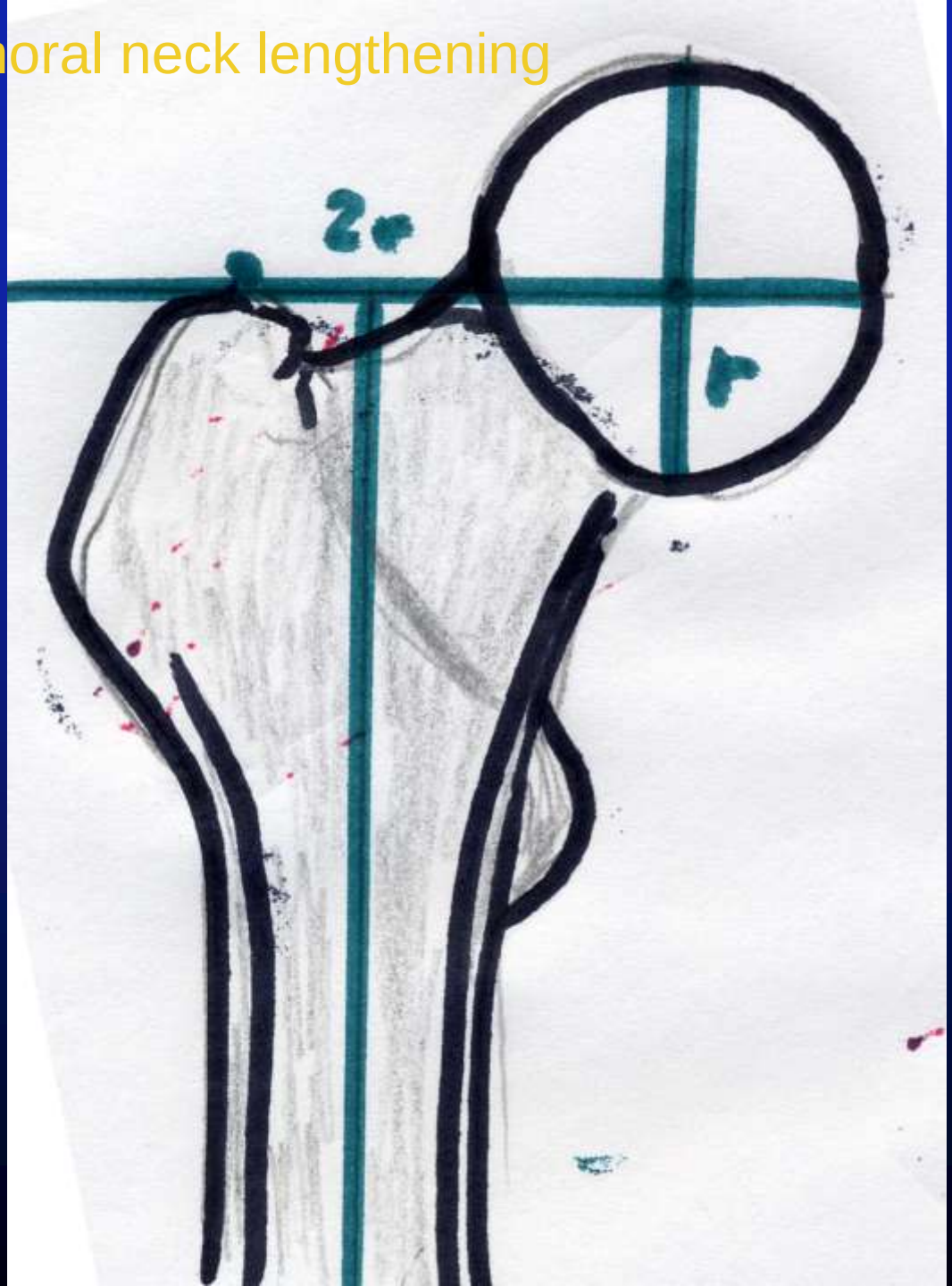
AO Center

Mammoth Lakes, California

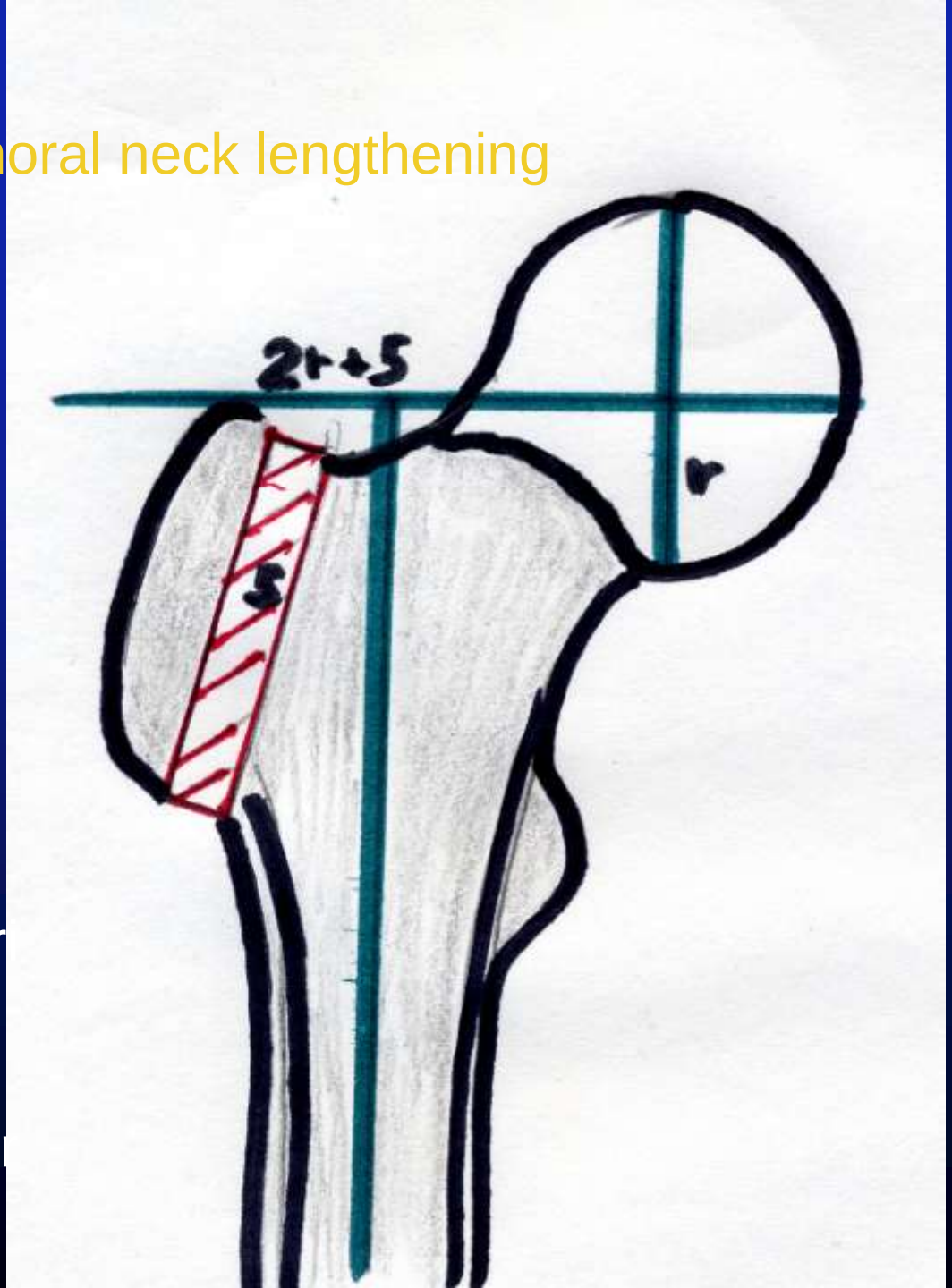
Absolute and Relative Neck Lengthening of The Hip

- Perthes and Perthes like conditions
- Old femoral neck fractures
- Proximal femoral focal deficiency

Relative femoral neck lengthening

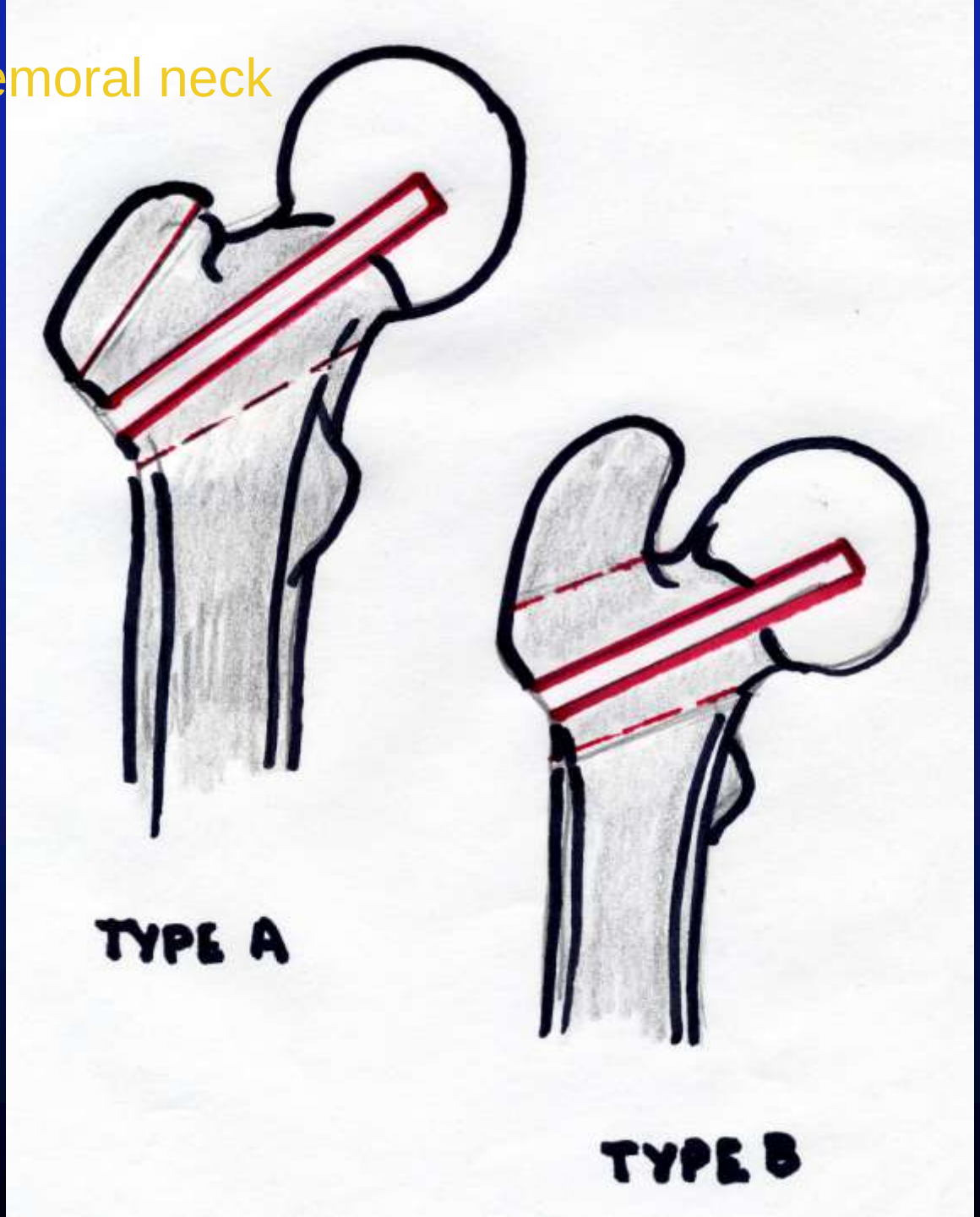


Relative femoral neck lengthening

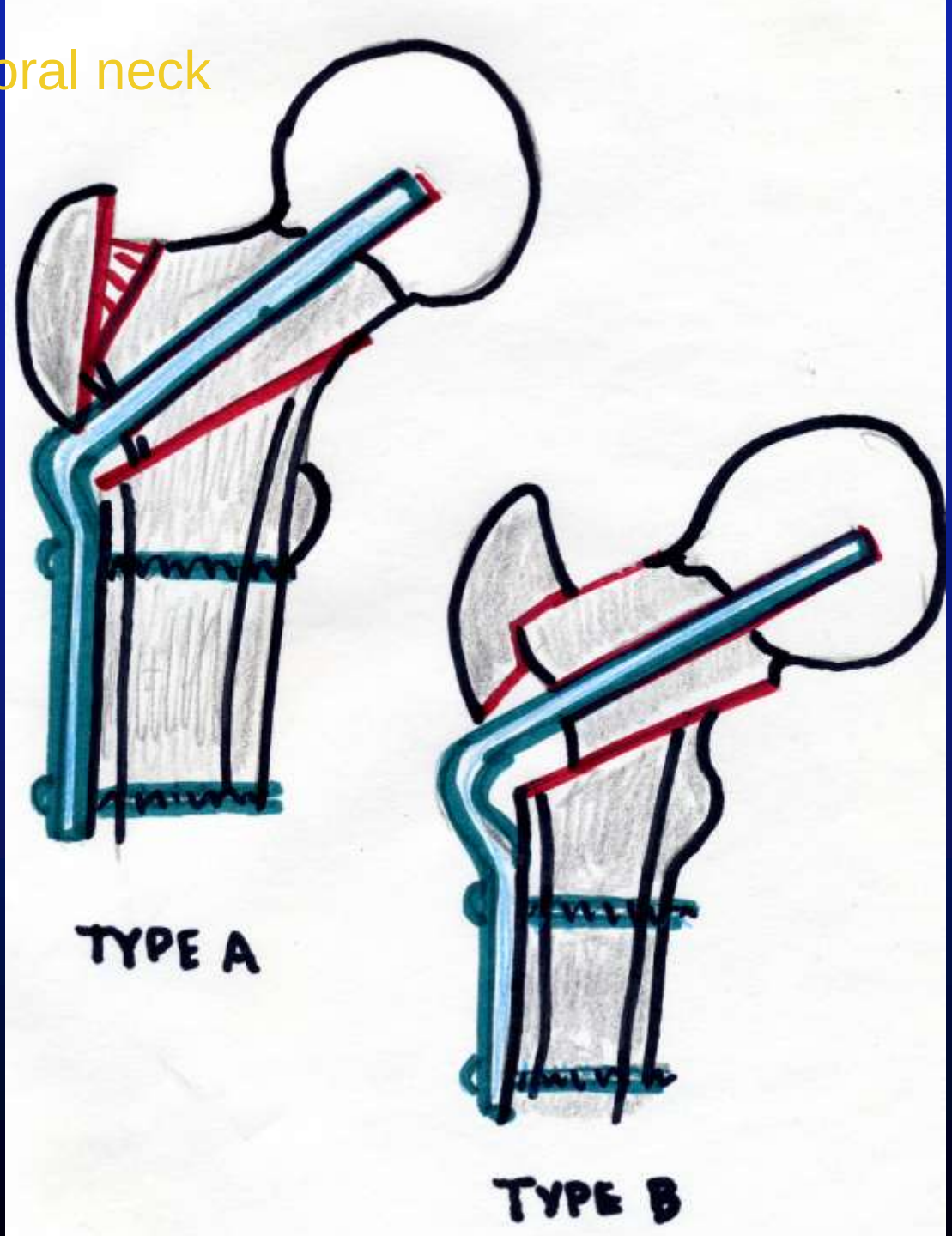


H. Wagner
The
Intertrochanter
c
Osteotomy
Edit. Schatzke

Absolute Femoral neck lengthening



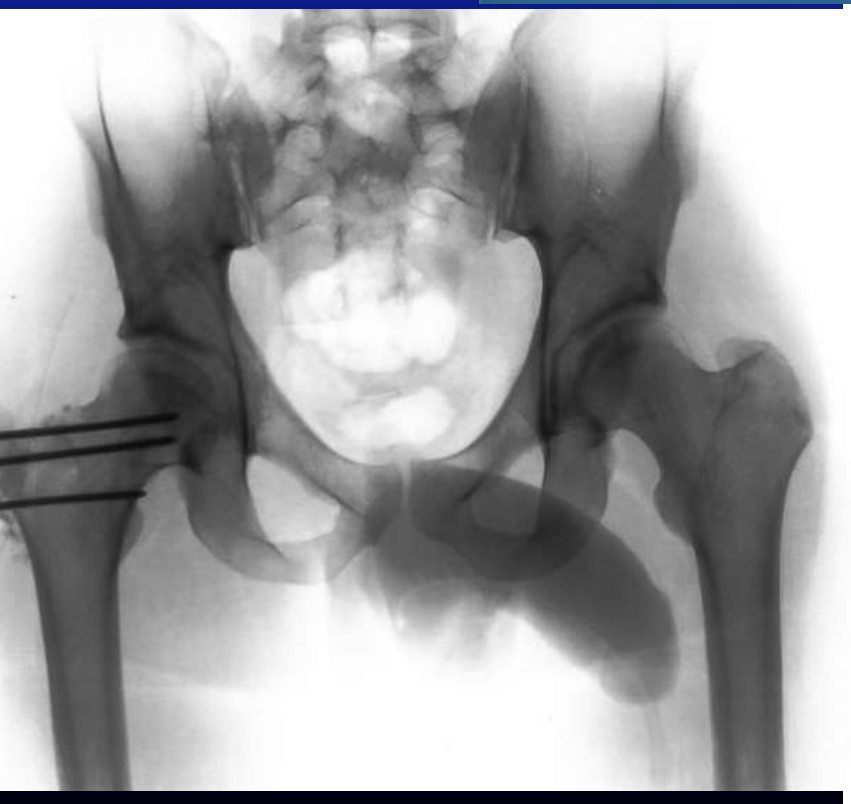
Absolute femoral neck lengthening



Morscher, E.
Basle, Switz.
“double inter
Trochanteric
osteotomy

Relative Neck Lengthening

- 18 year old footballer
- Fastest man on the team.
- Right hip pain progressive, activity related!
- Father is an orthopedic surgeon.

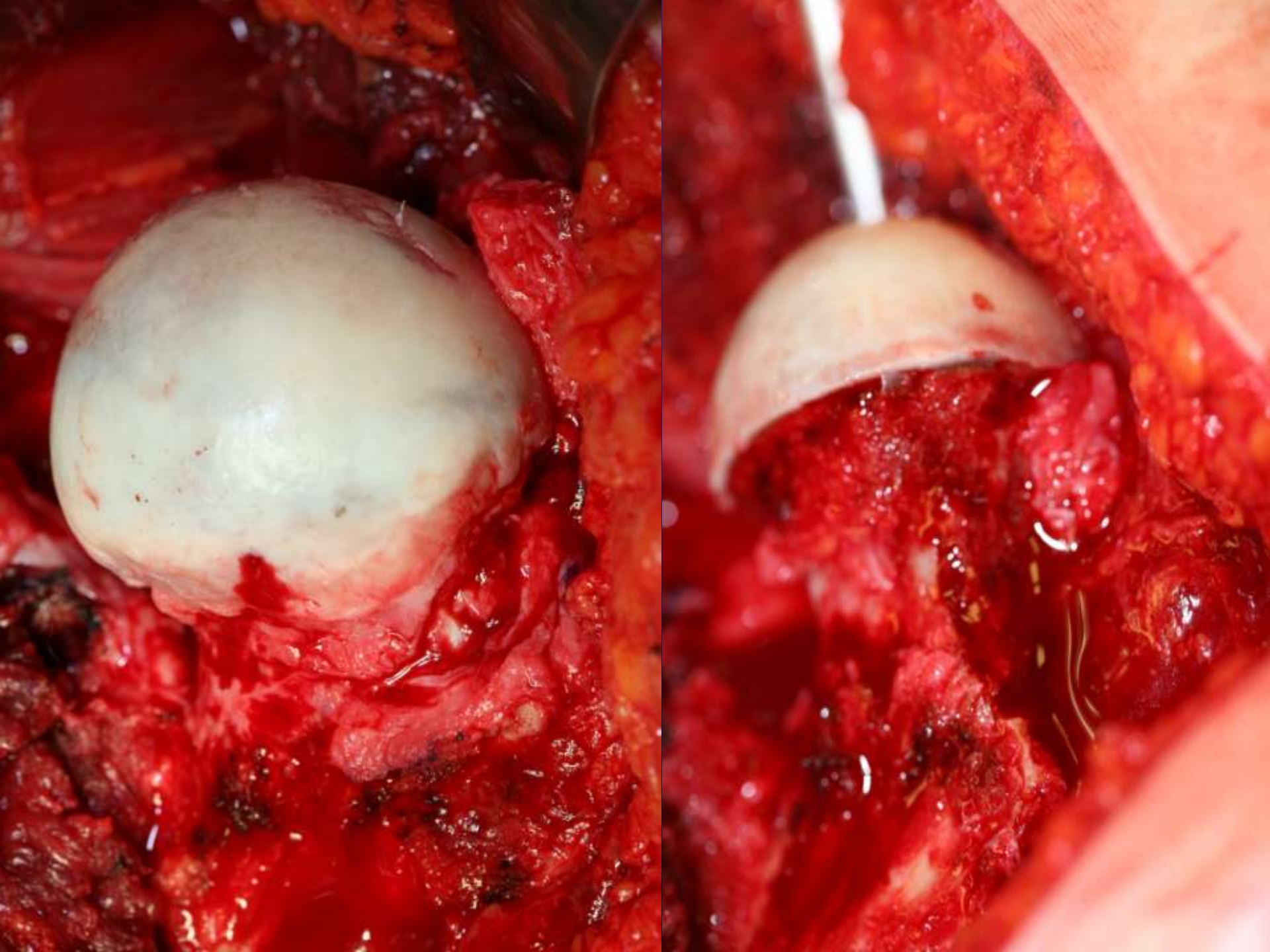


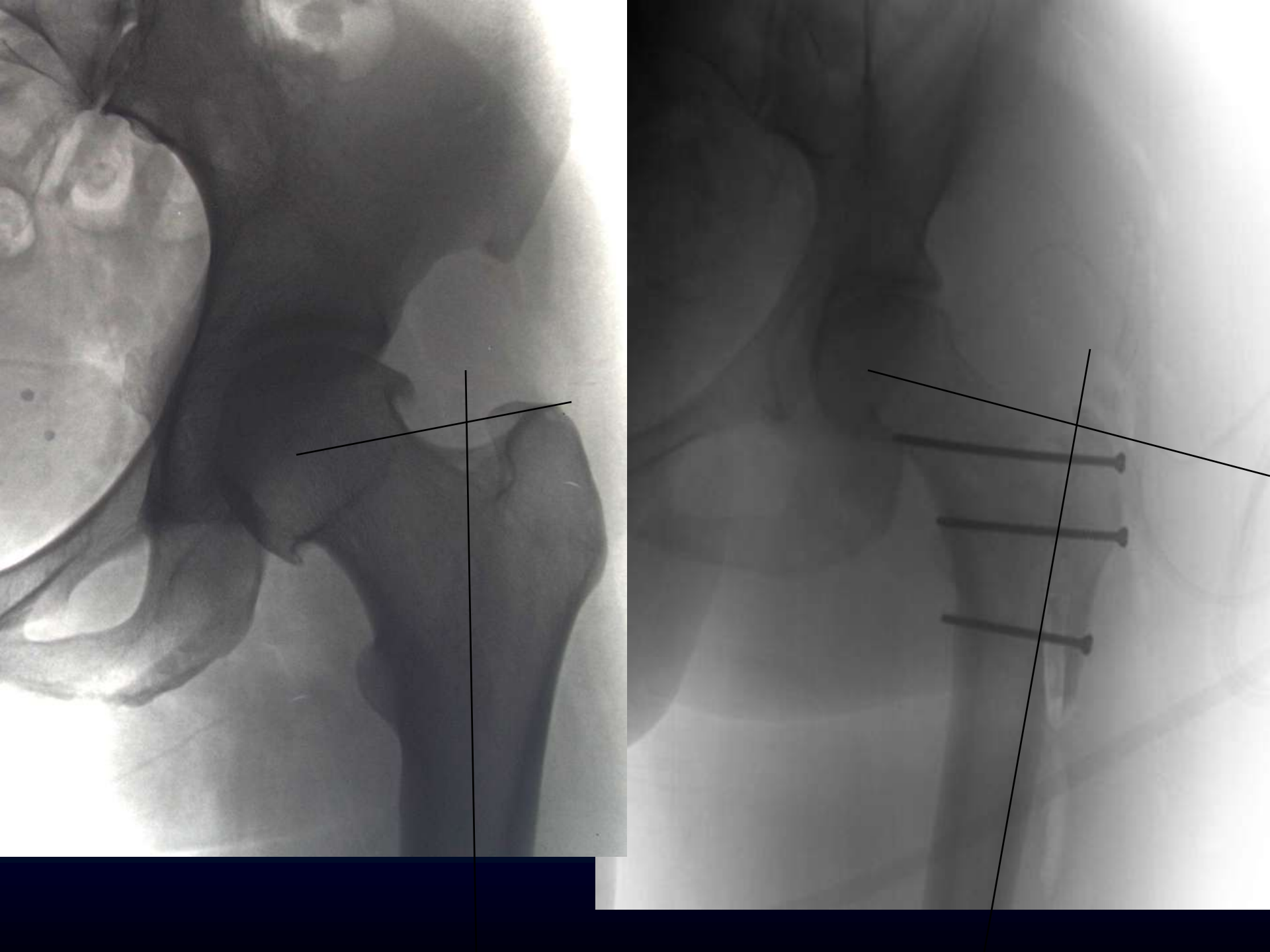

R
42


R
42

FAI

28 year old female with 5 year history of left > Right hip pain

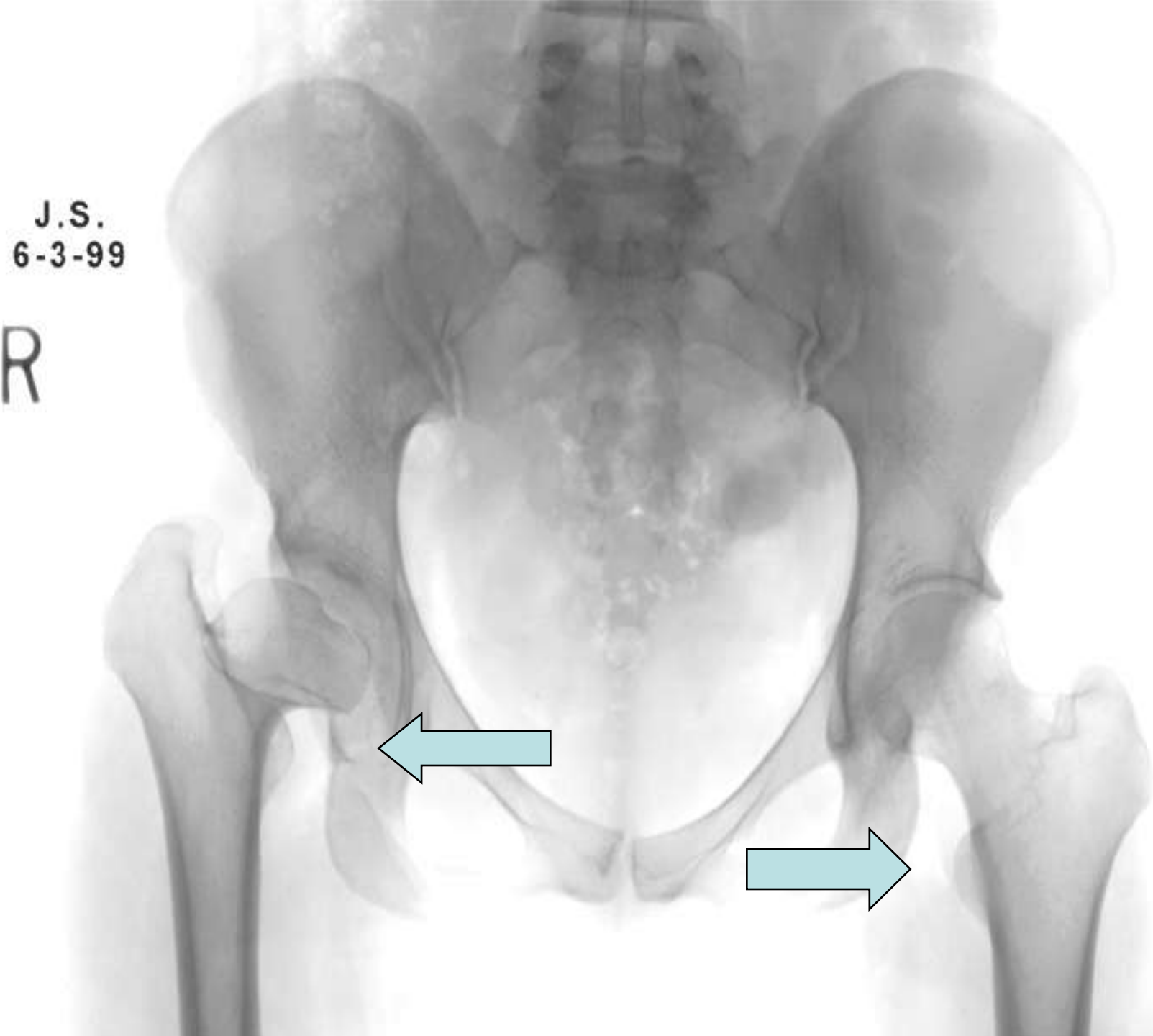




Absolute Femoral neck Lengthening

- 19 year old girl
- Proximal Focal Femoral deficiency
- Right hip pain
- Previous epiphysiodesis of contralateral distal femoral physis to decrease leg length discrepancy

