Introduction to musculoskeletal system.

20-2-2014

What is the meaning of Orthopaedics?

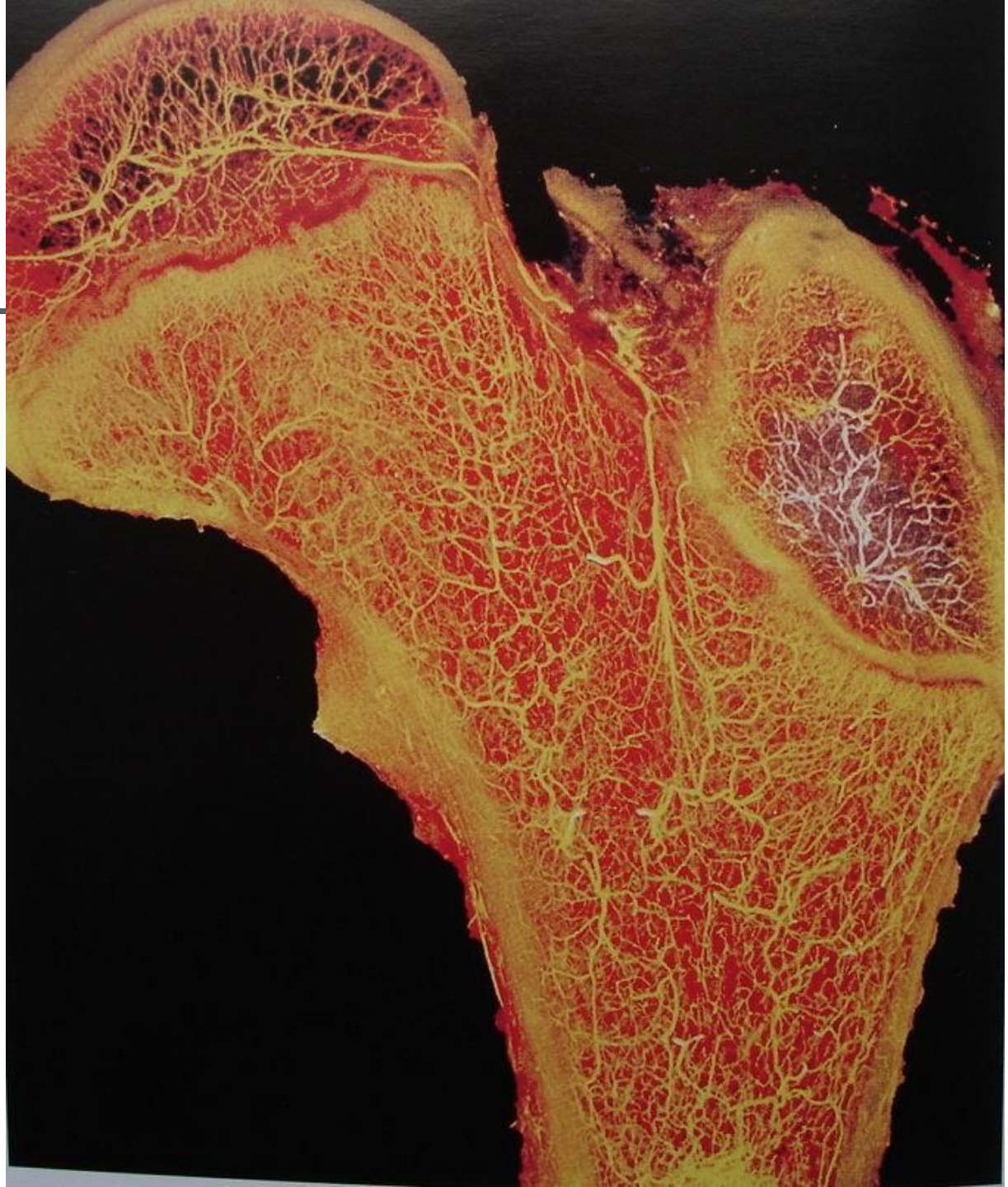
Figure 108 Nicholas Andry (1658–1747)