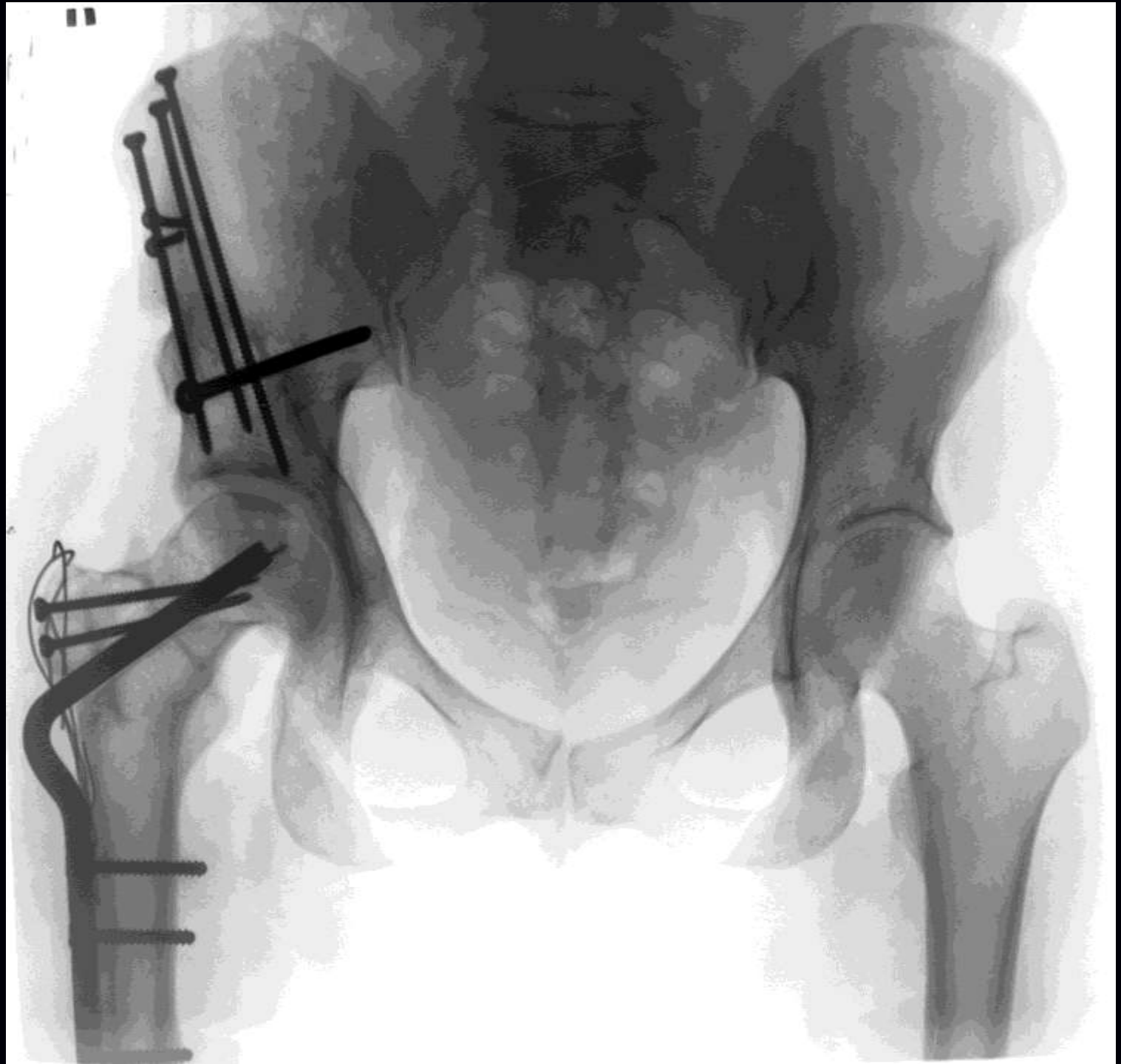

J.S.
6-3-99

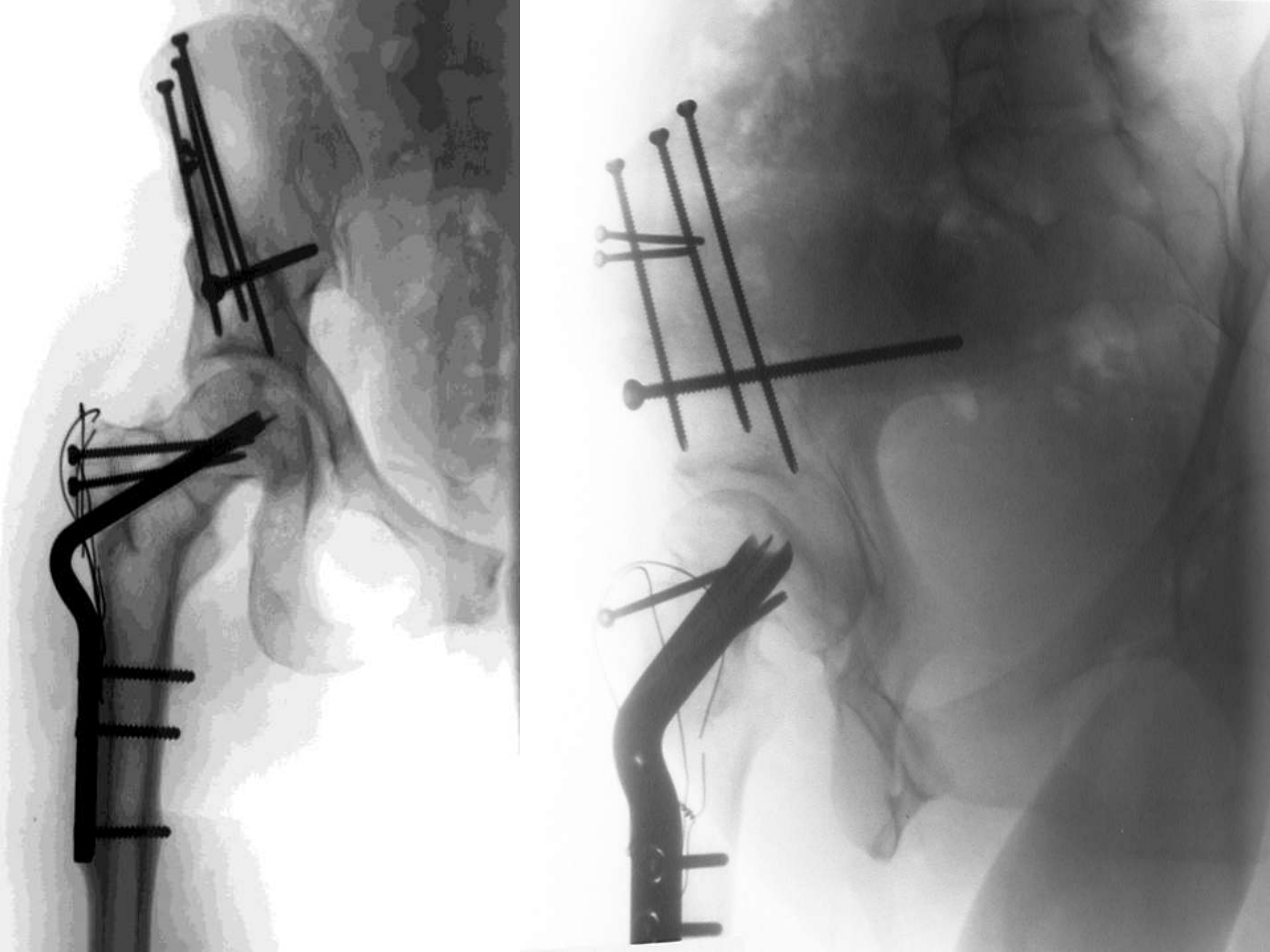

J.S.
6-3-99
R

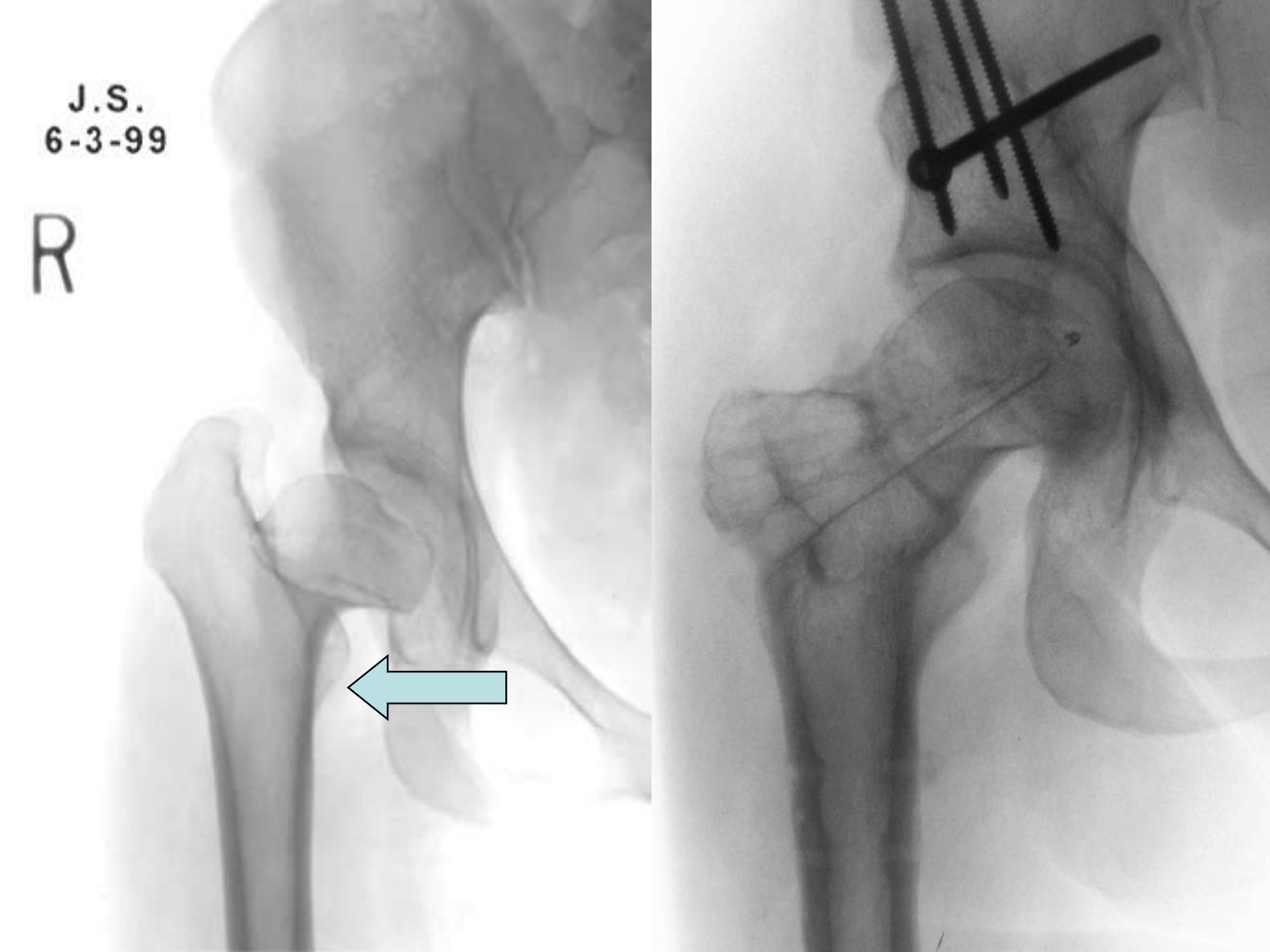

J.S.
6-3-99


J.S.
11-25-98


J.S.
8-26-99
11 wks PO



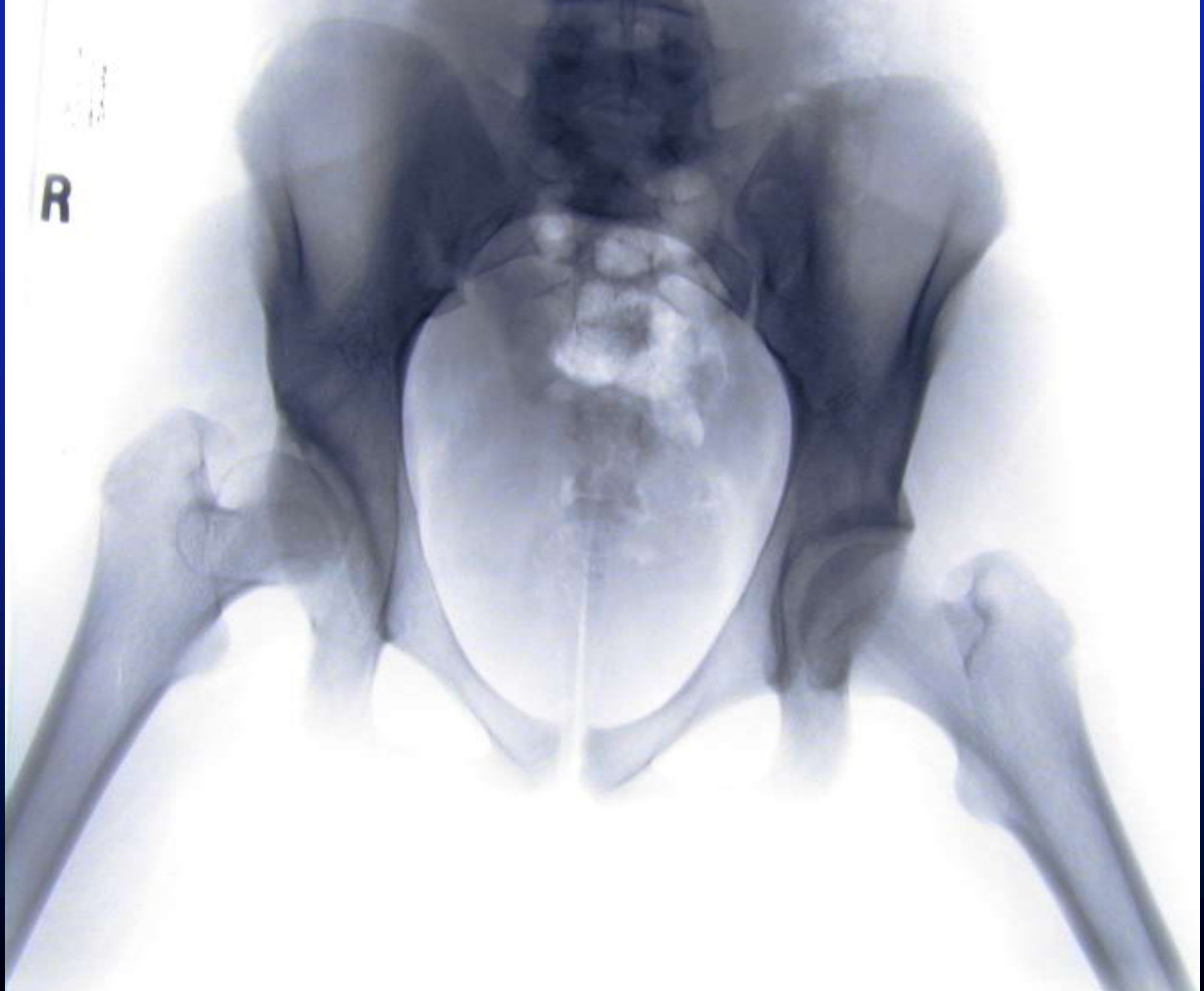


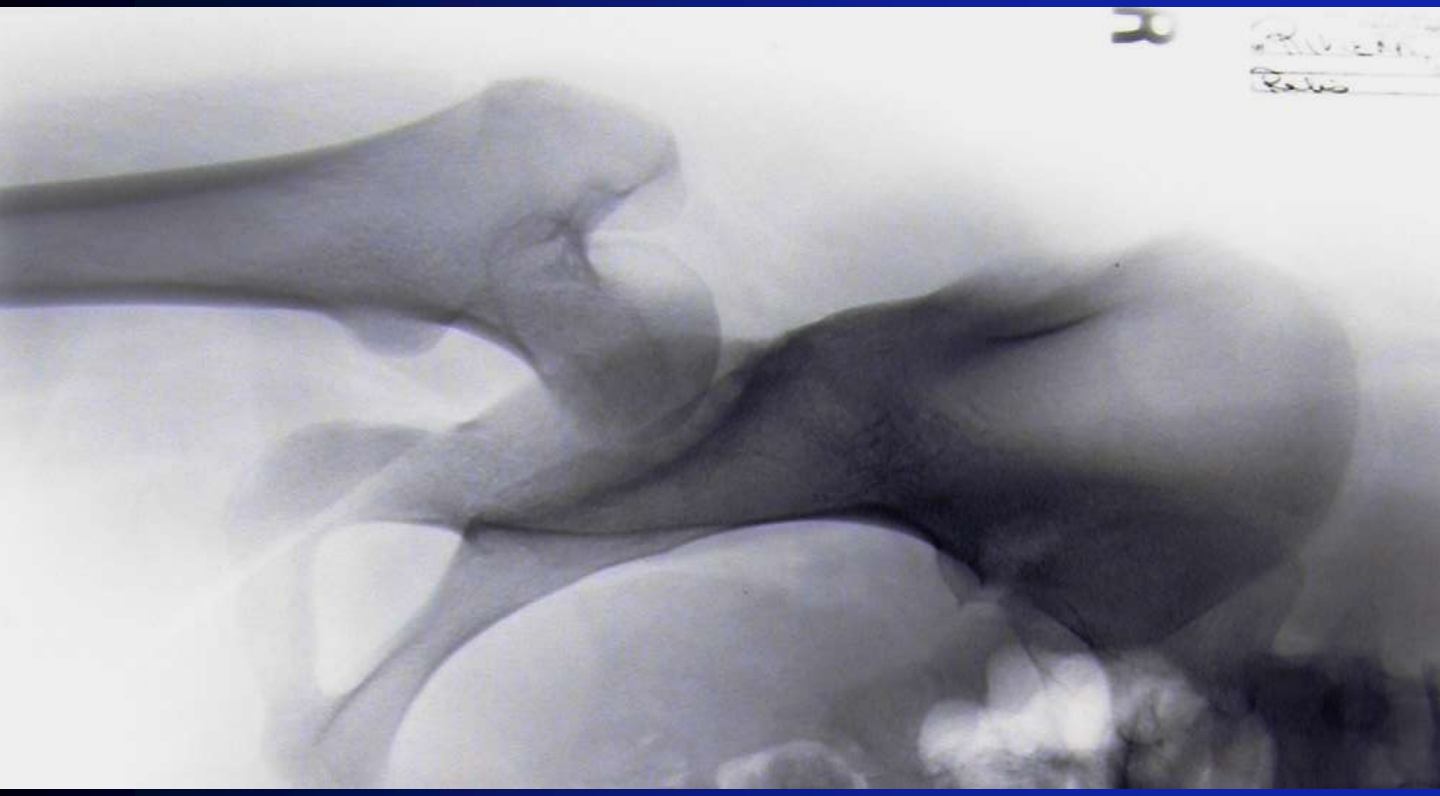

J.S.
6-3-99
R

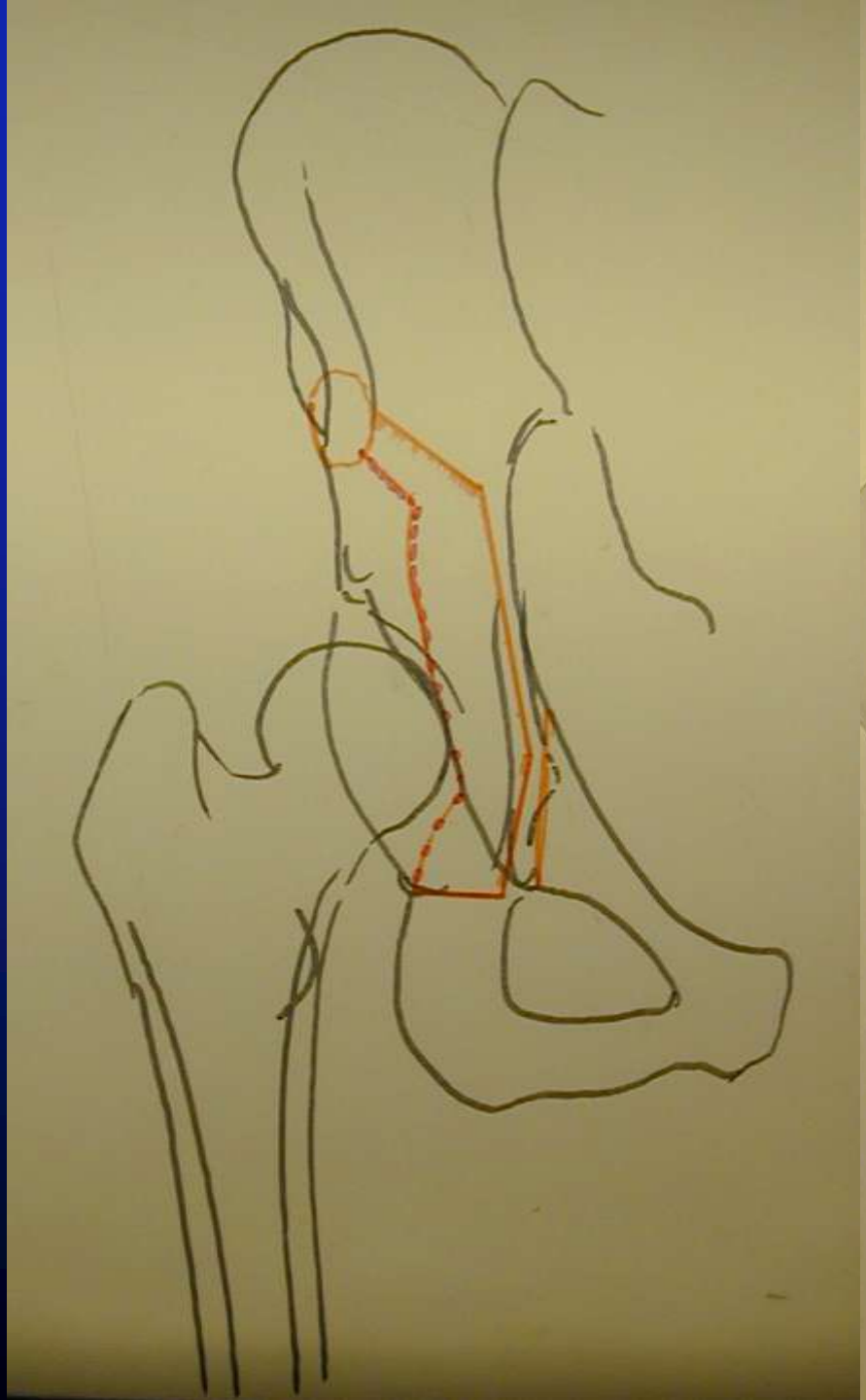
Absolute Neck Lengthening

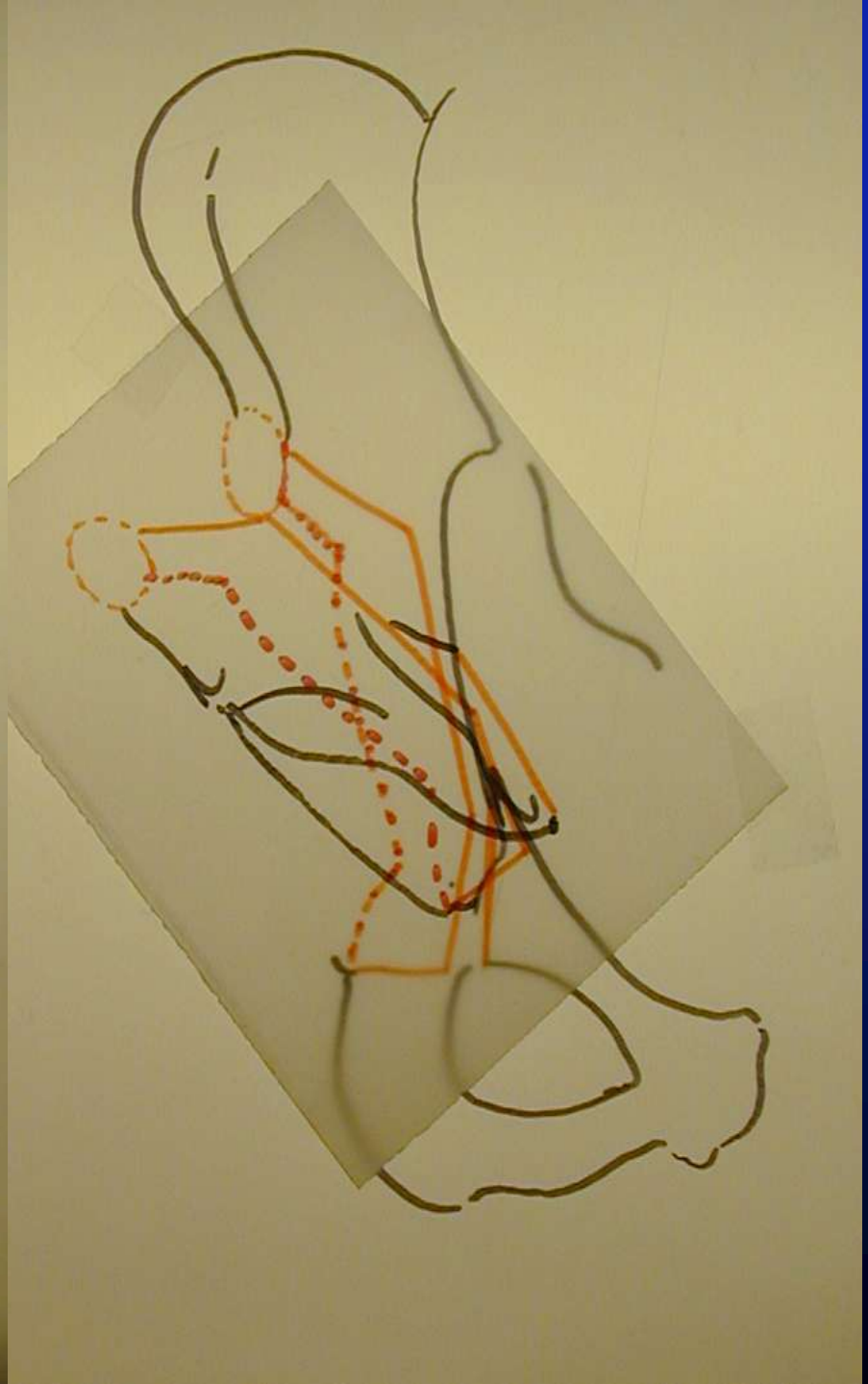
- !5 year old female
- PFFD right hip
- Painful and becoming progressively so