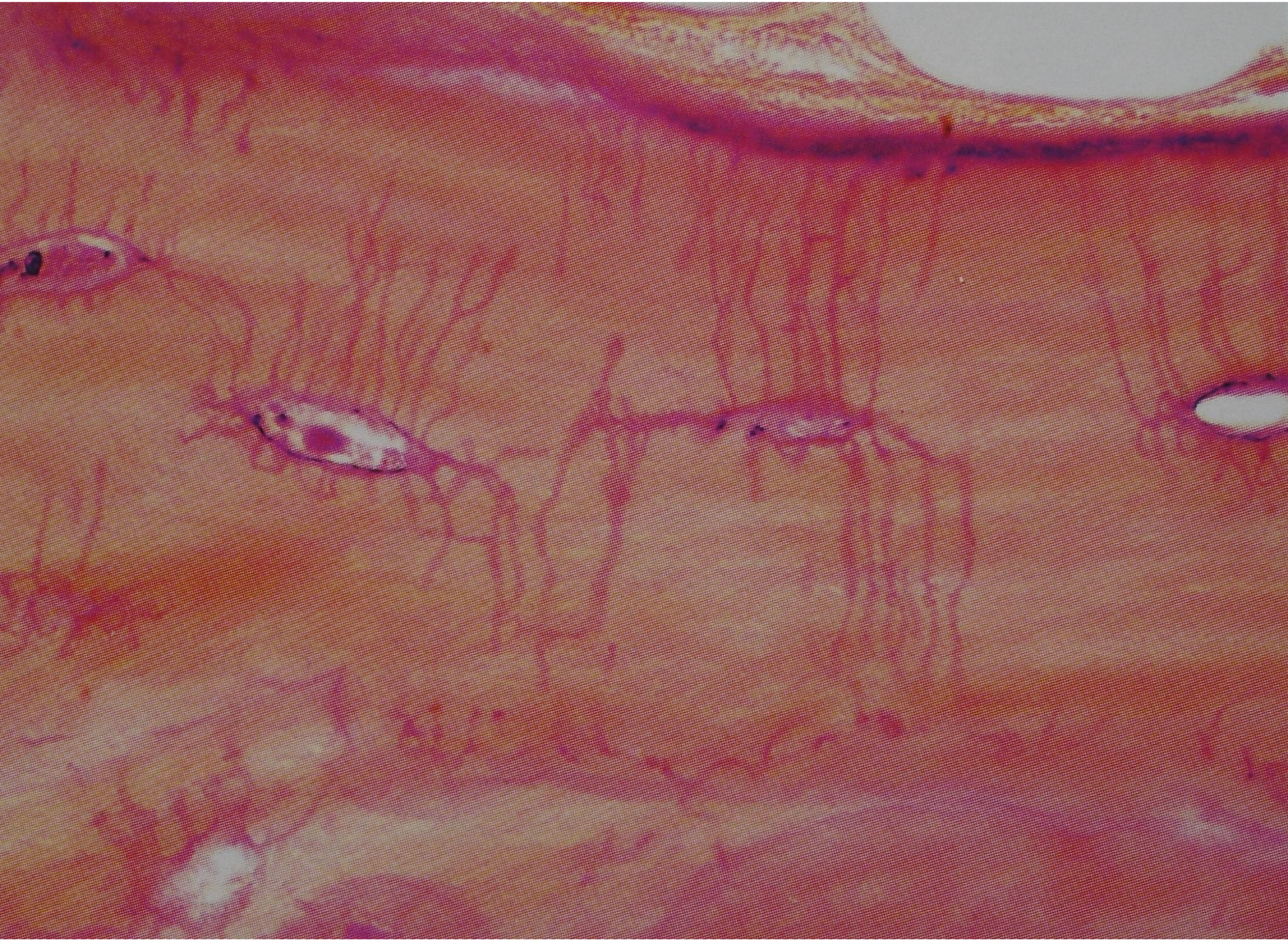
Orthos → Straight