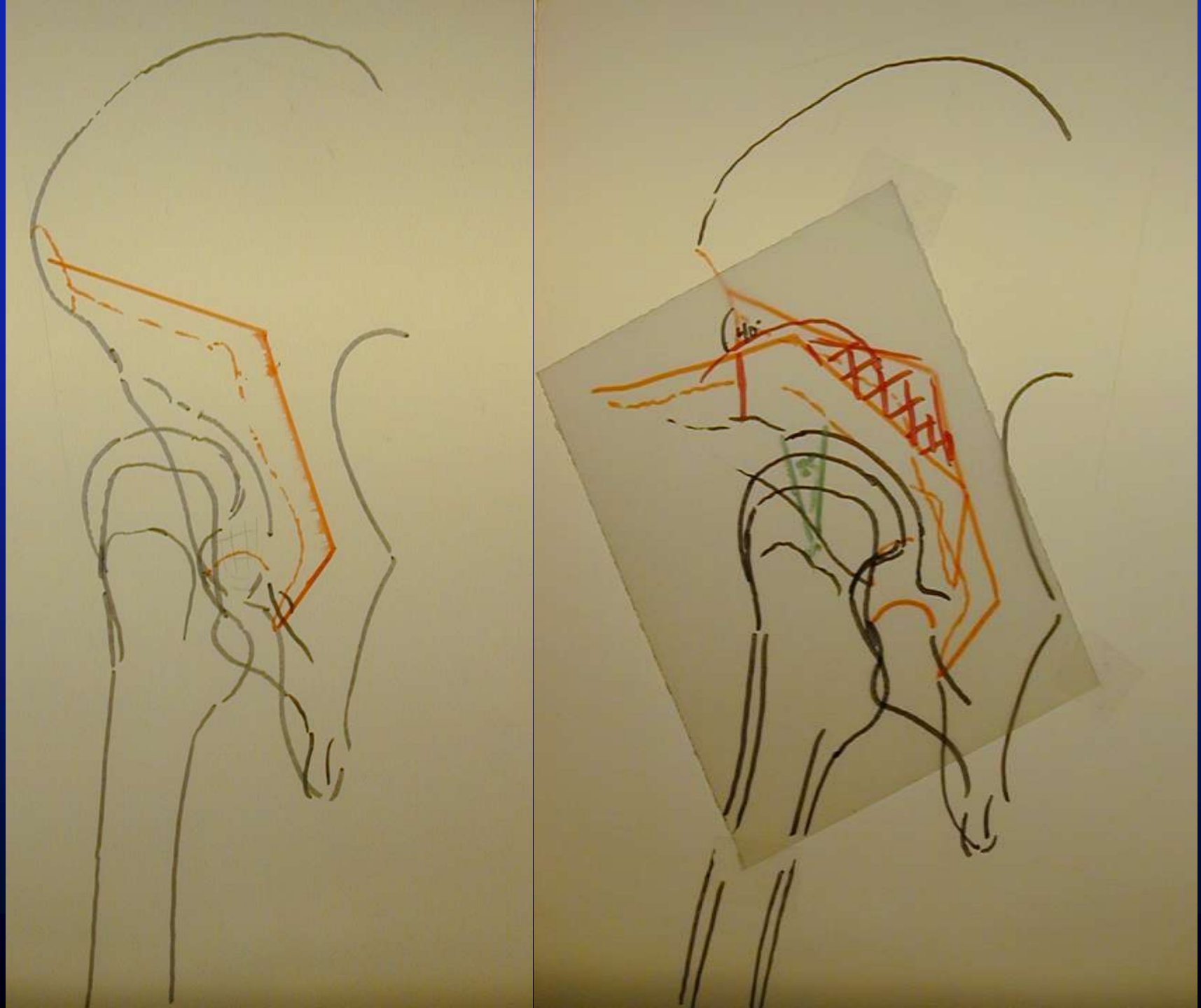

R

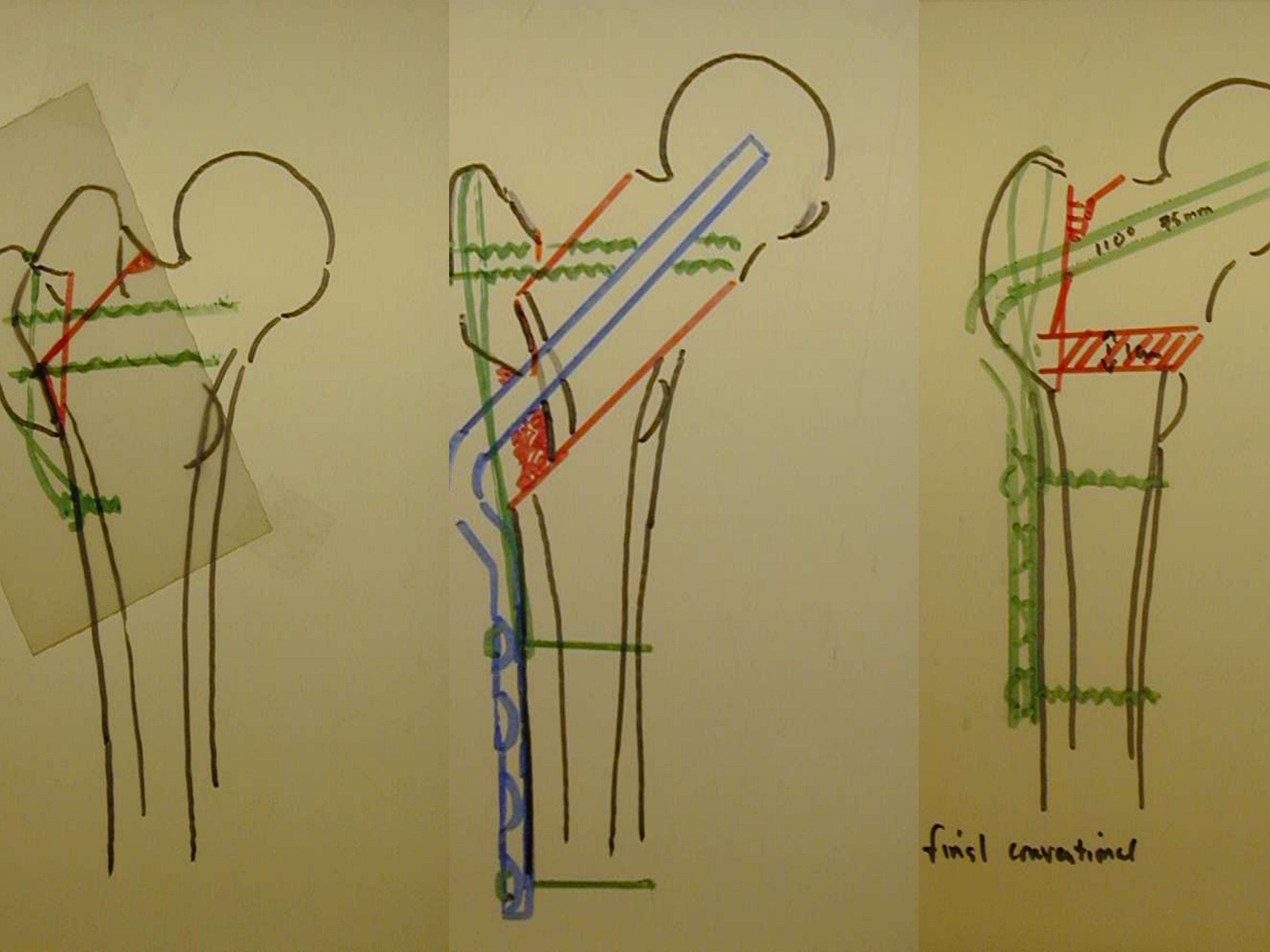

R

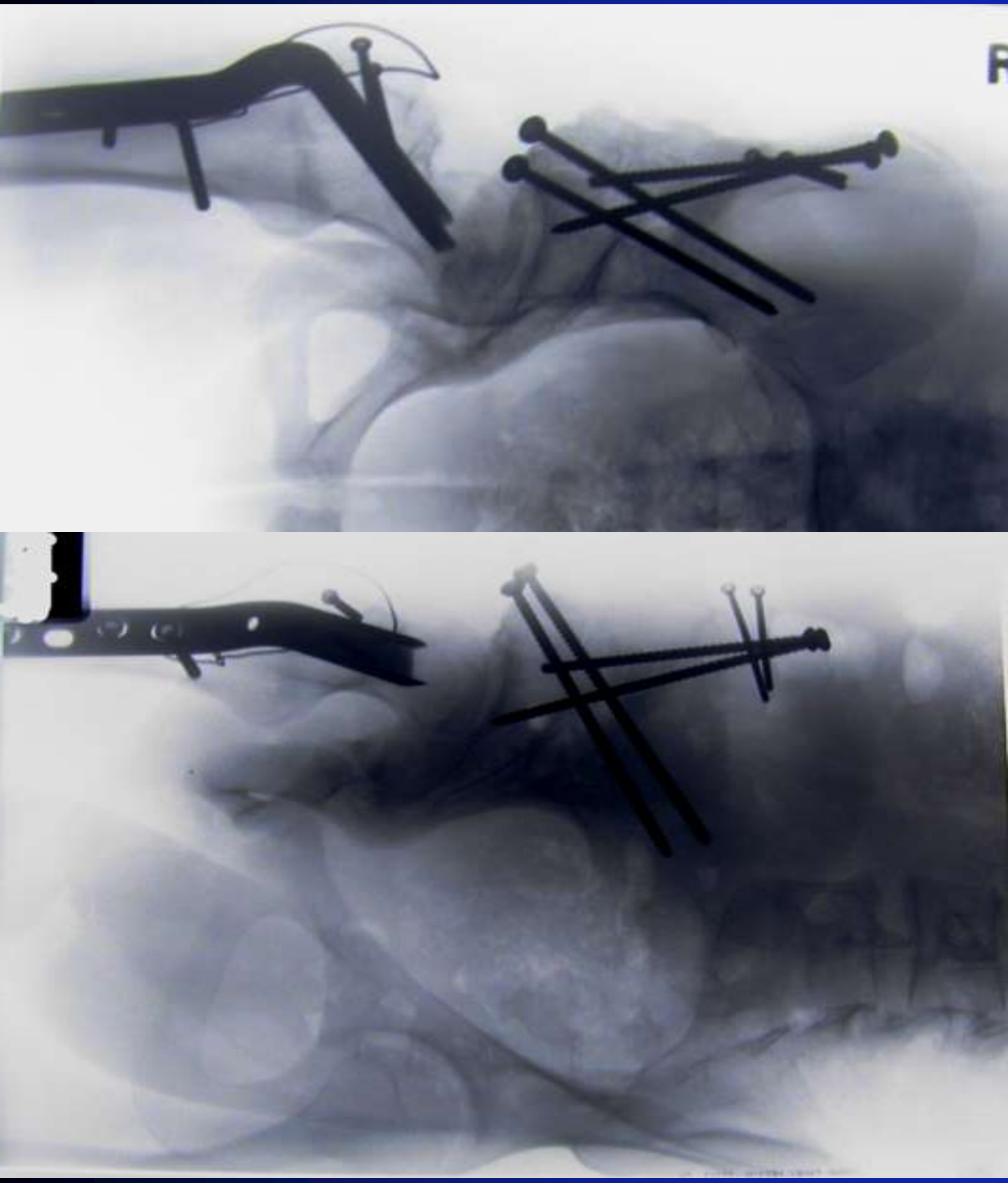


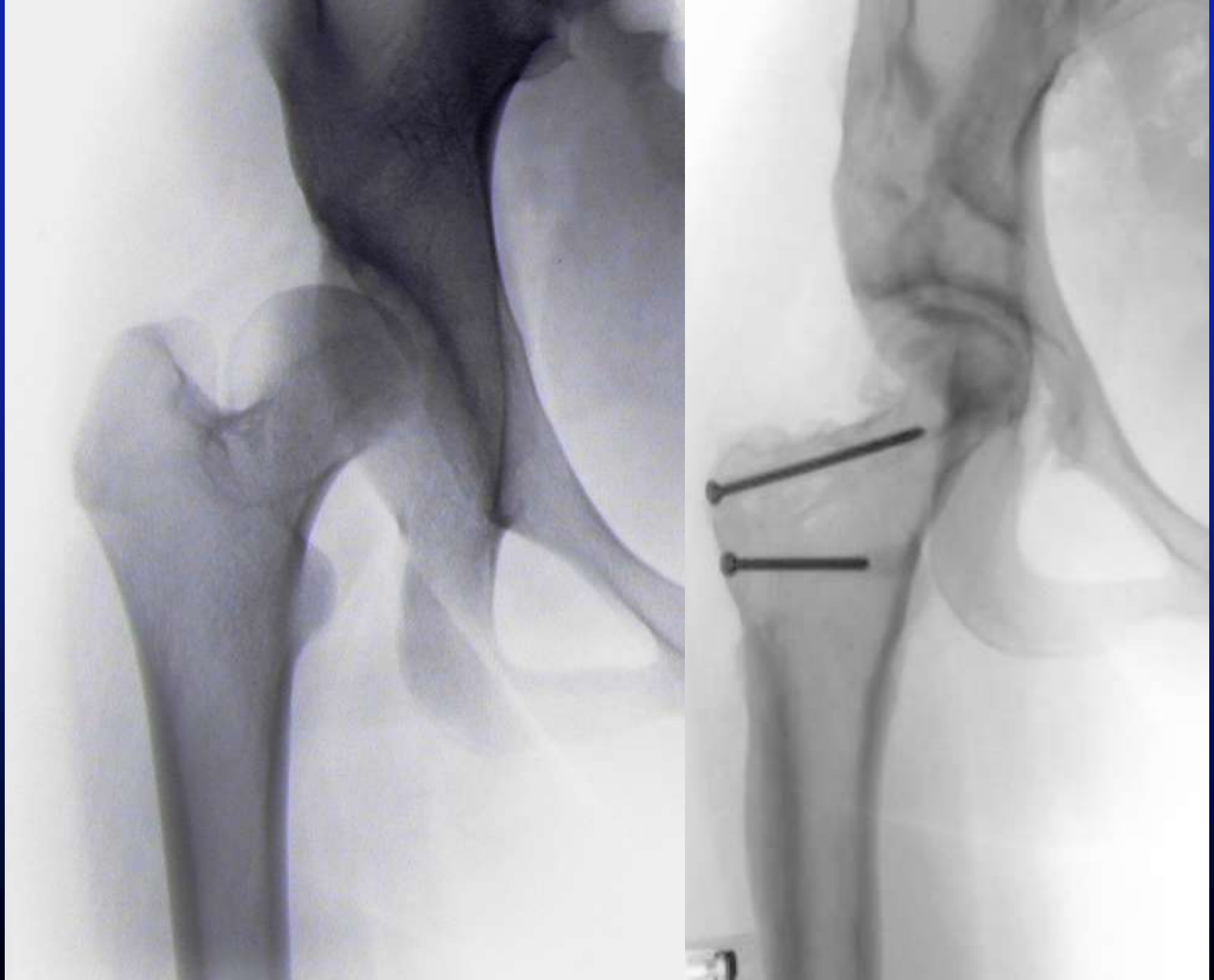


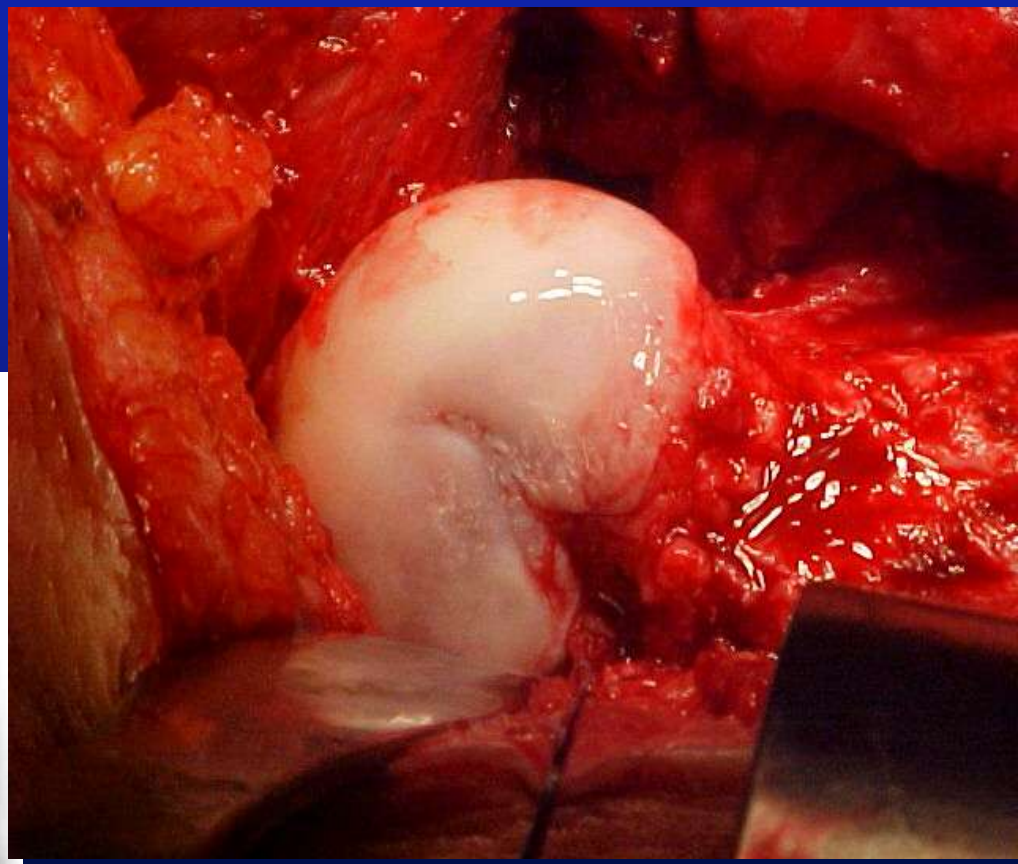





110° 95mm
final correction





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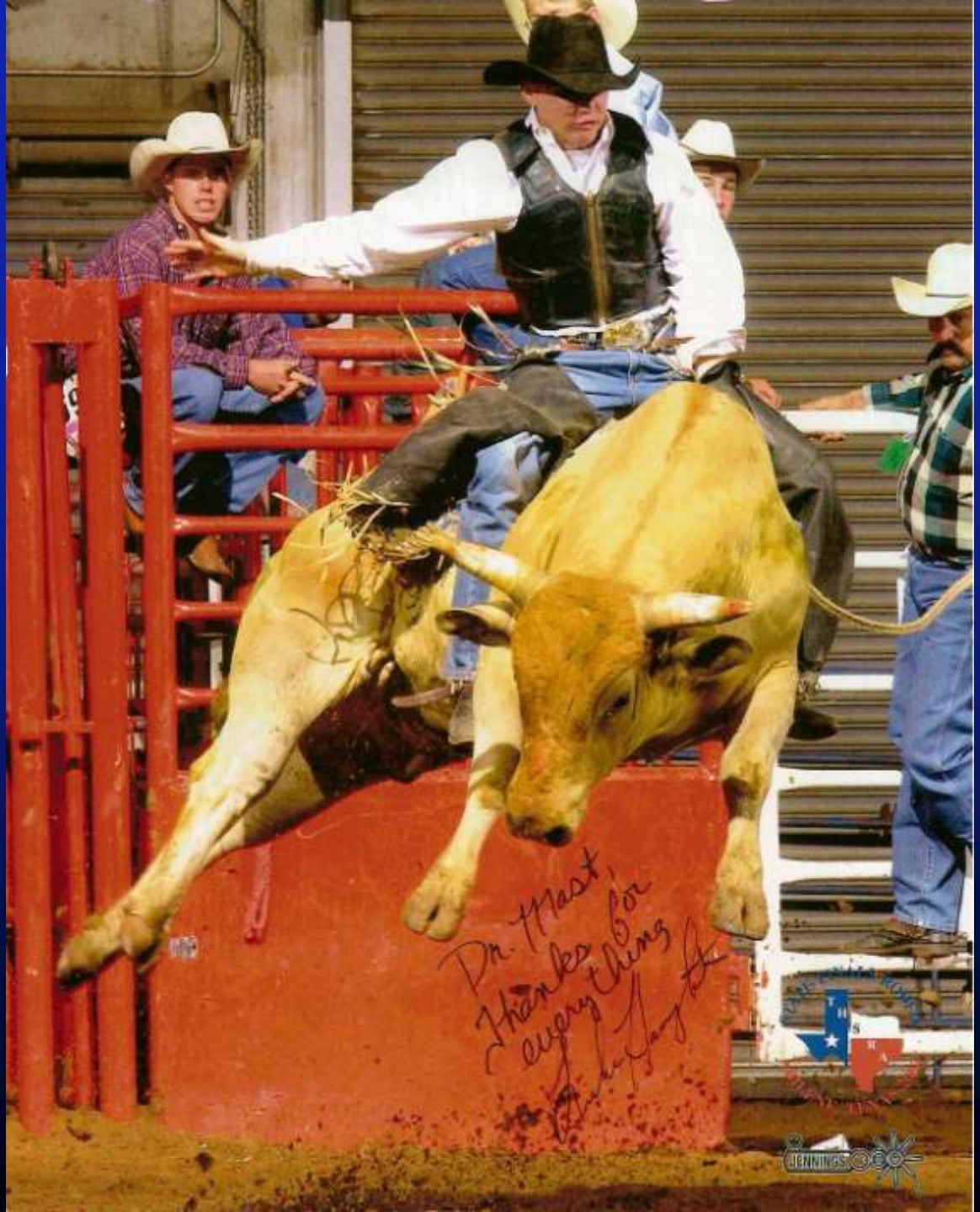
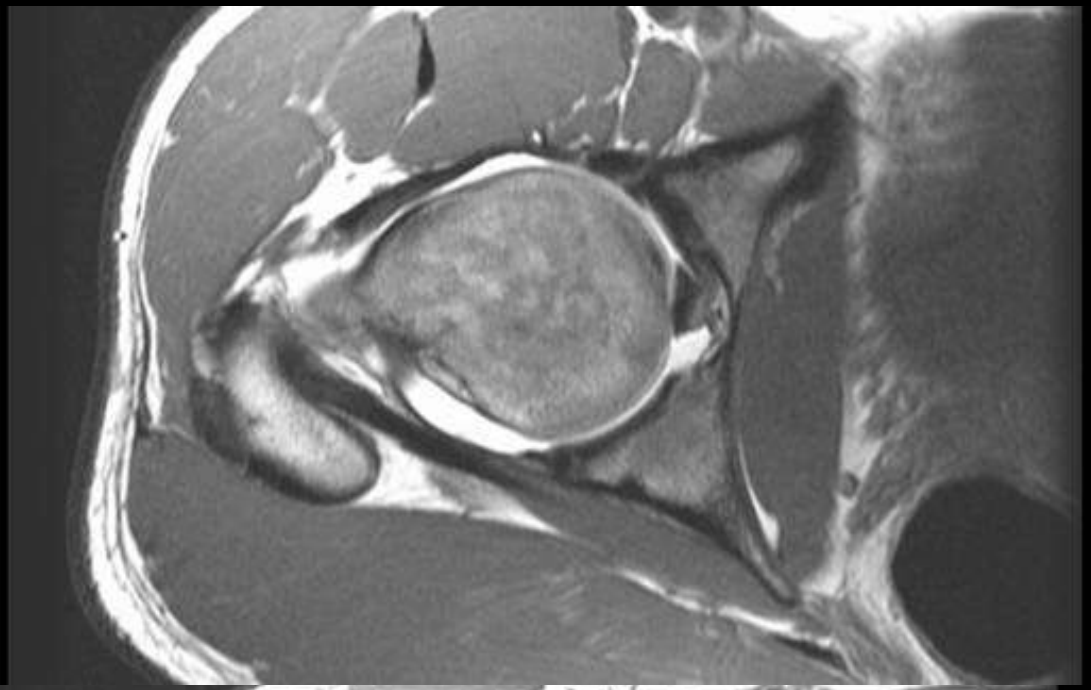
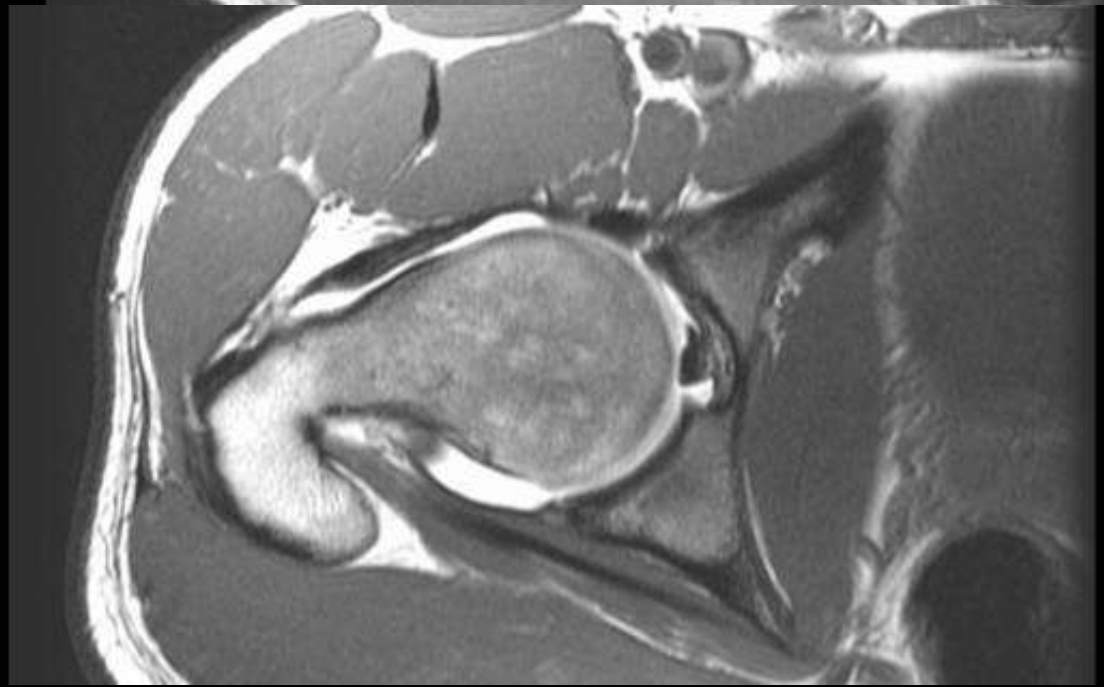
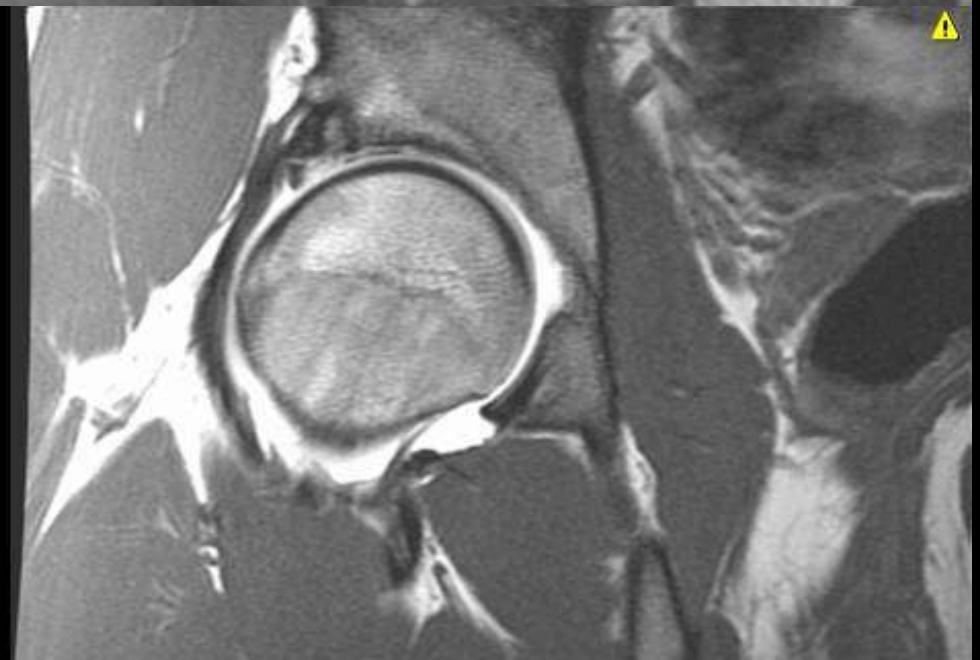
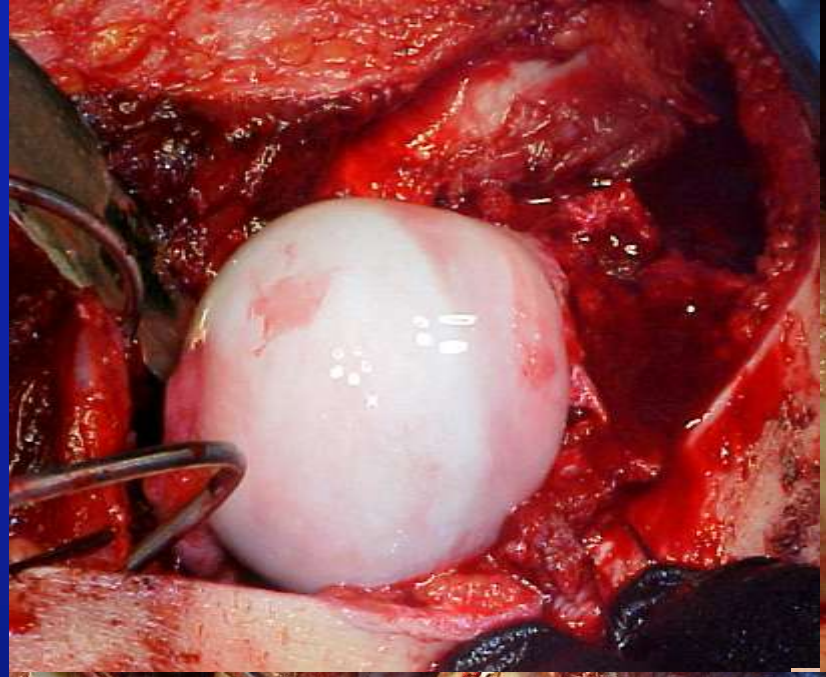
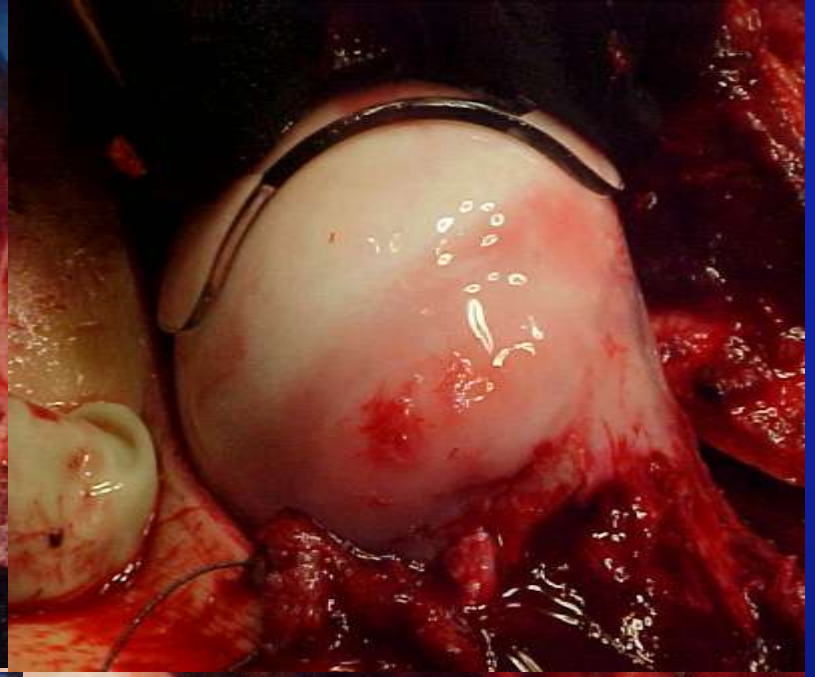
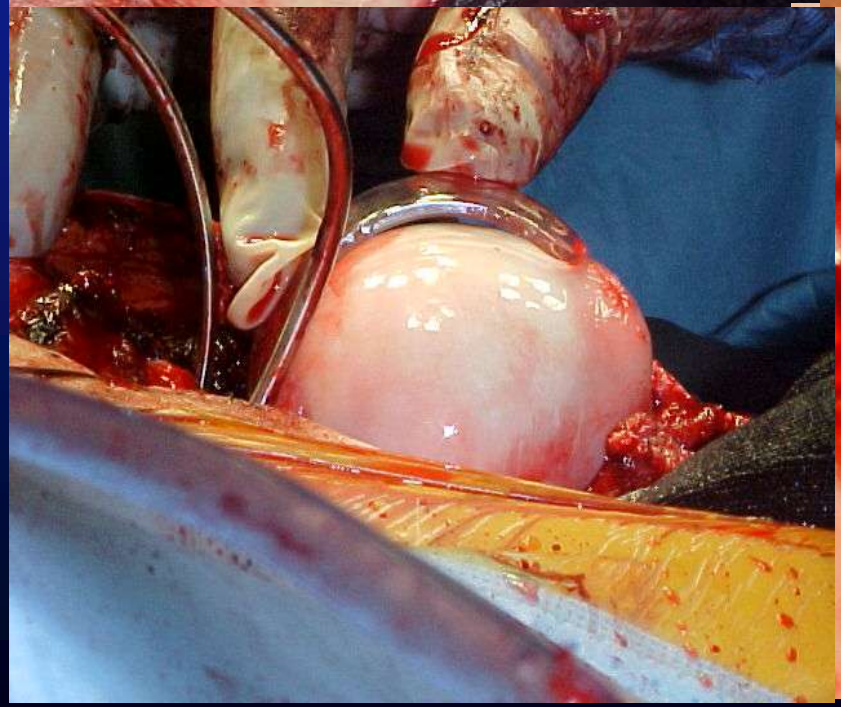
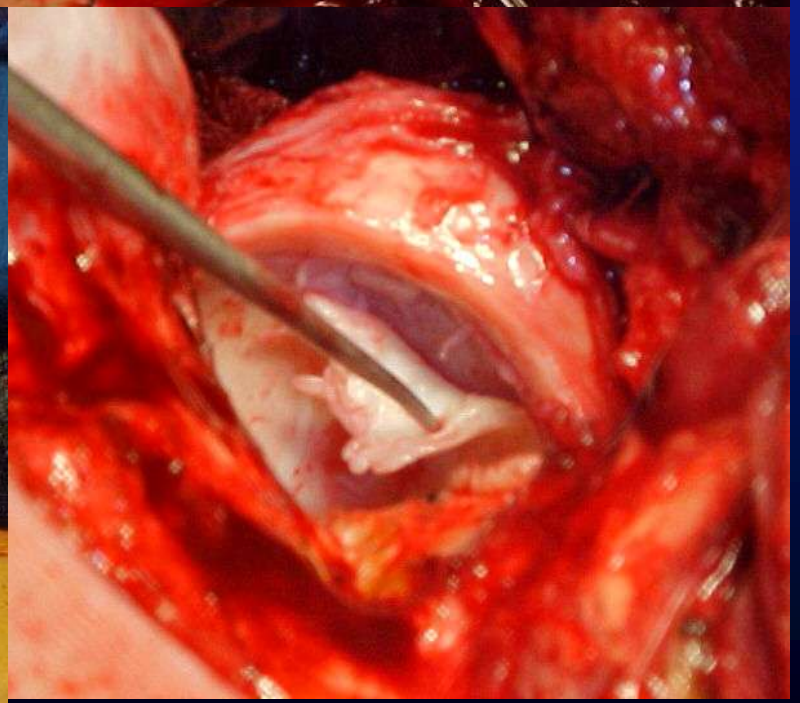
are needed to see this picture.


Dr. Hast,
Thanks for
everything
Jennings

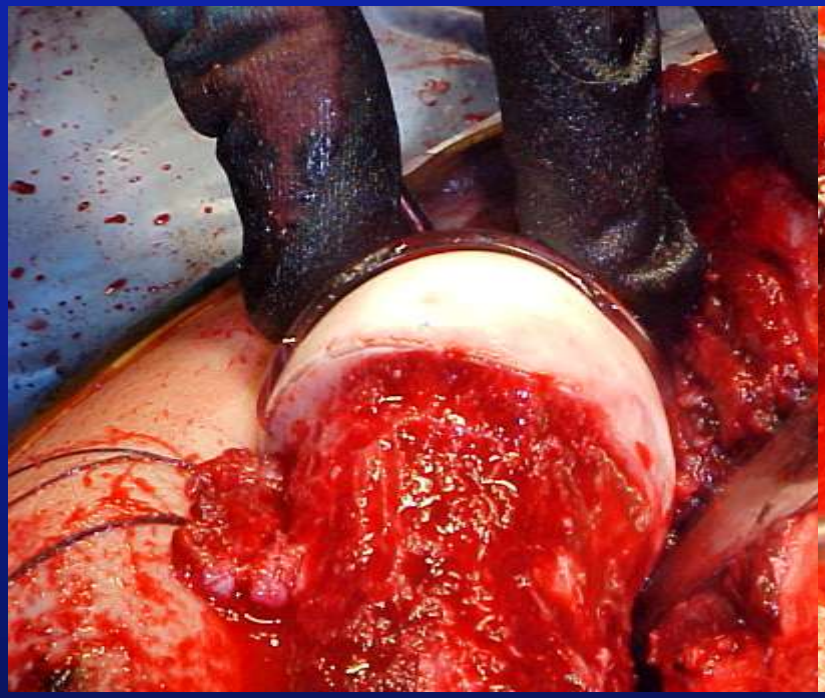


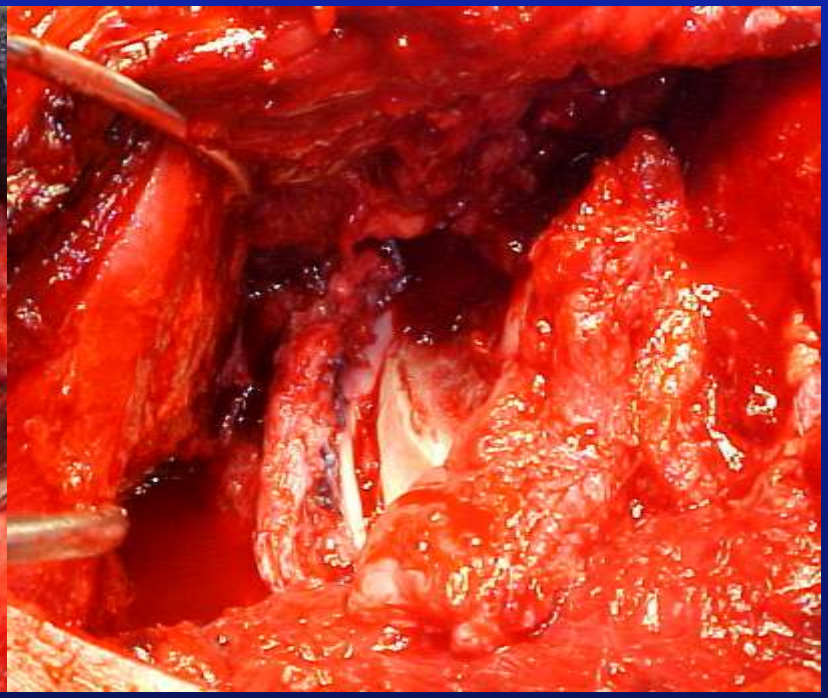




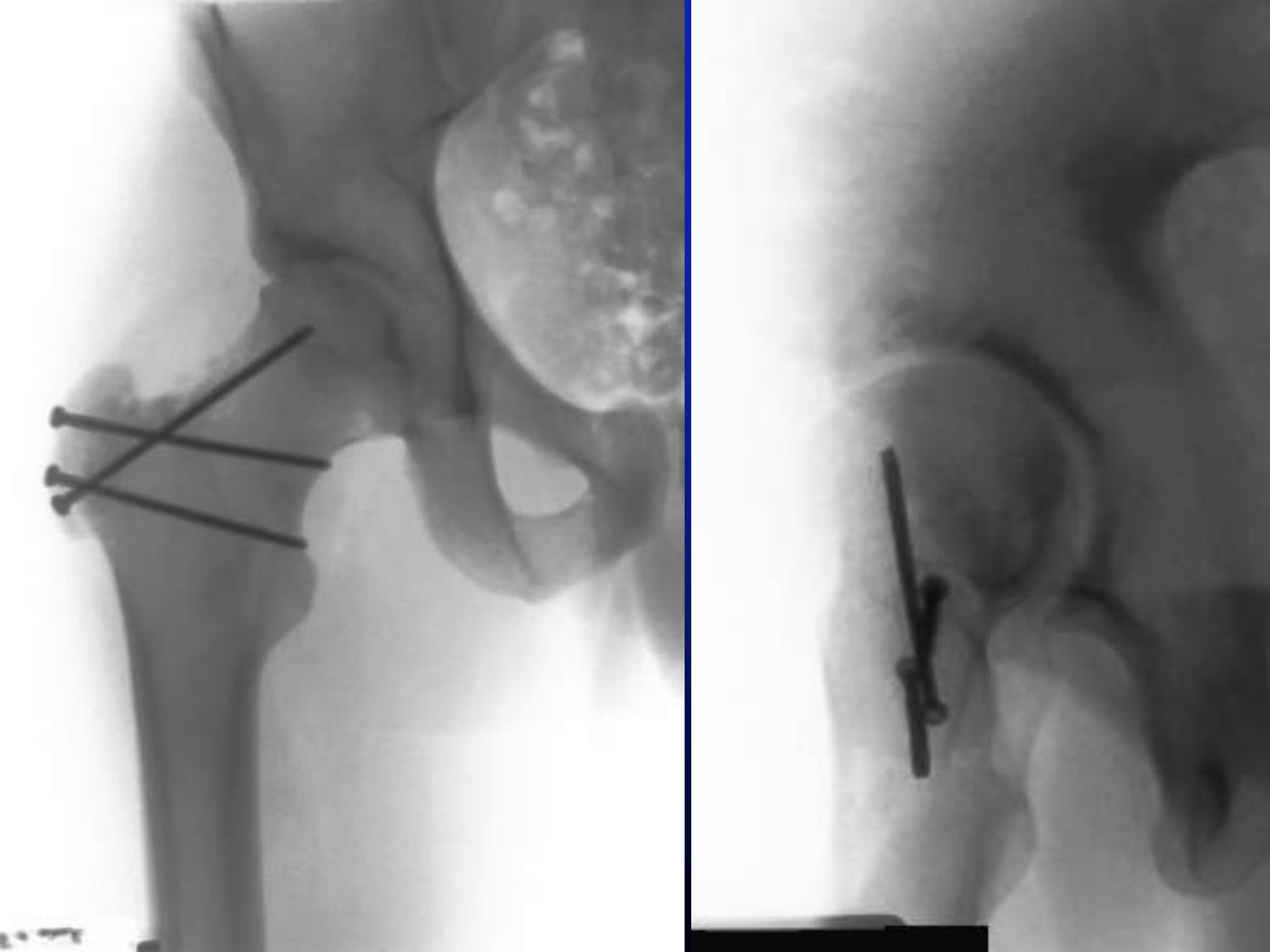





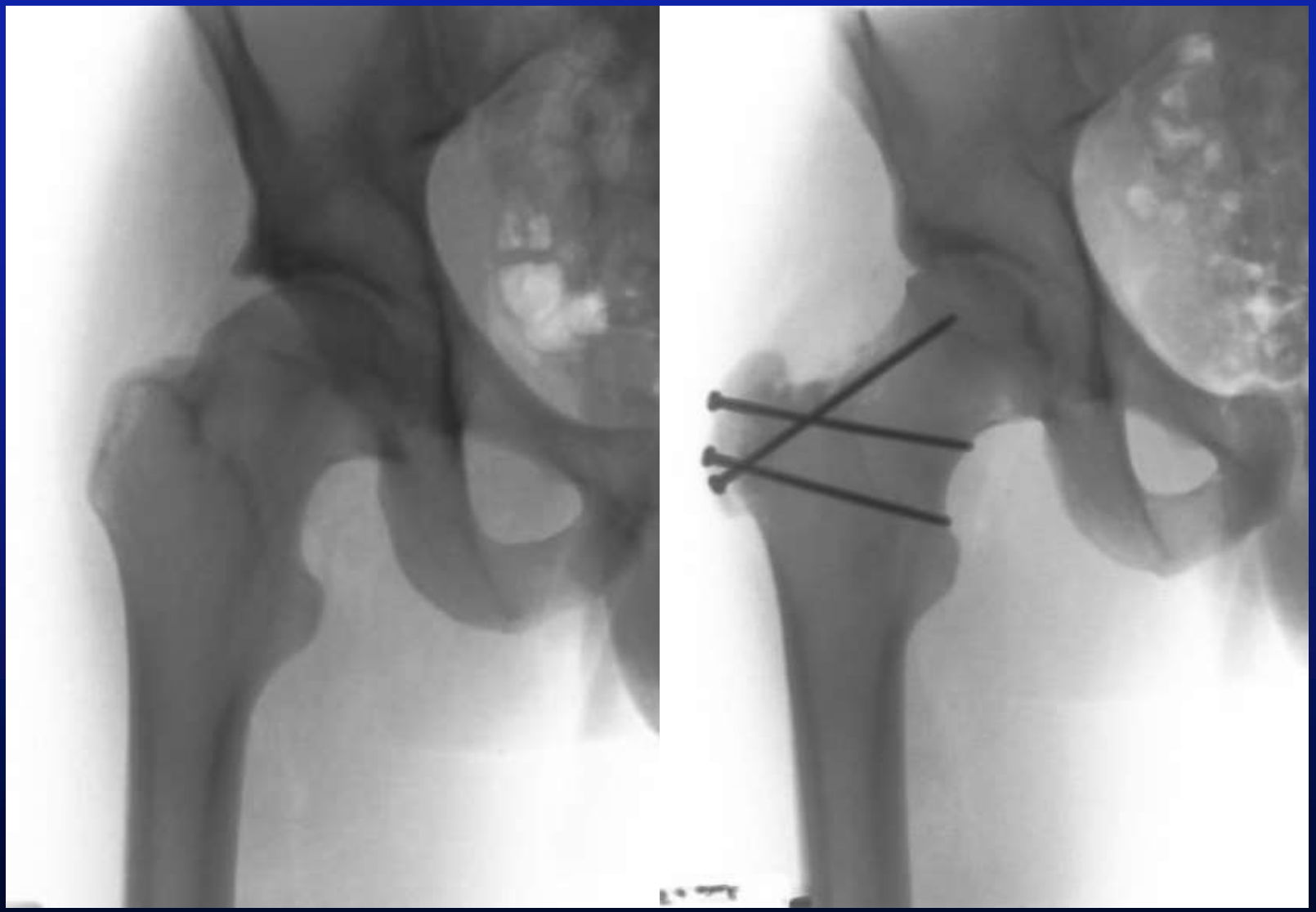
Orthopedic Circumscision

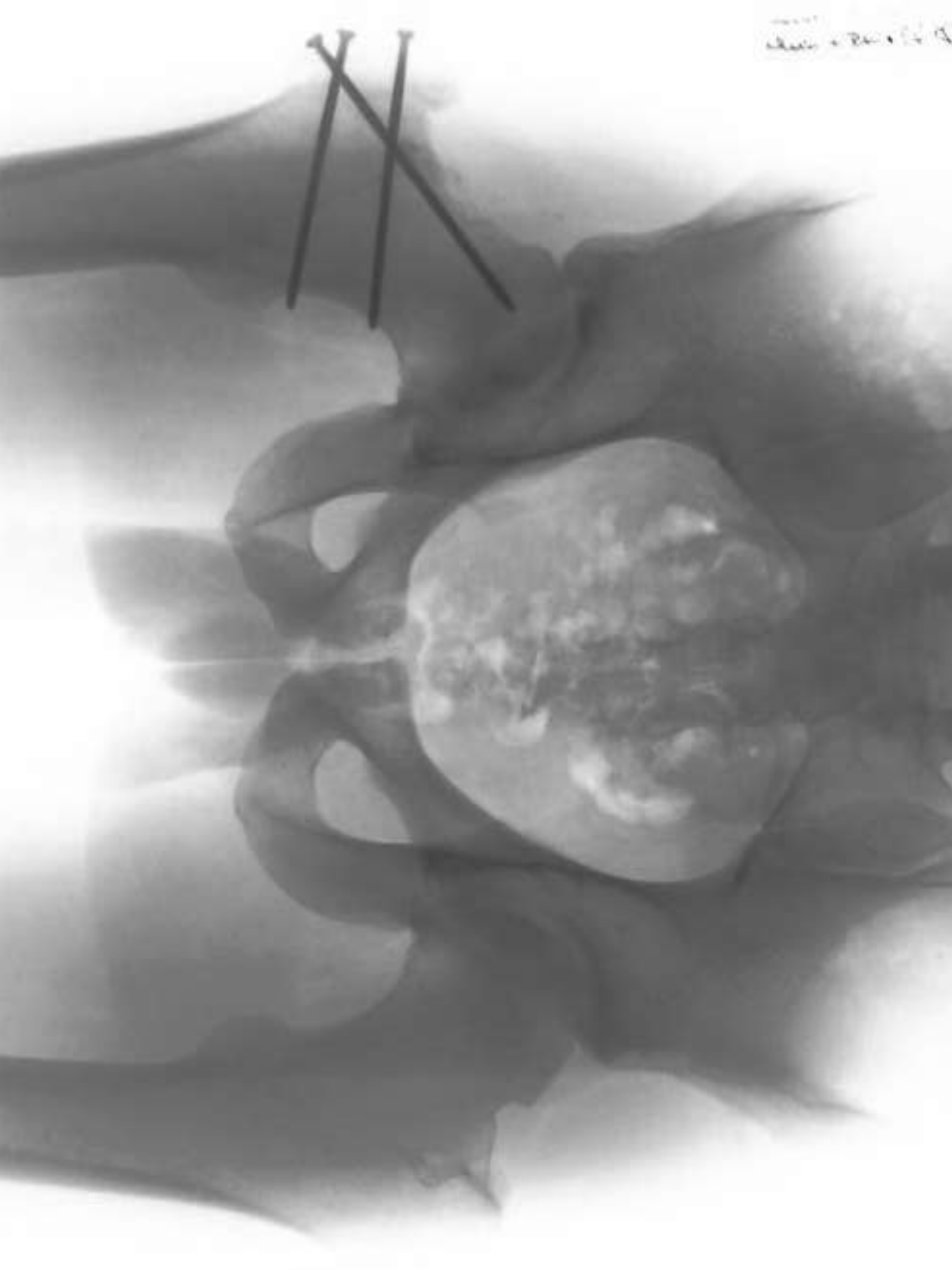




Trimming of delaminated superior margin of the Acetabulum and reattachment of the torn Labrum







Epiphysiolysis

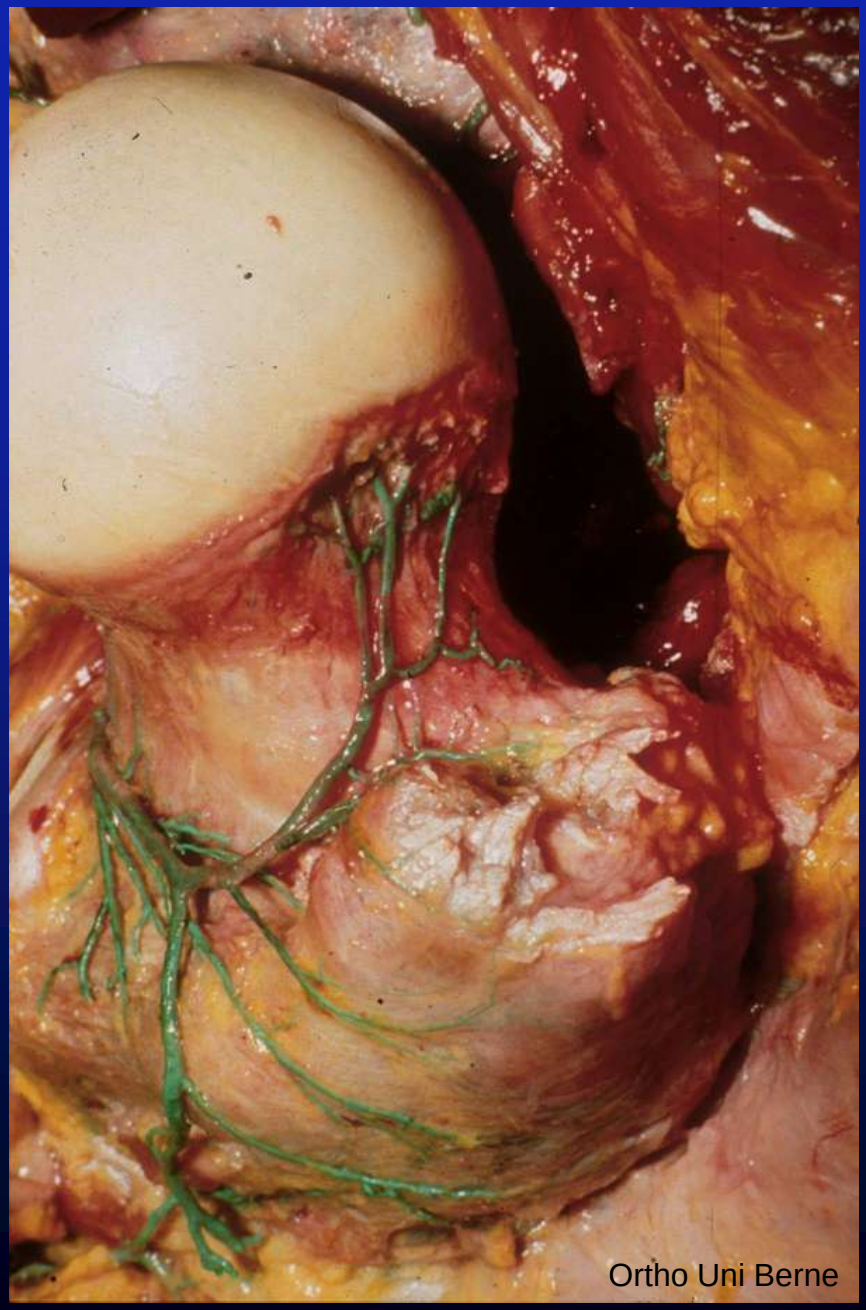
Possibilities of treatment

Knowing the “safe route” to the Femoral Head and Neck

Anatomical considerations I

Blood supply to the femoral head sufficient by the medial femoral circumflex artery

Truetta and Harrison, JBJS, 35-B:442, 1953;
Sevitt and Thompson, JBJS, 47-B:560, 1965.

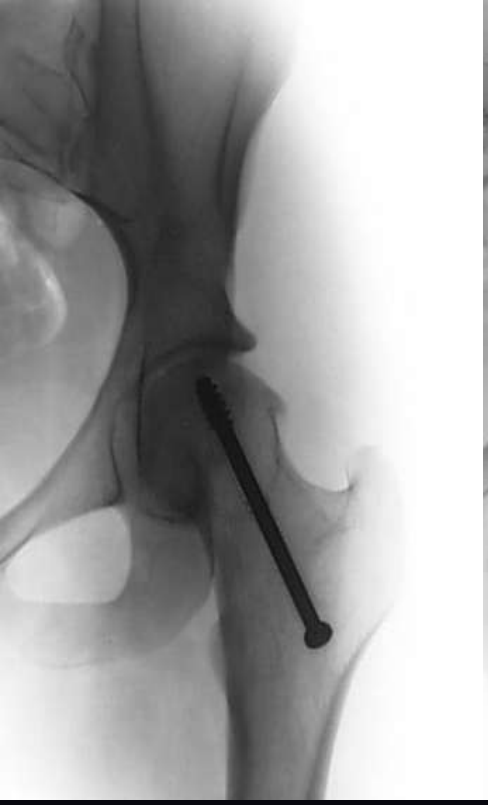


Imhaeuser-Weber

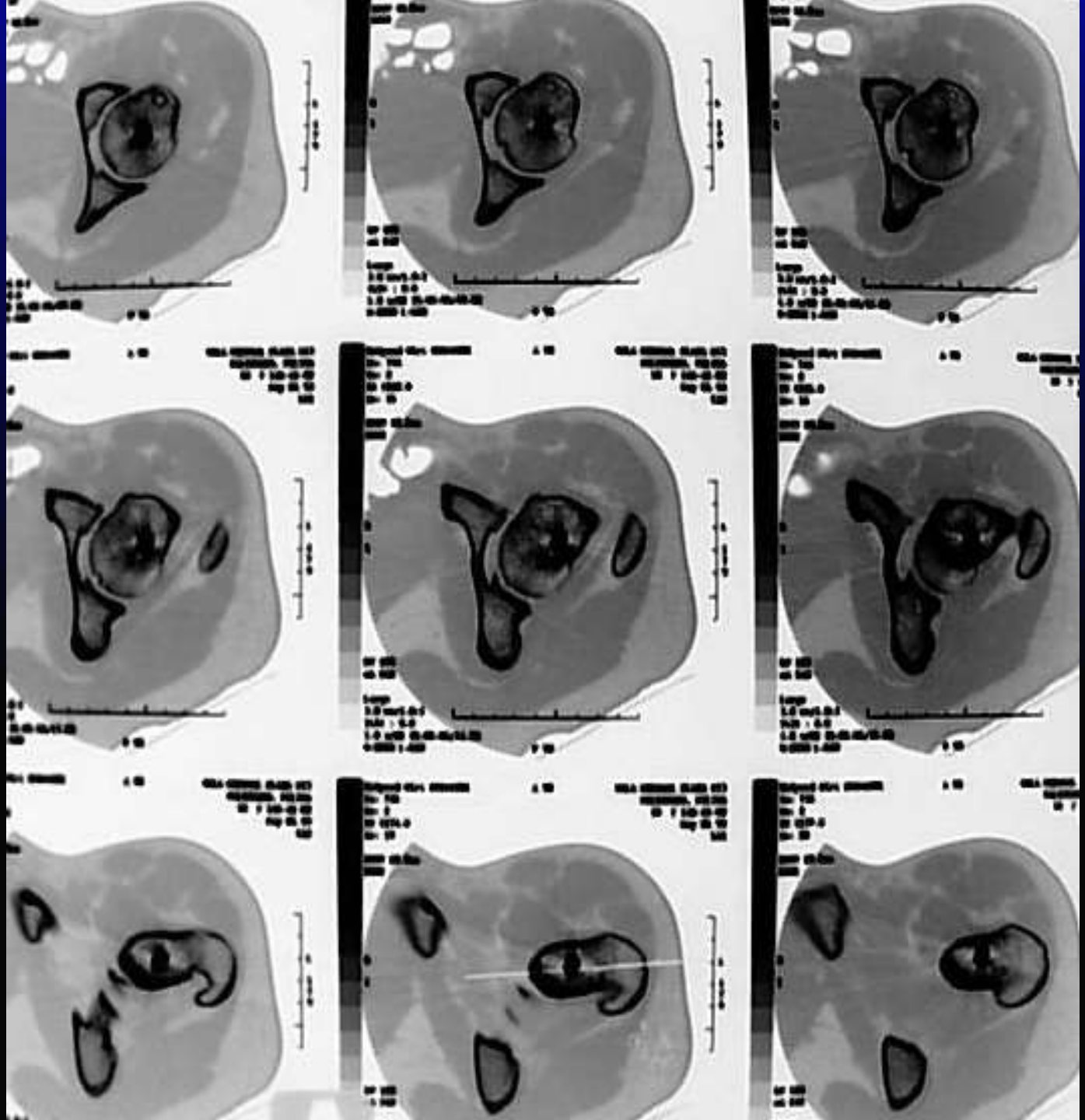
Flexion, abduction, internal rotation intertrochanteric Osteotomy

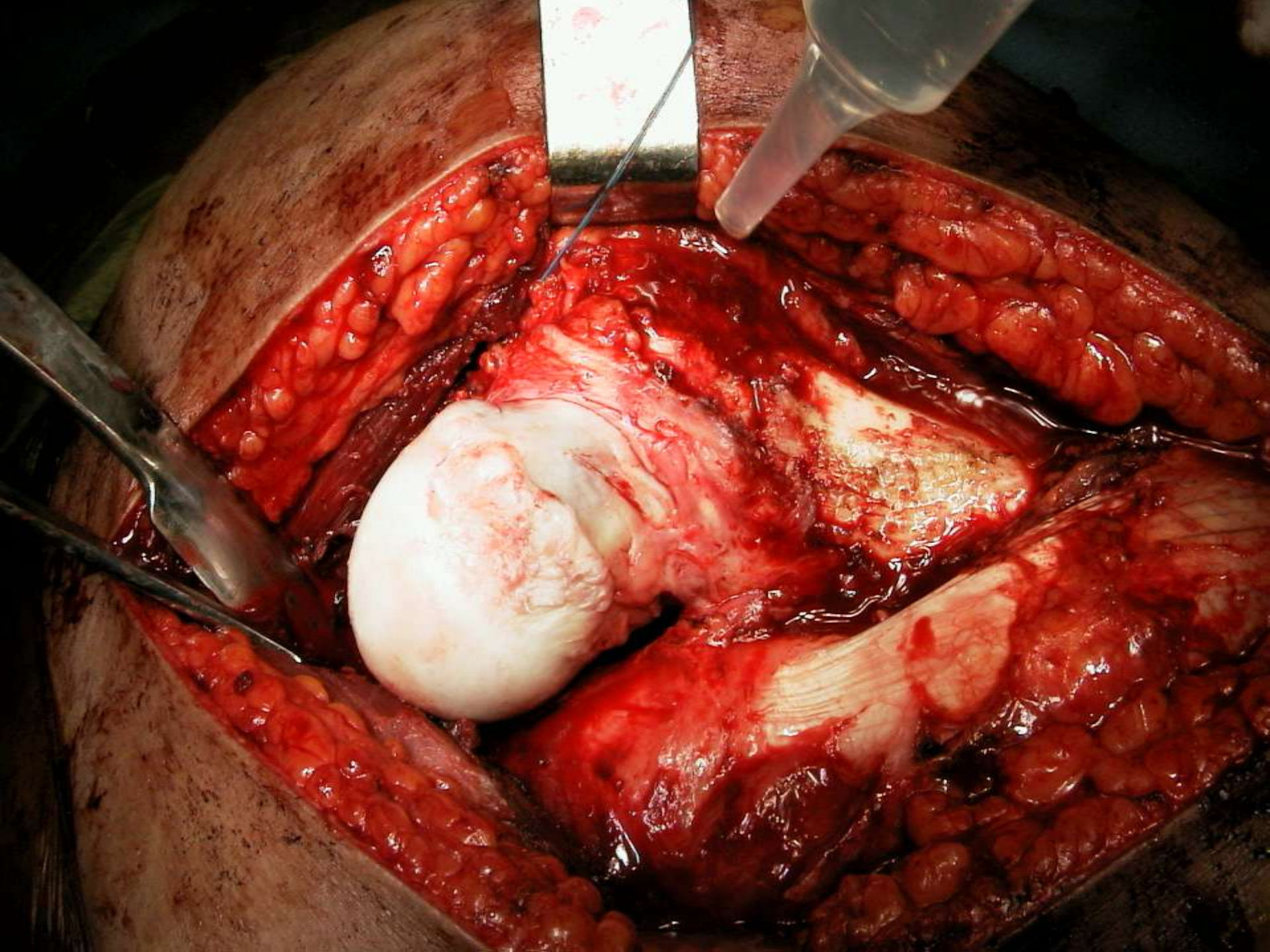
With Surgical dislocation

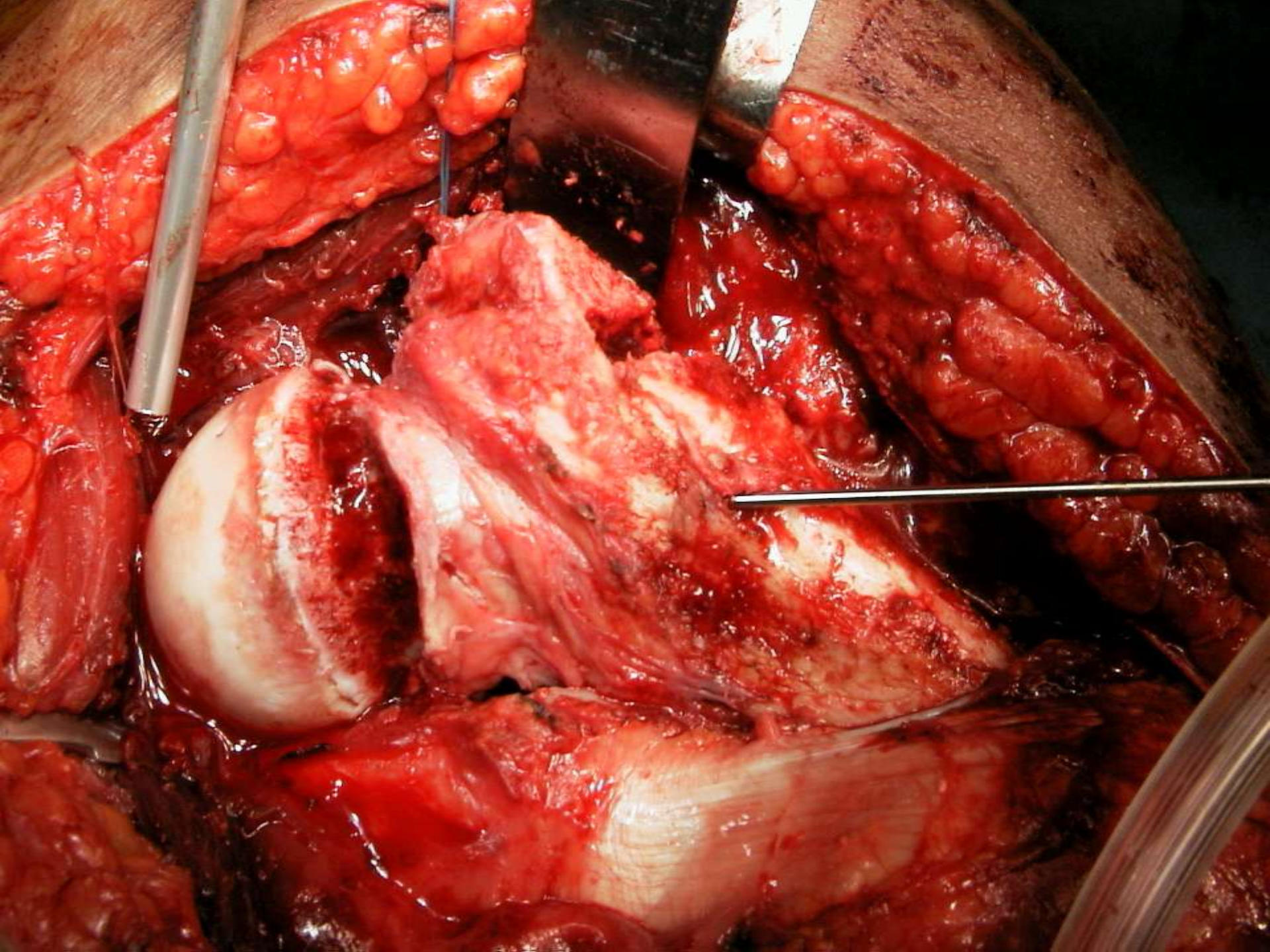
- It is possible, due to the work of Ganz and his associates on the blood supply to the femoral epiphysis to:
- Relook at the“callous resection” repositioning osteotomy of the femoral epiphysis in chronic “slips”
- Safely accomplish a femoral neck osteotomy to reposition the femoral head in old residuals from slips.

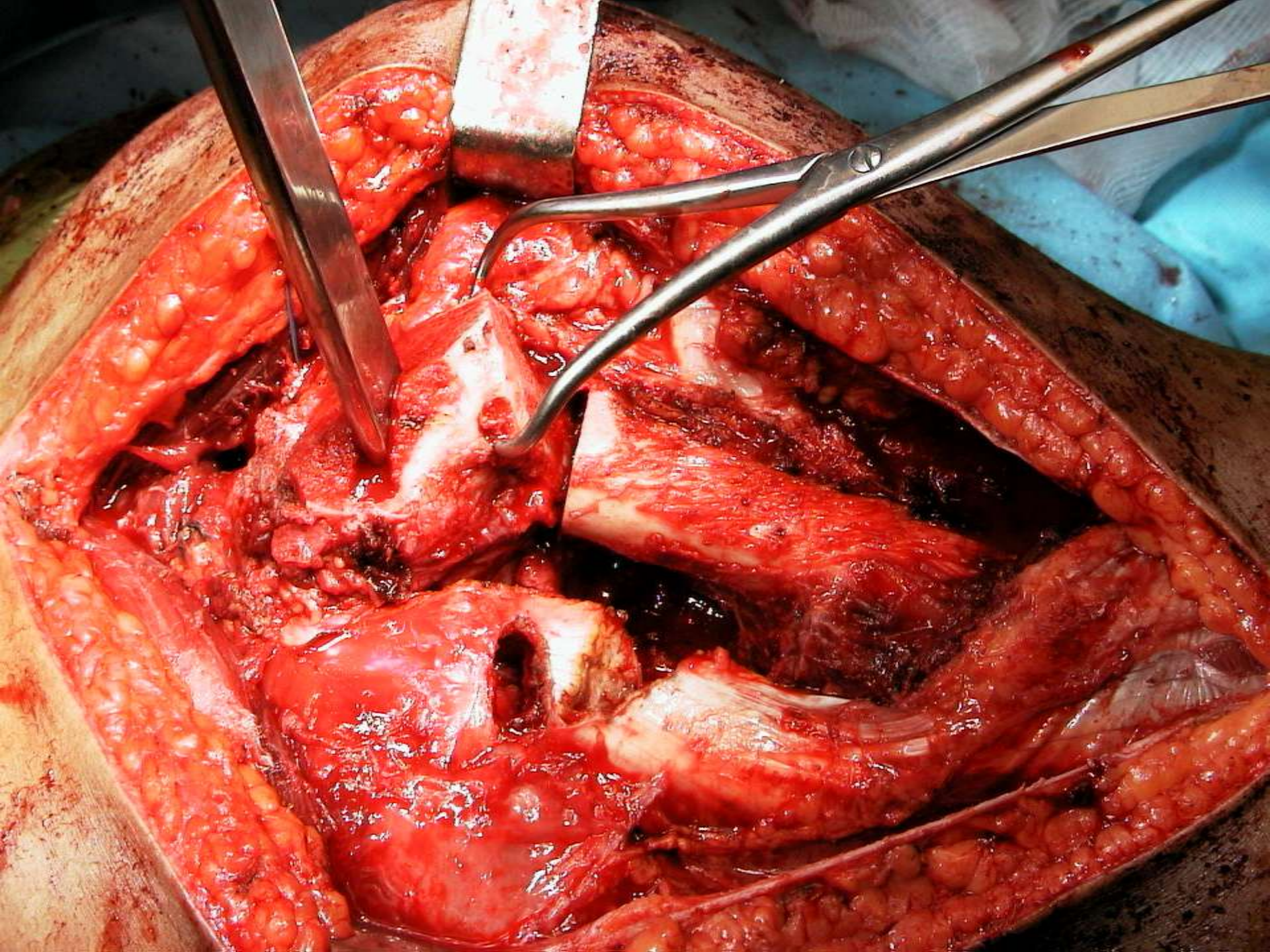






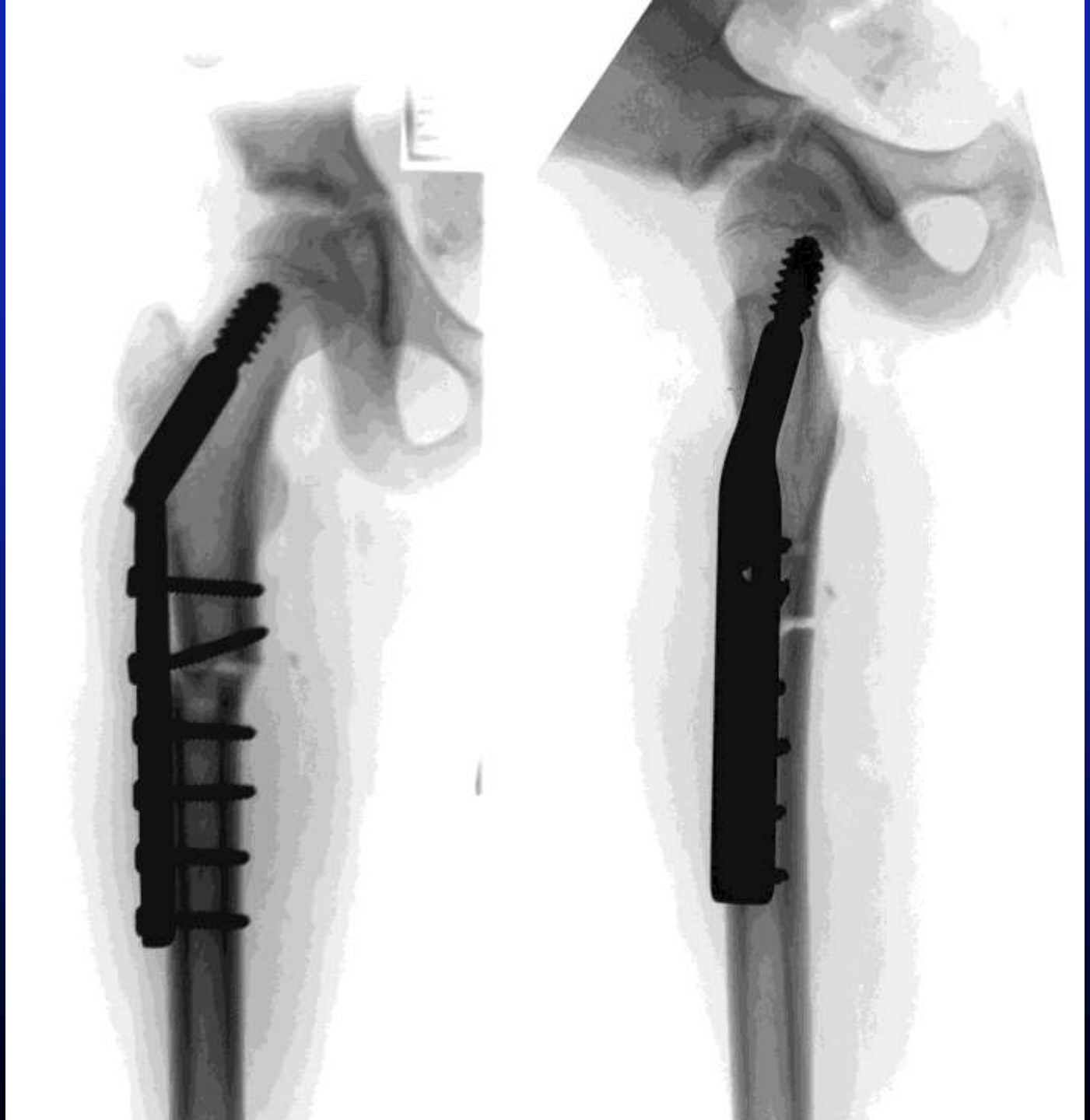




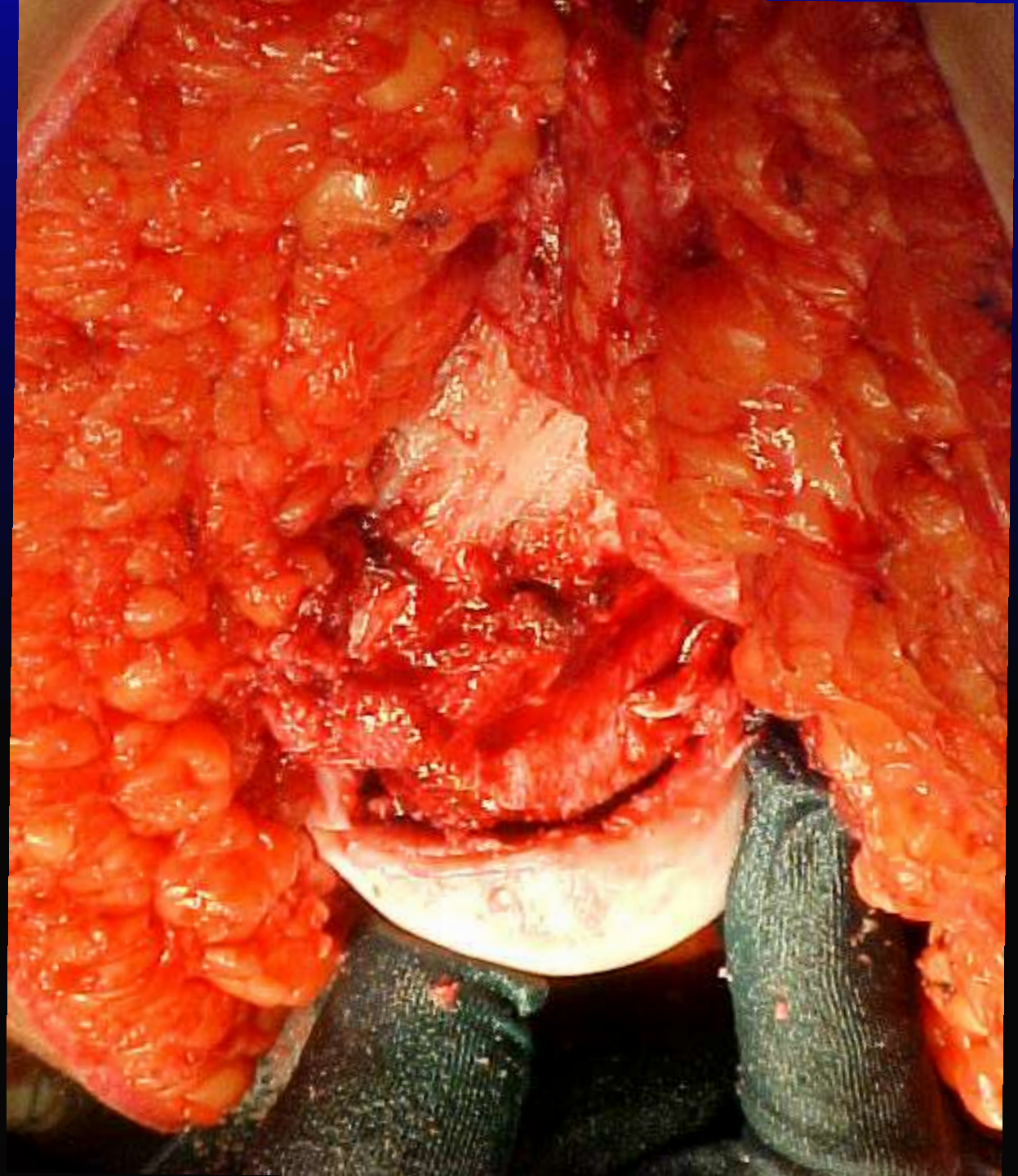


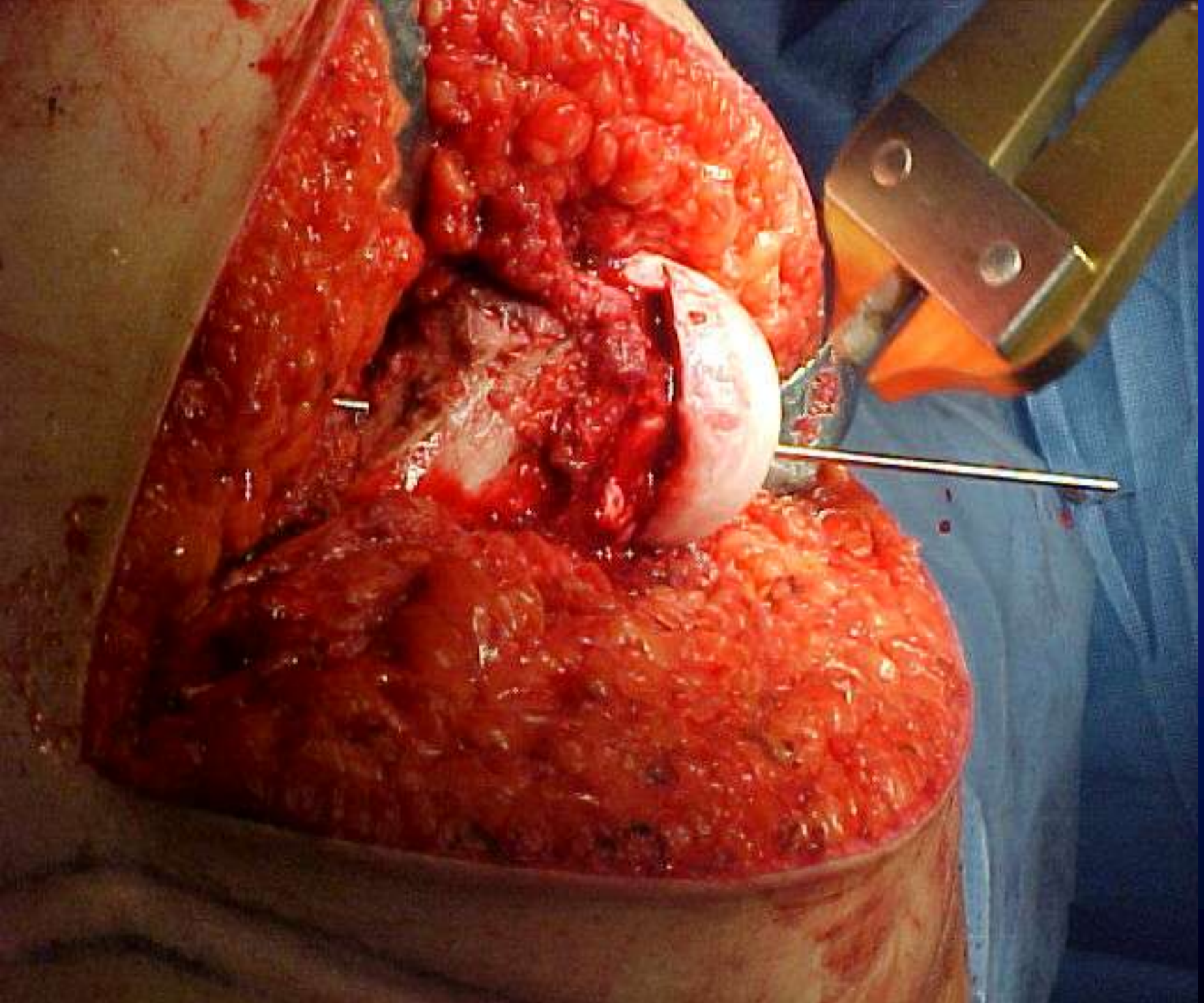
Going to the site of the deformity

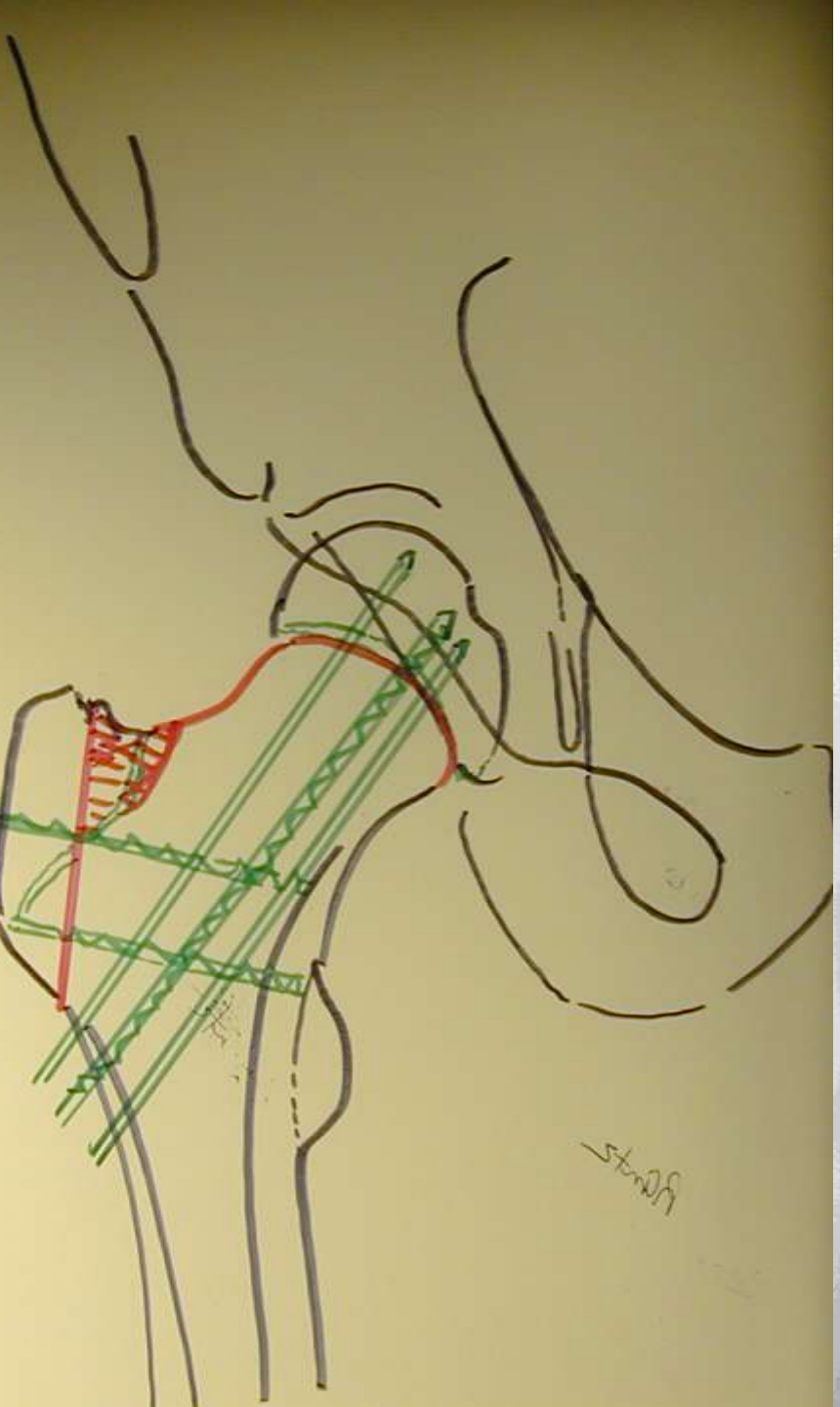
Femoral neck osteotomy

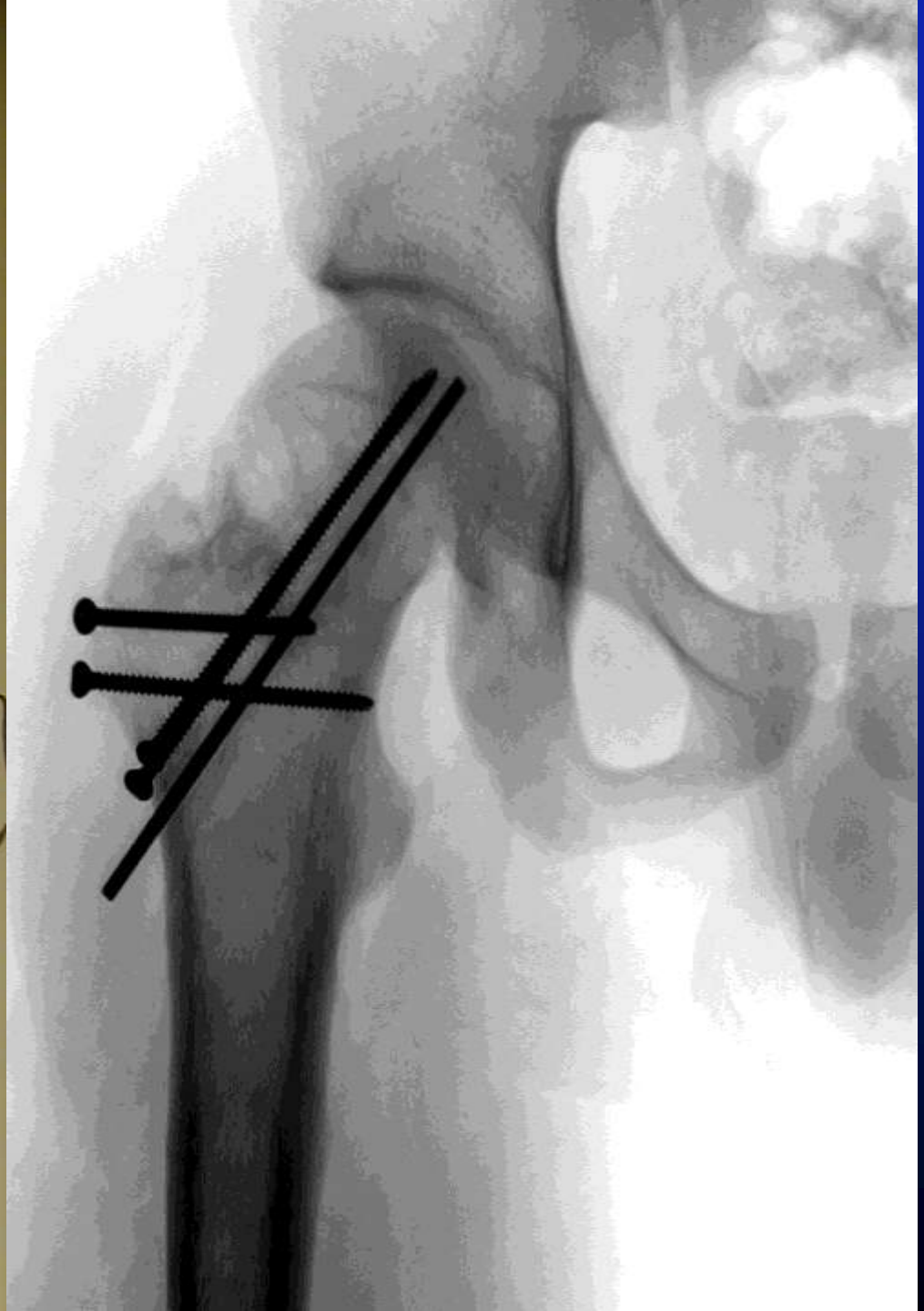



R



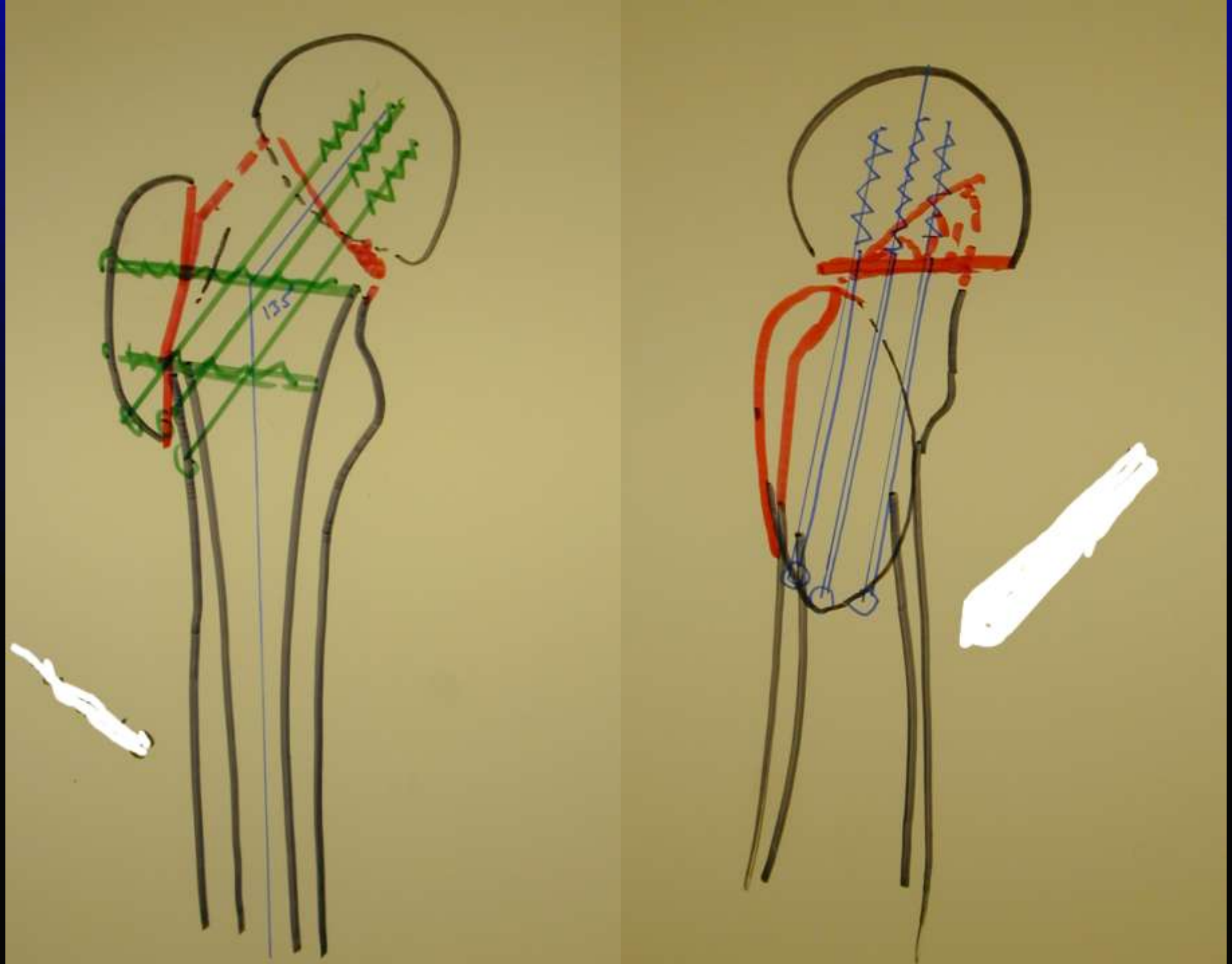


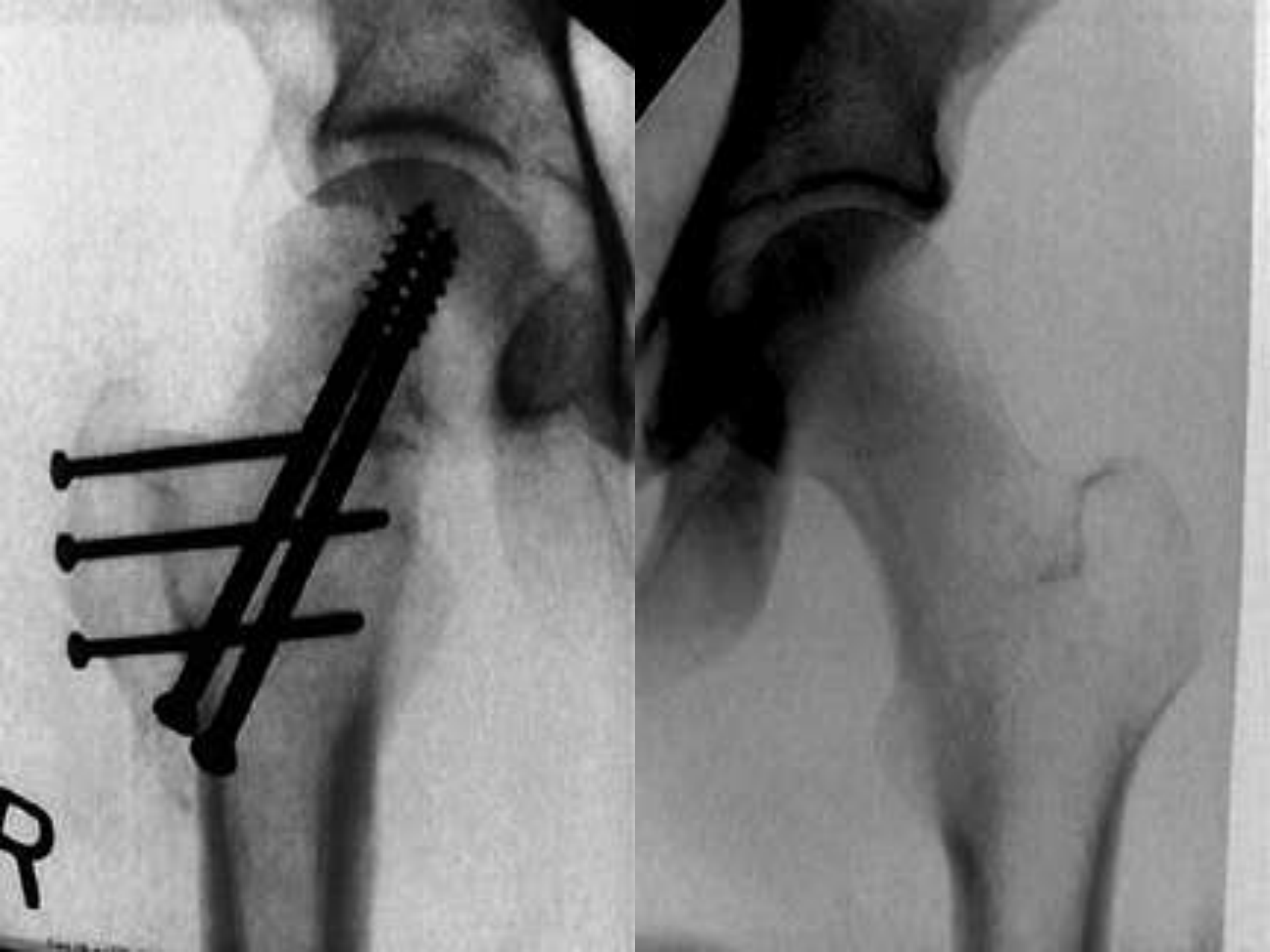




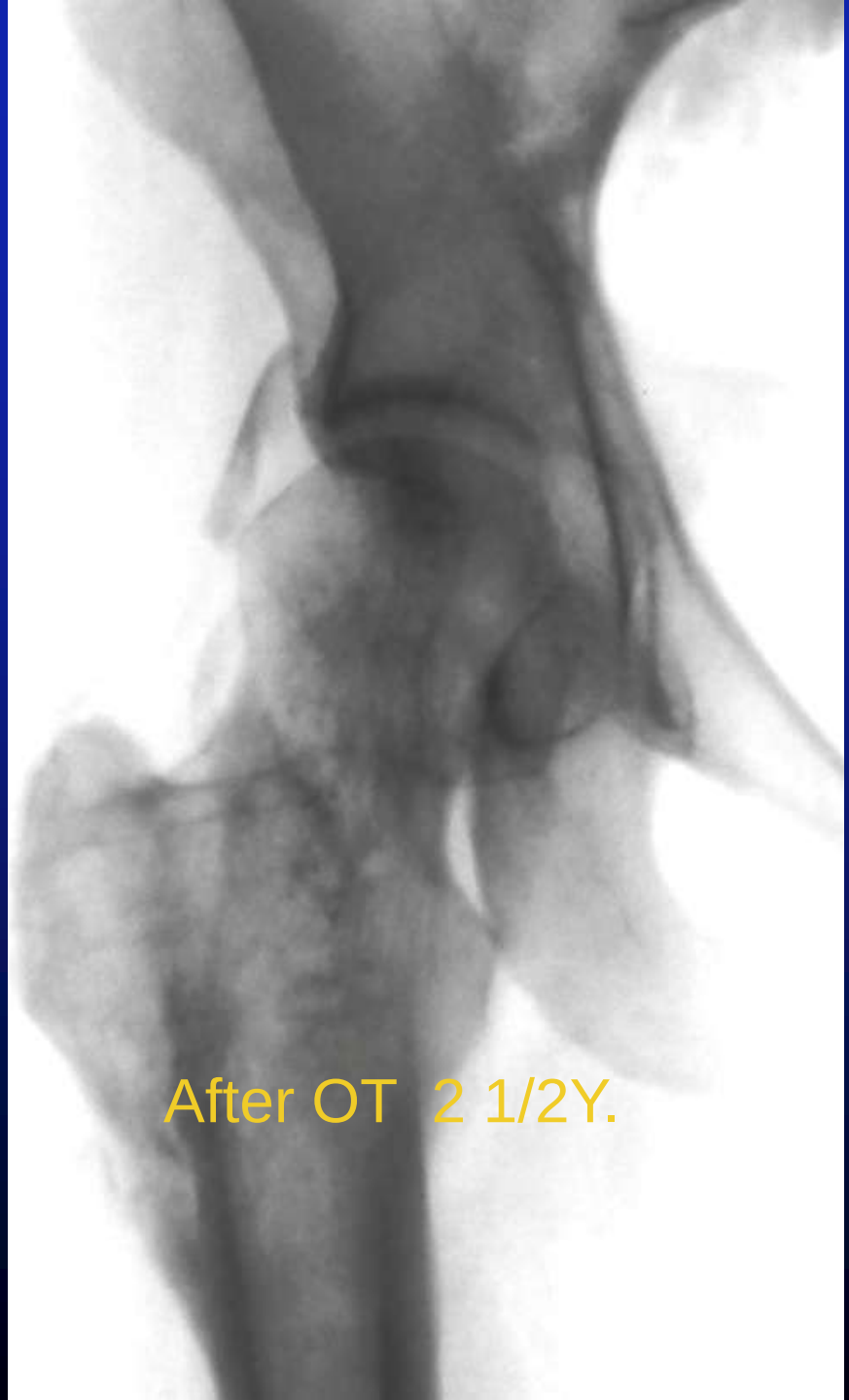
The same operation

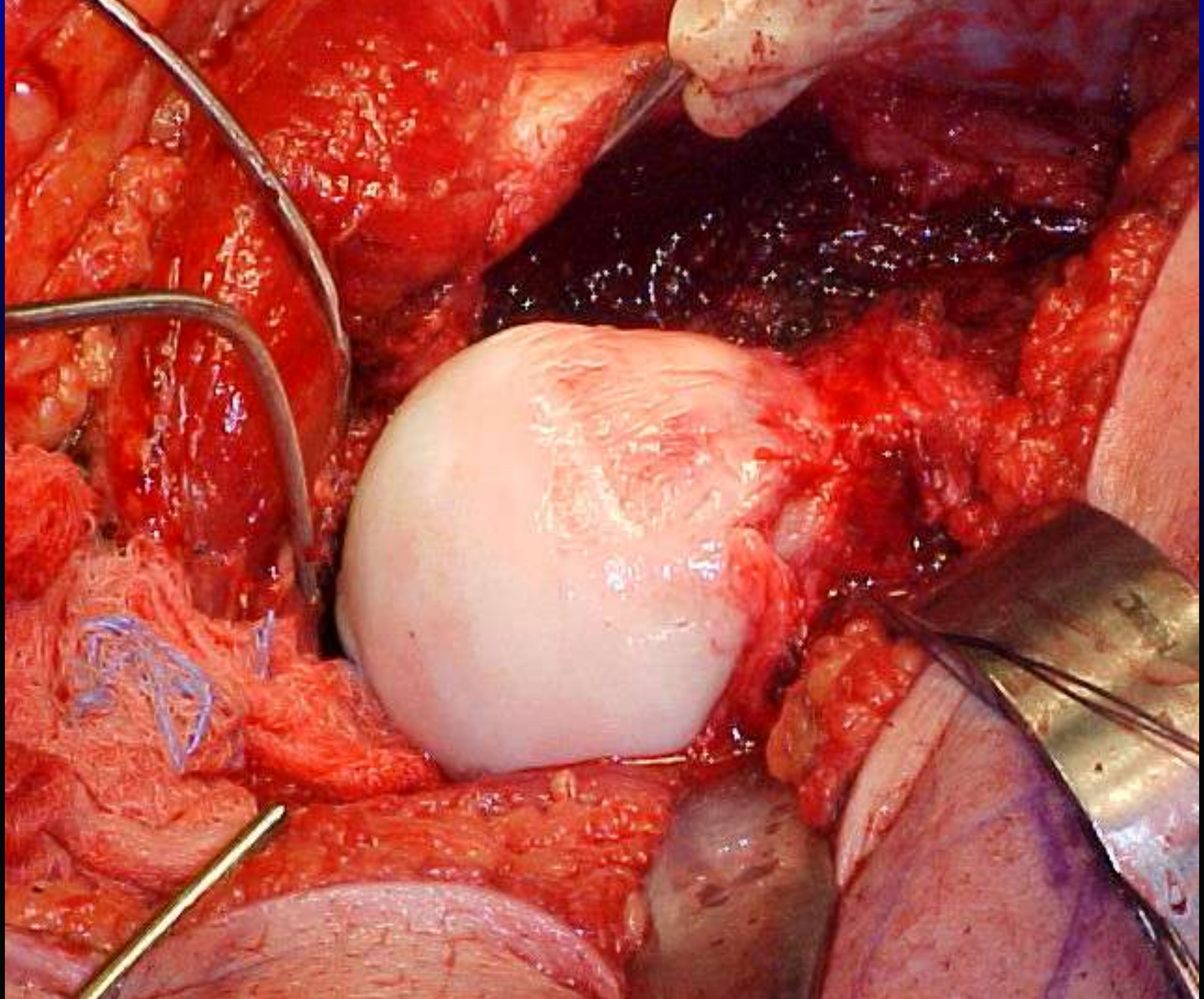
In the mature hip

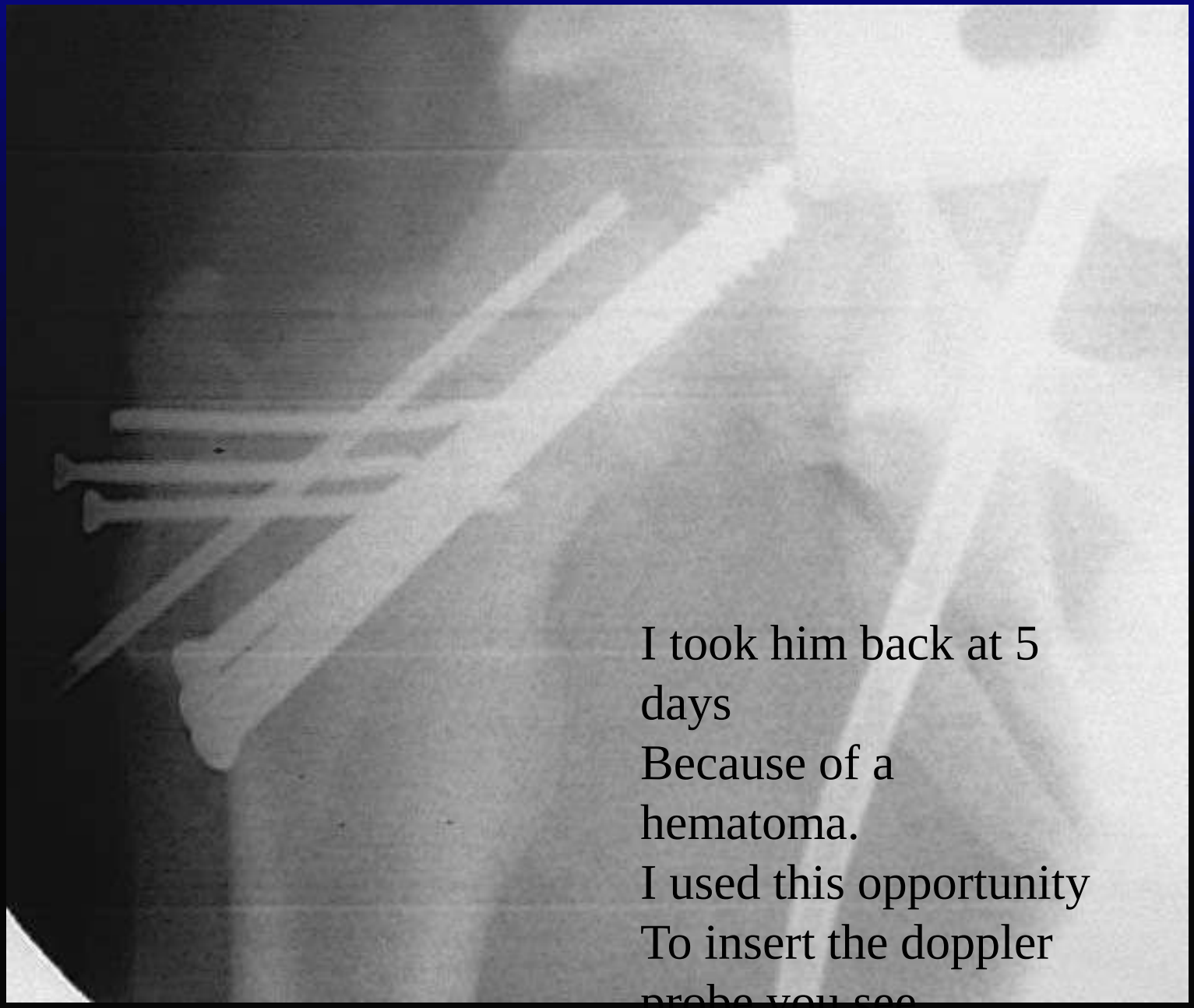

135°

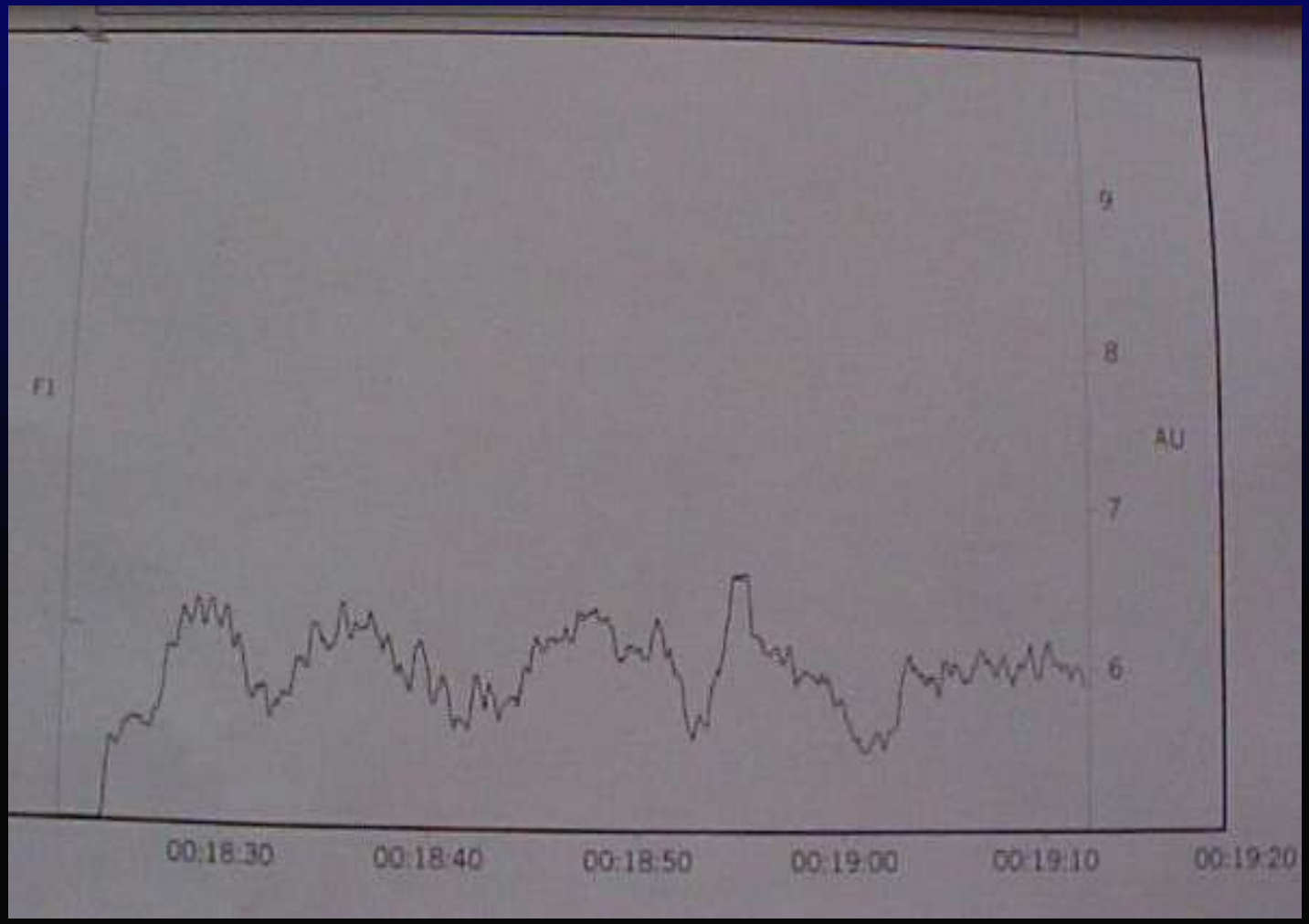



Before OT


After OT 2 1/2Y.




I took him back at 5 days
Because of a hematoma.
I used this opportunity
To insert the doppler probe you see.


F1
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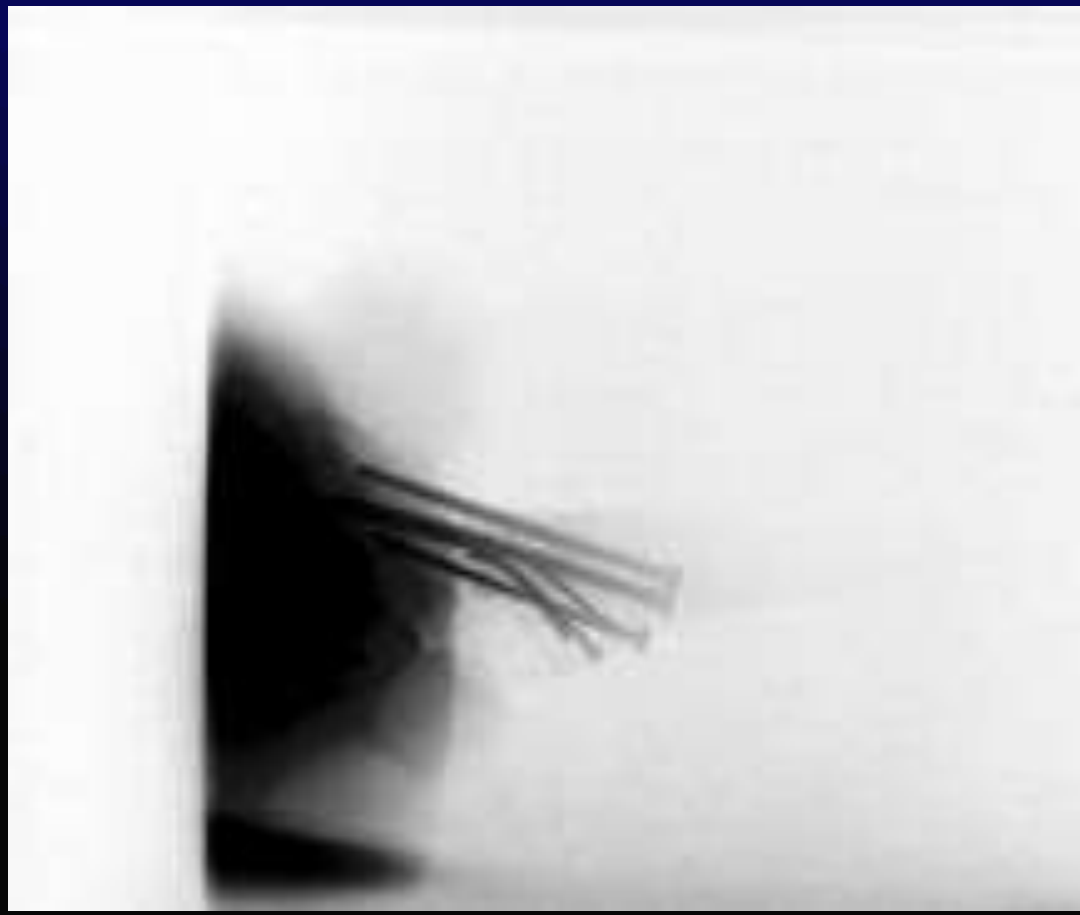
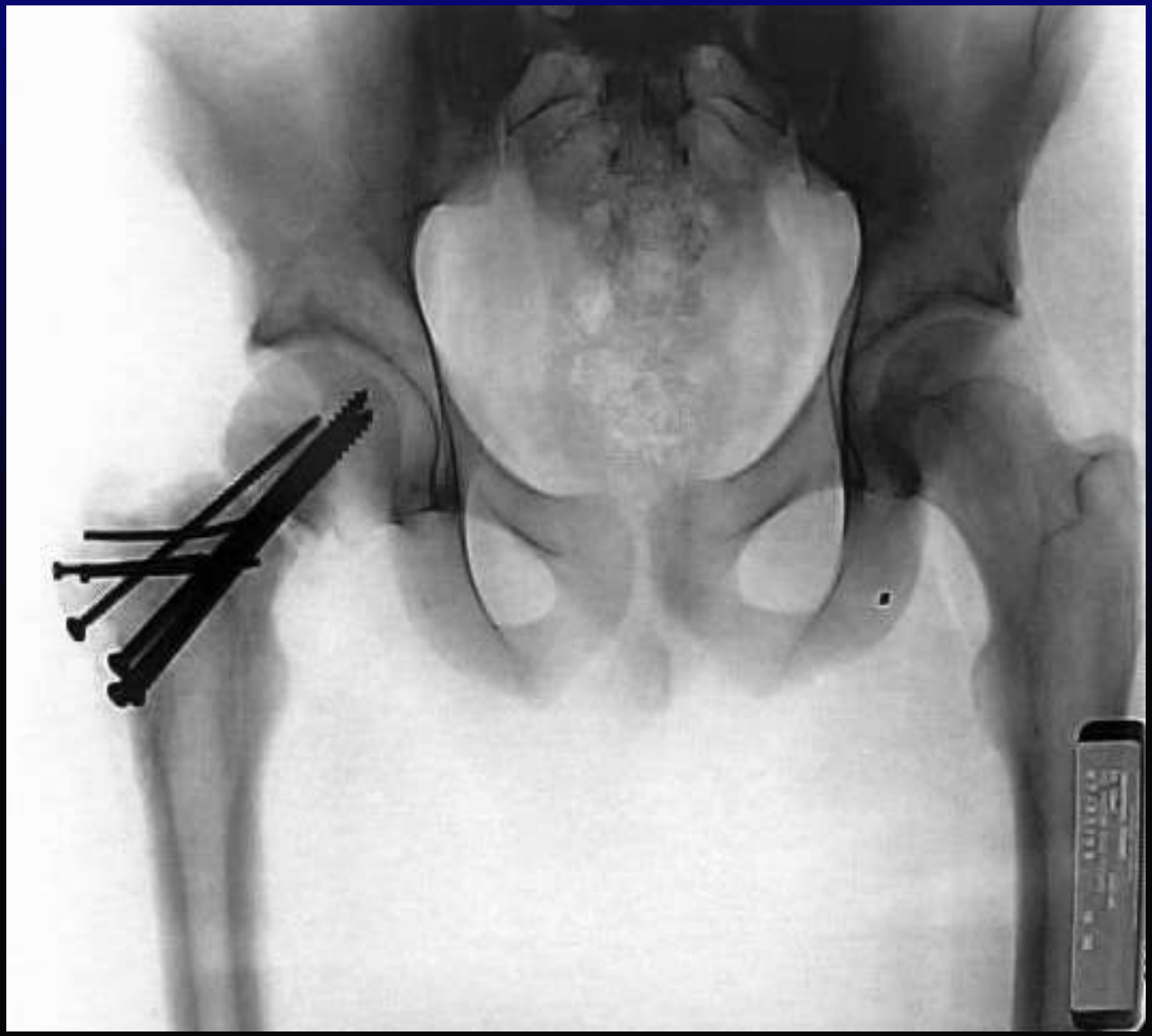
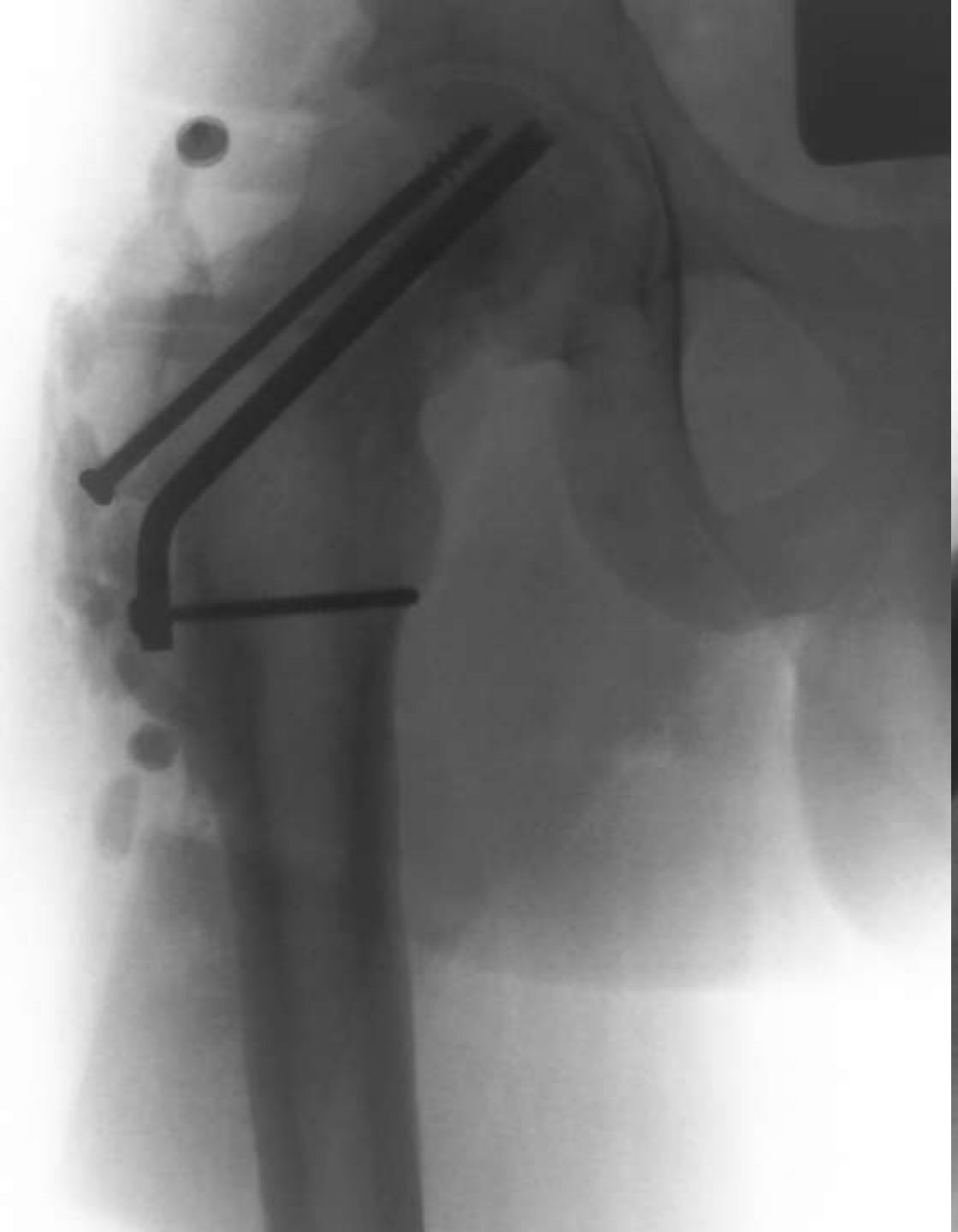
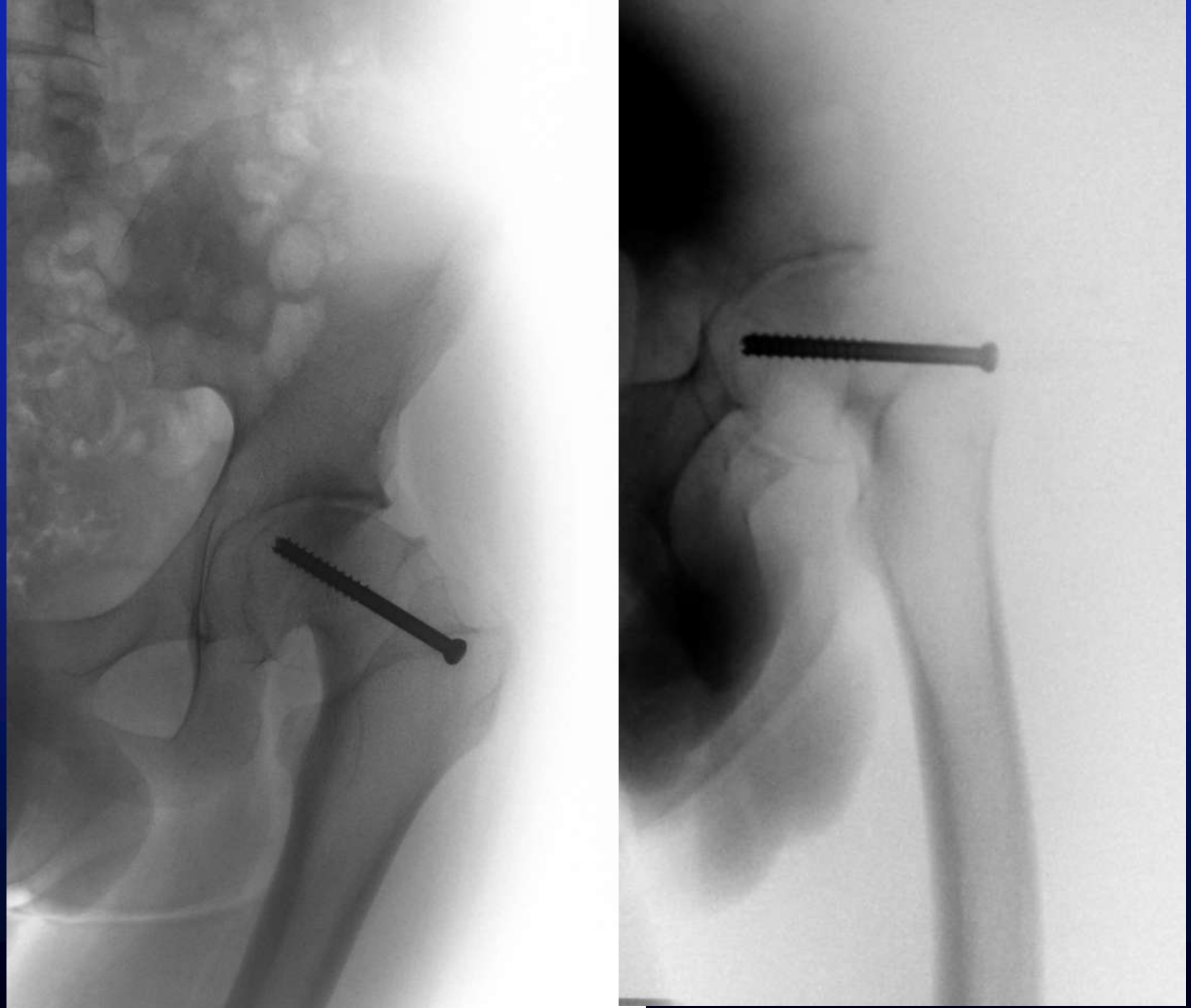
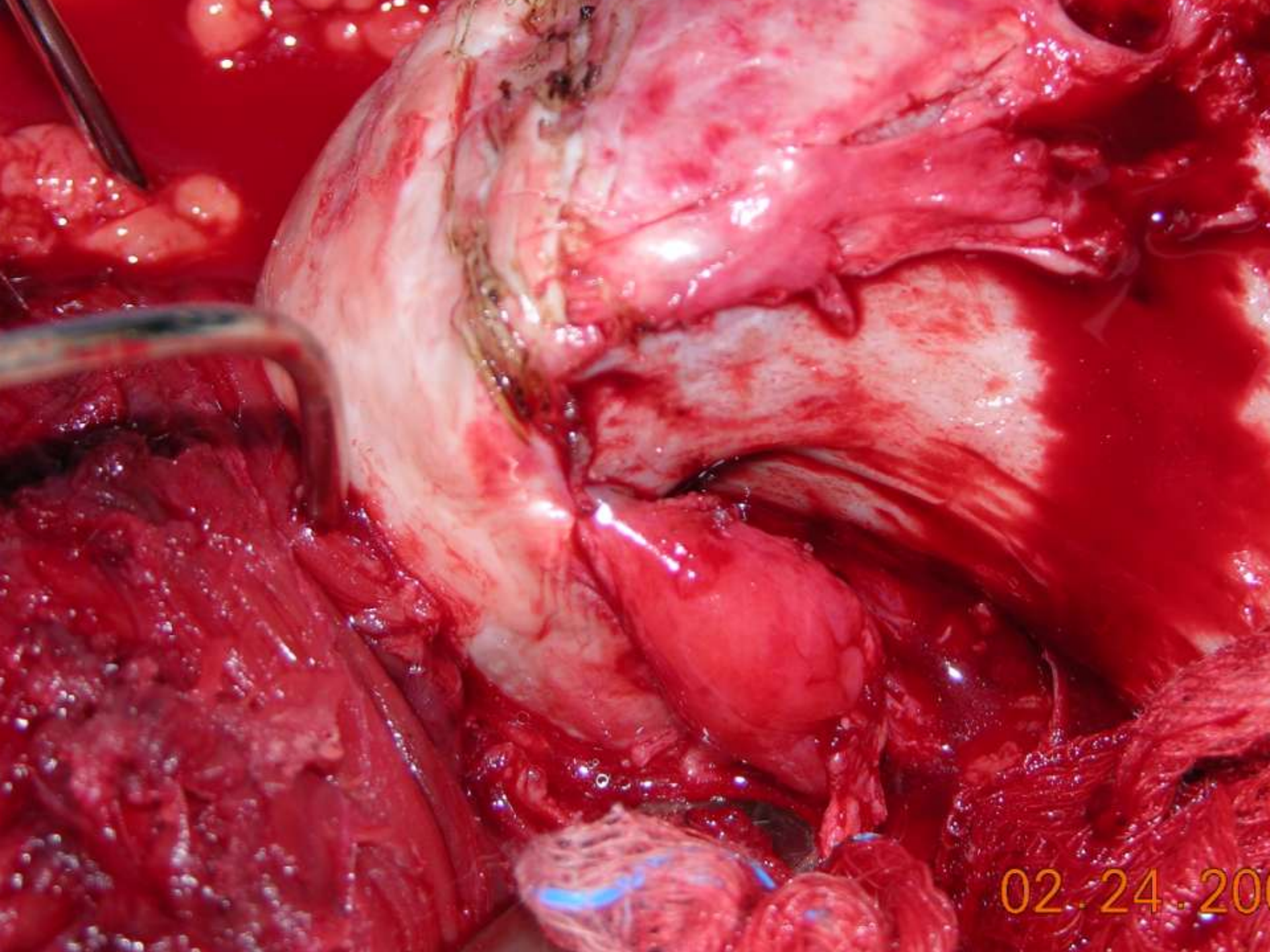
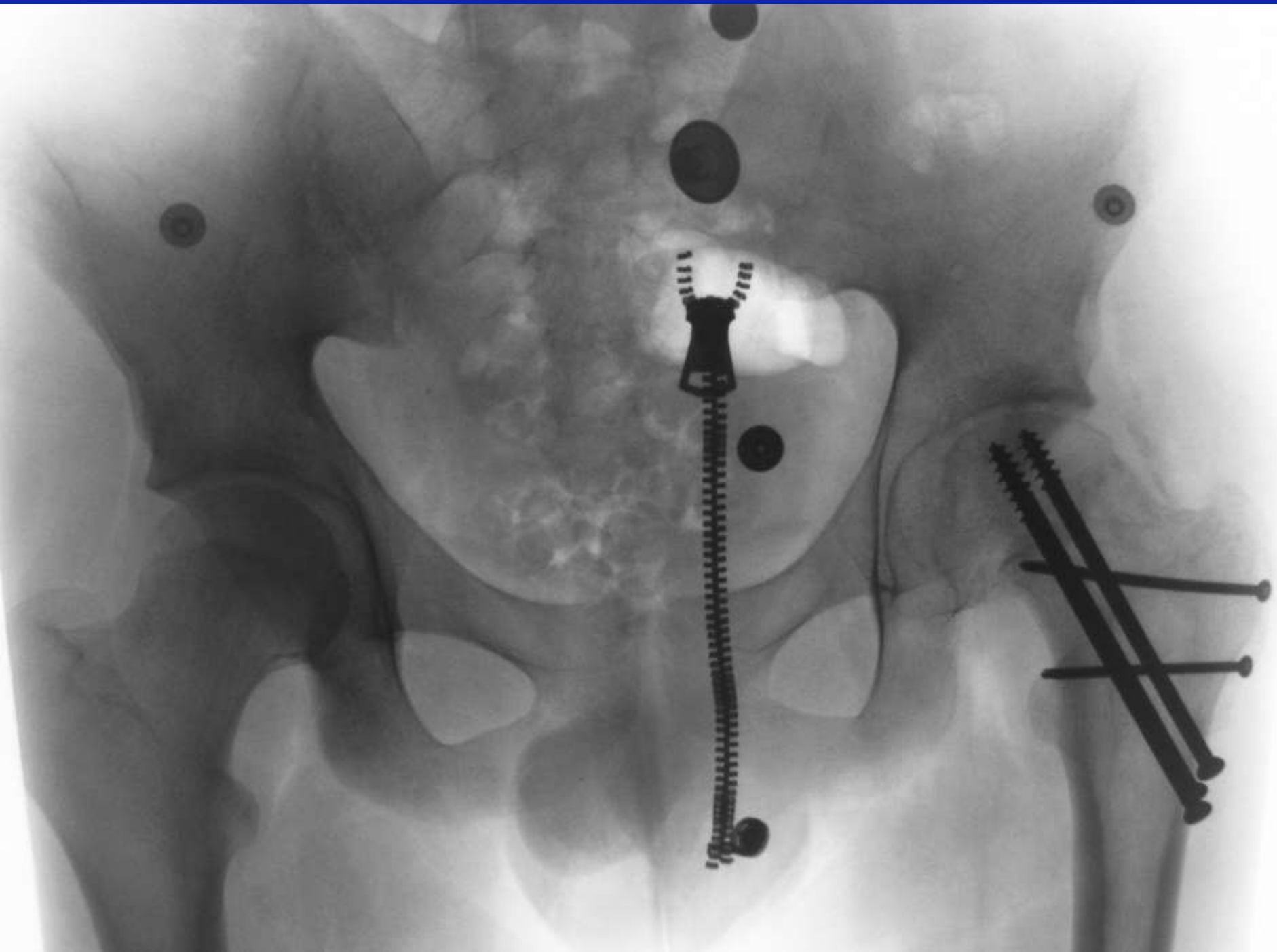


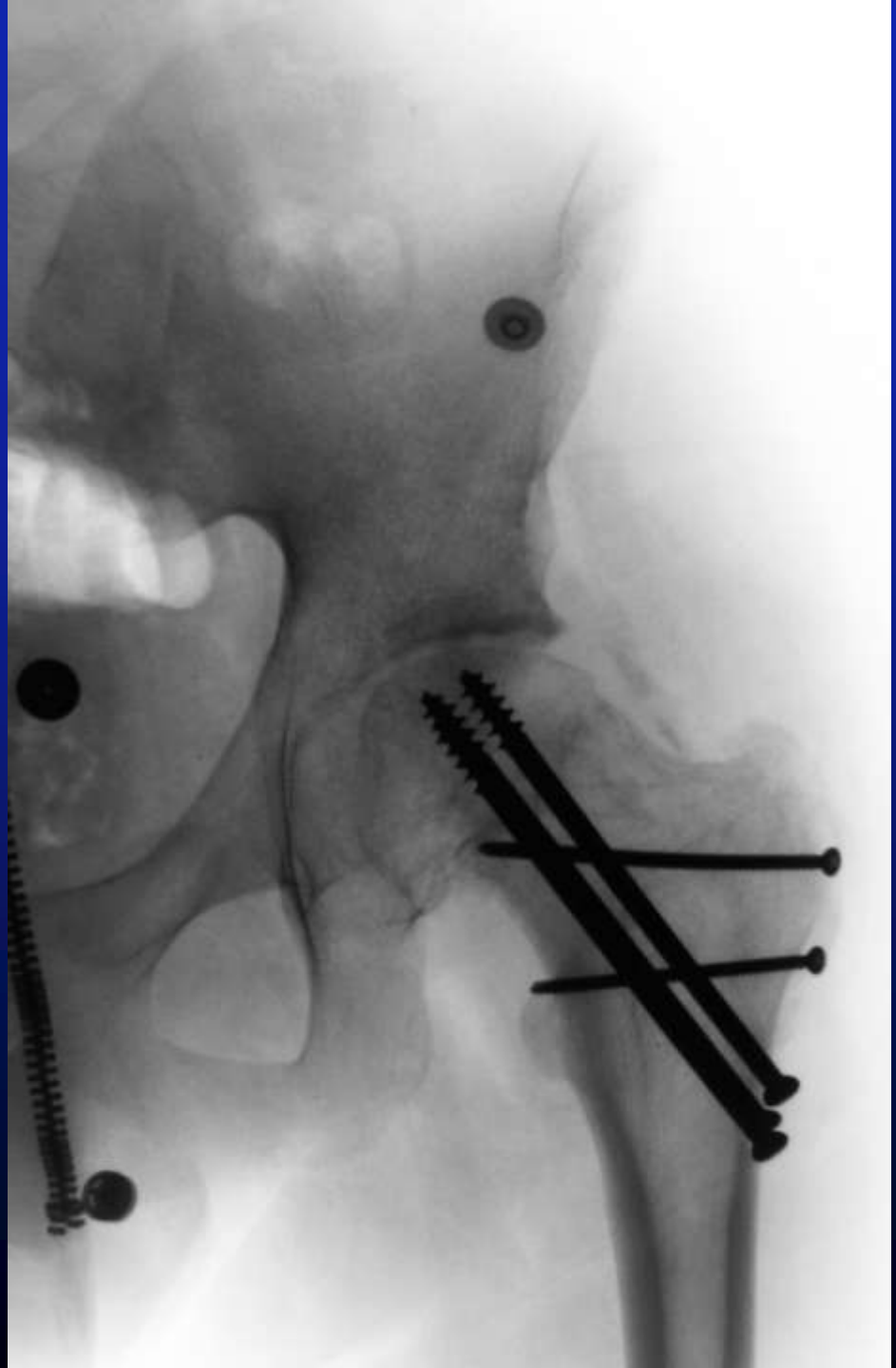


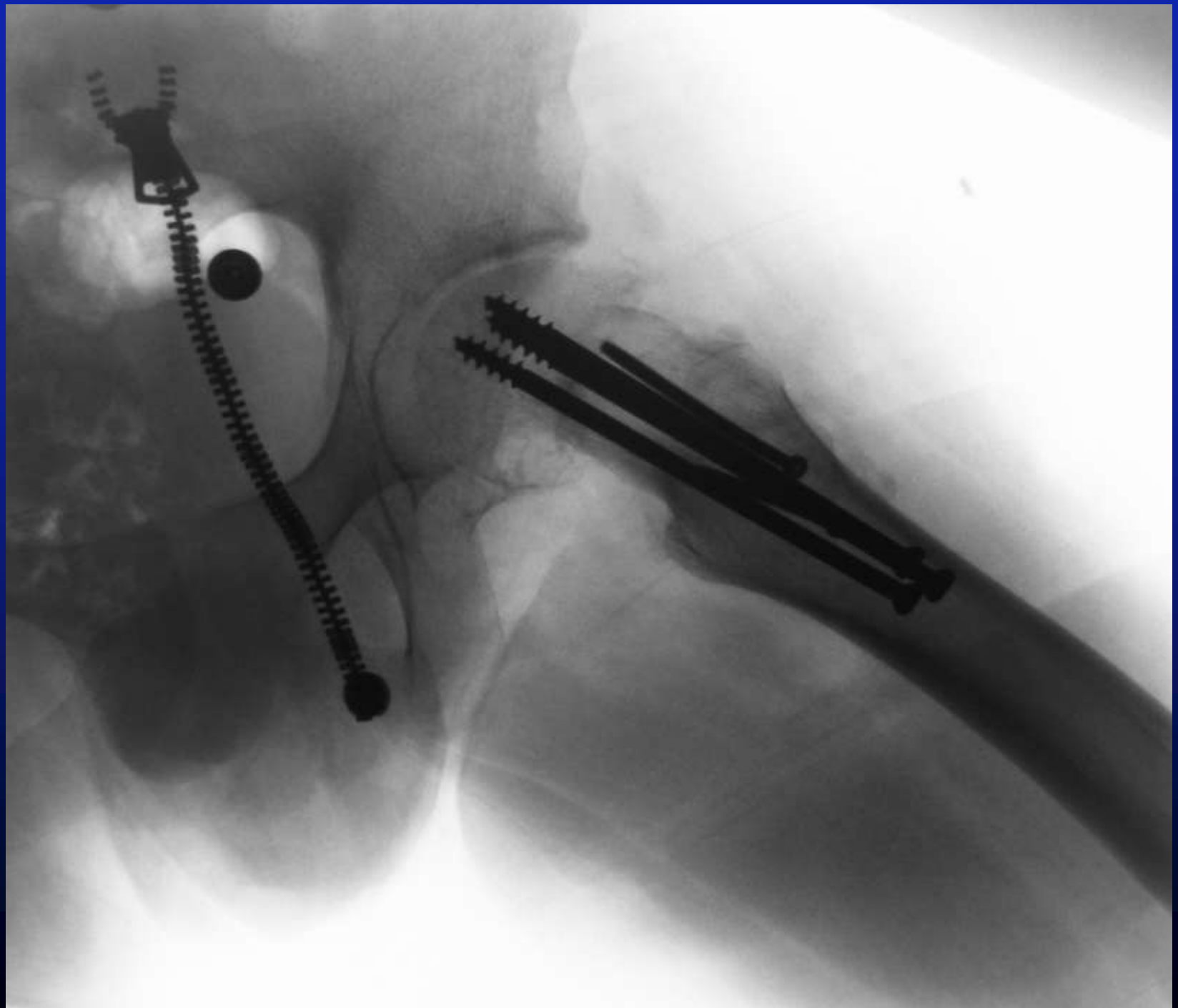


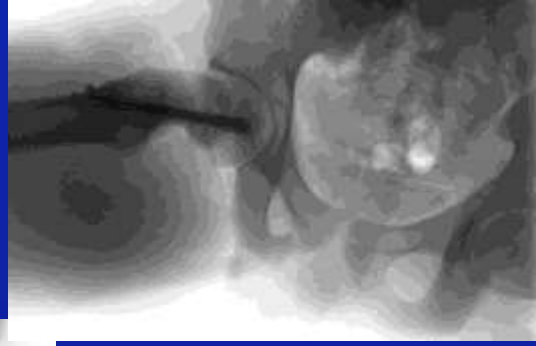

02.24.20







14 year old 6 -1” feet, 220 lbs.
1 year post-SCFE

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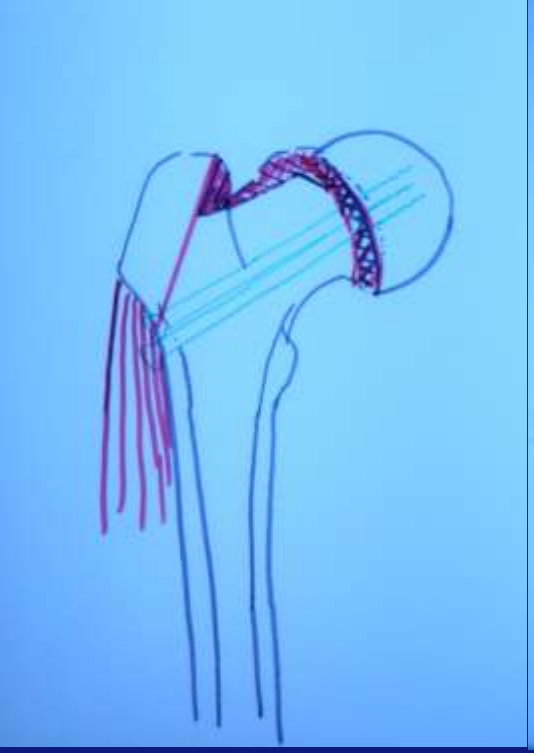

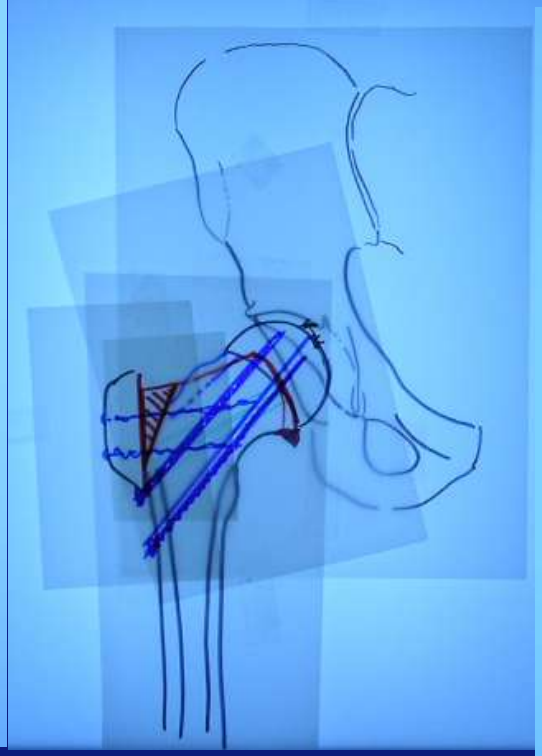

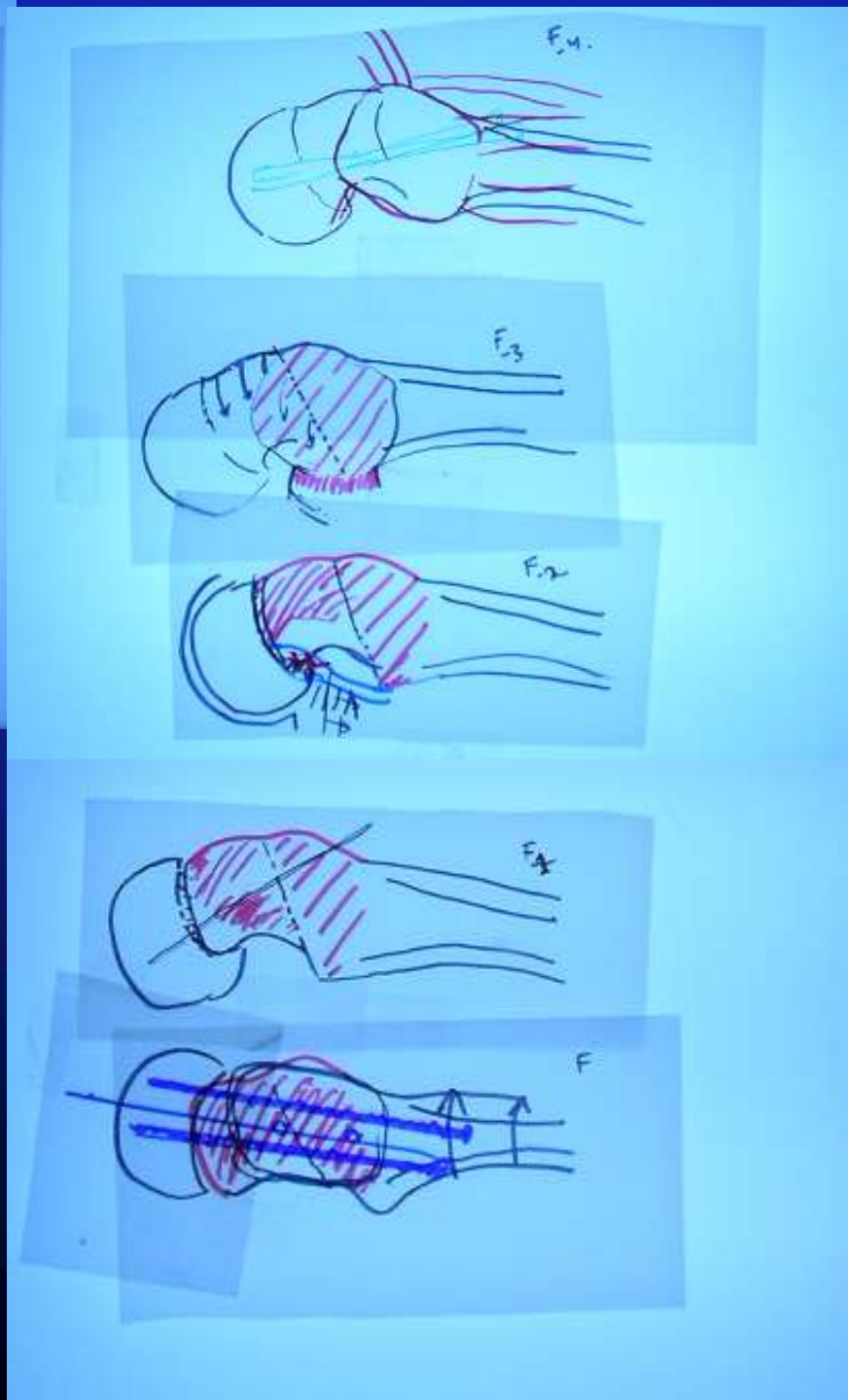
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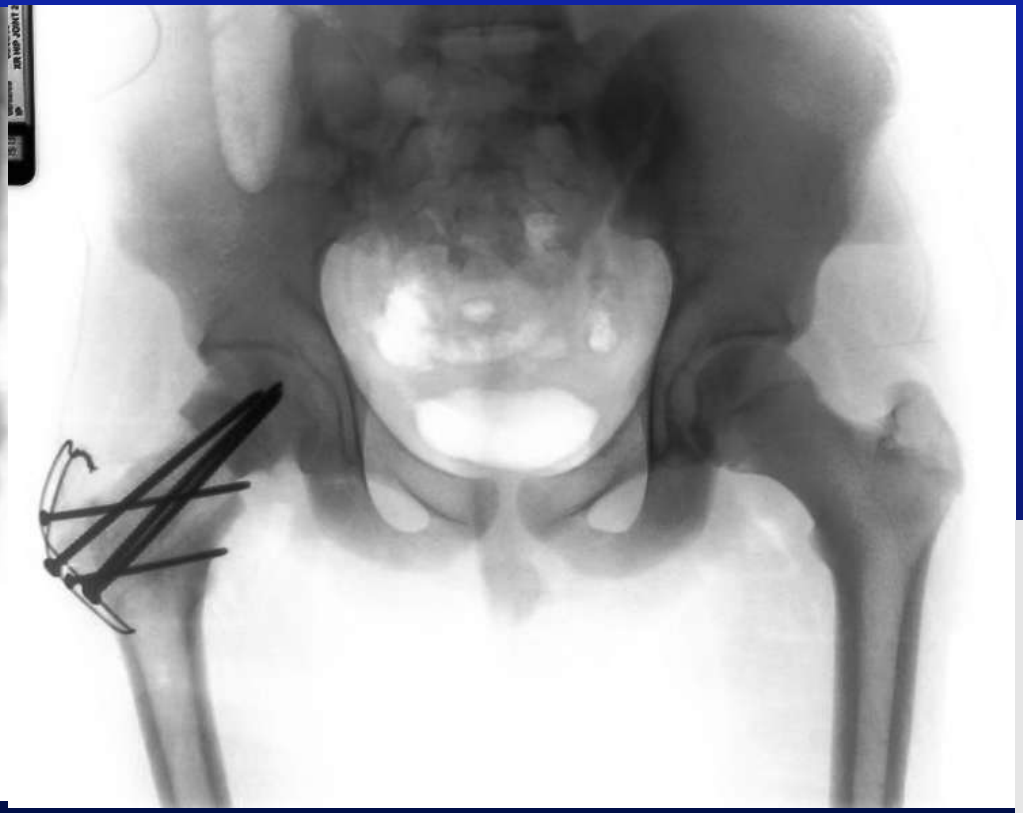
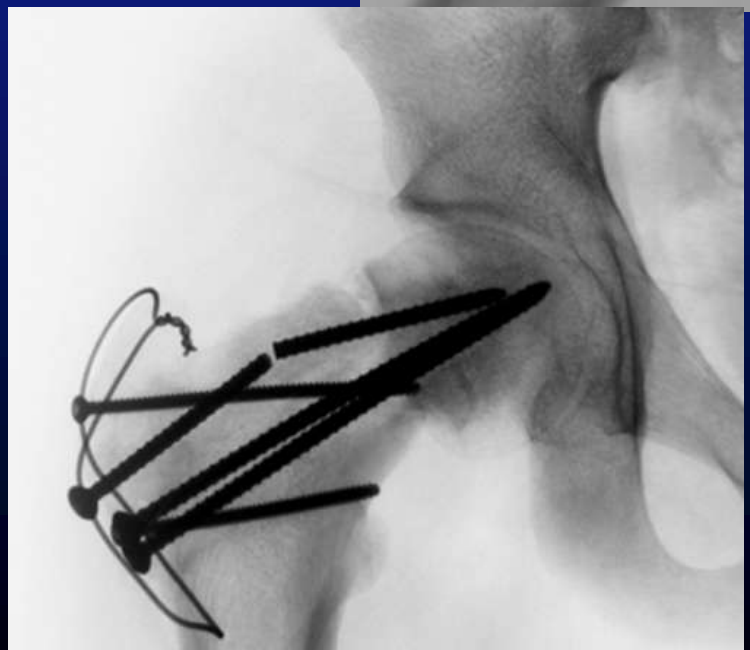
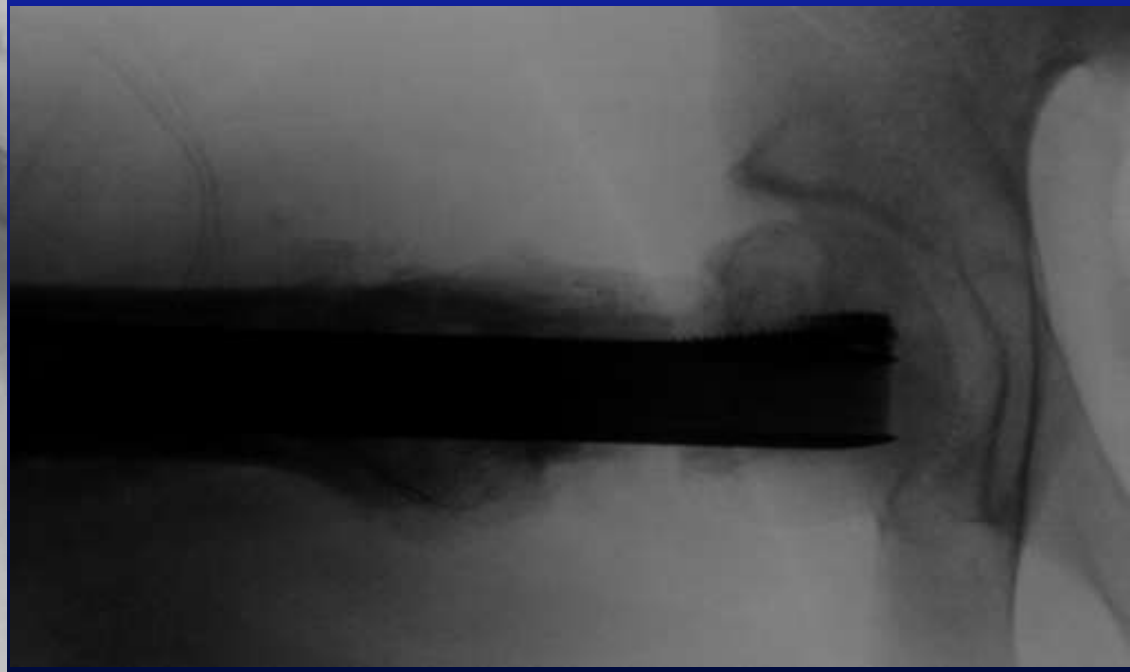
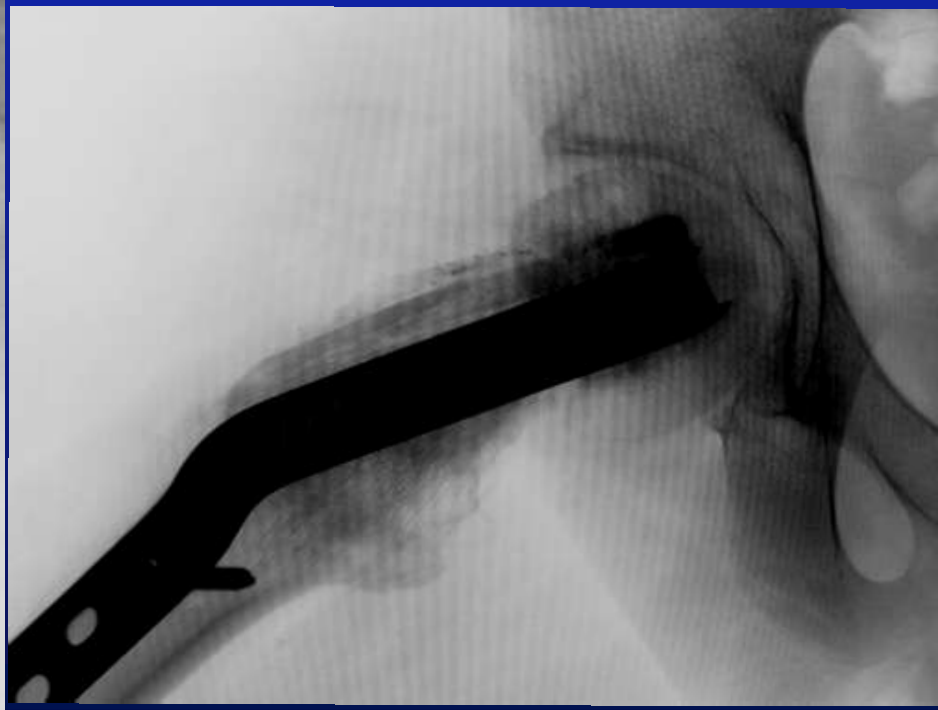
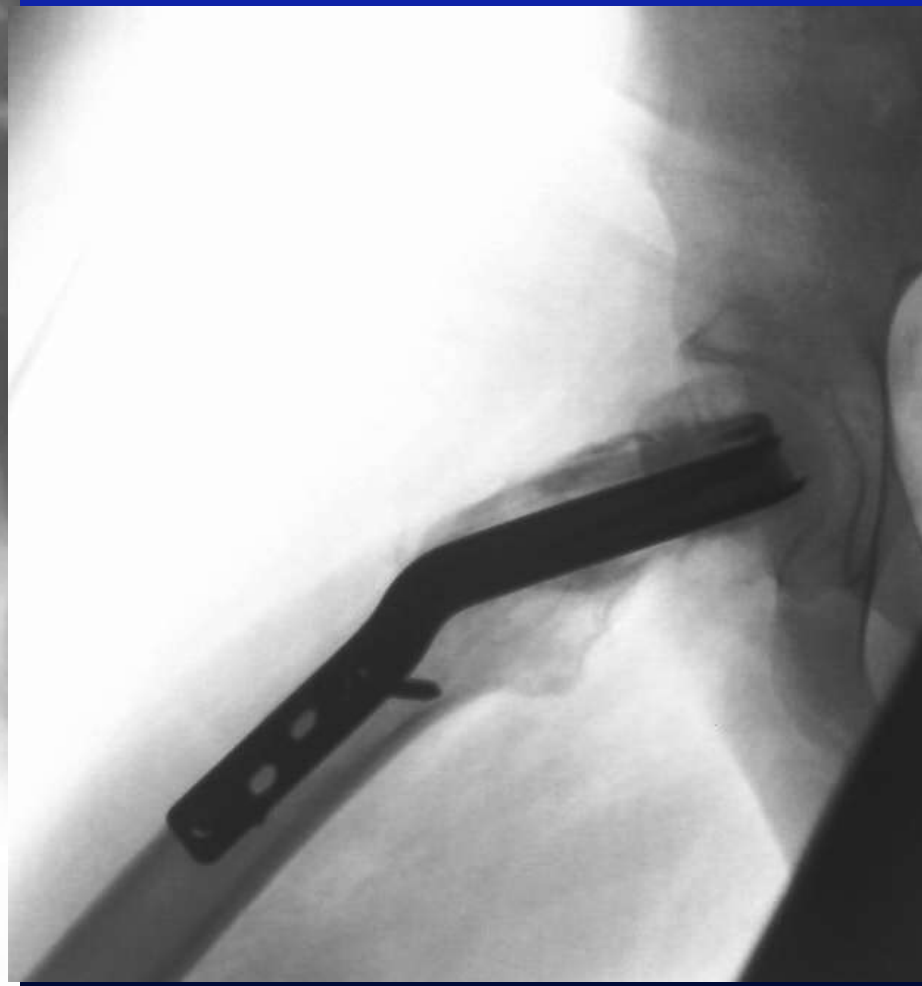


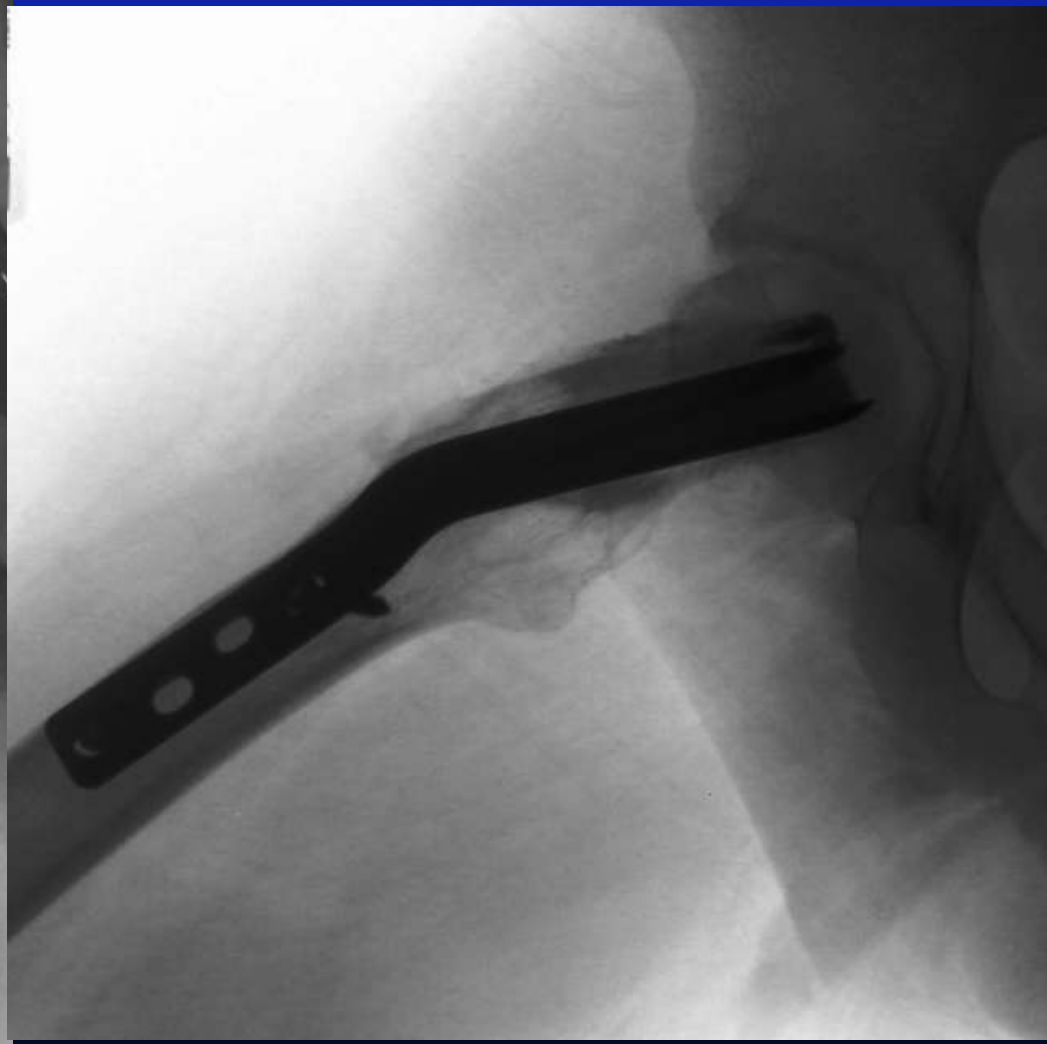





12/5/05
12/5/05







Conclusions

- The femoral neck can be safely approached as long as the vascular anatomy is understood.
- Osteotomy of the femoral neck is possible and safe
- The difficulties I have had has been with

Maintaince of reduction until healing has

Occurred.

- One has to be careful as to not create a future femoral-acetabular impingement.

Conclusions

- There are many possible indications for surgical dislocation of the hip and neck Osteotomy in the young patient.
- In over 300 cases of surgical dislocation, neck lengthening, and neck osteotomy there has been no avascular necrosis of the femoral head!

THANK YOU!

Epiphyseolysis

- 17 year old
- 6 feet 3 inches tall, 247 lbs
- 2 years post slip
- Pain and Deformity