Paedis → Child

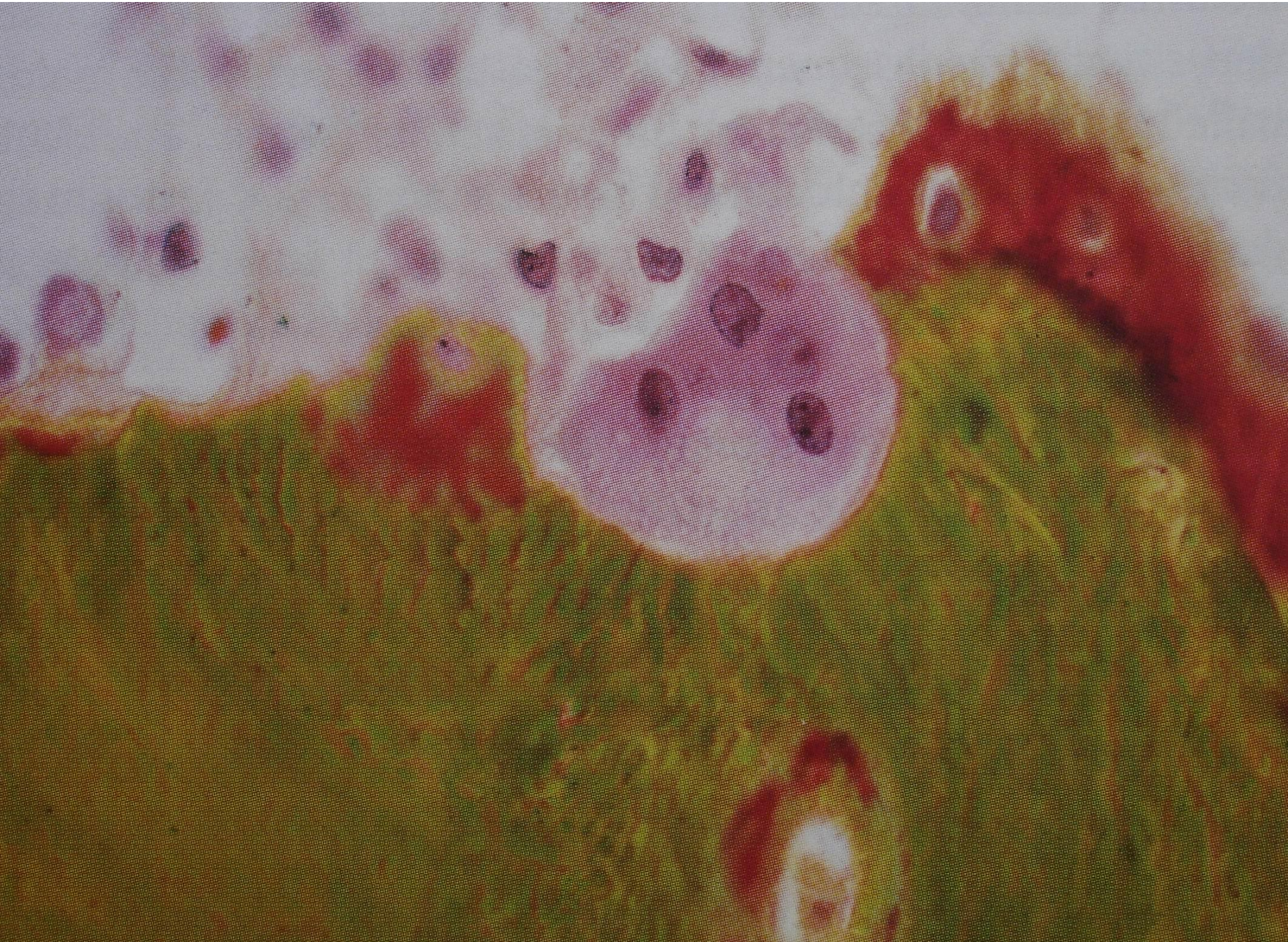
Orthopaedics

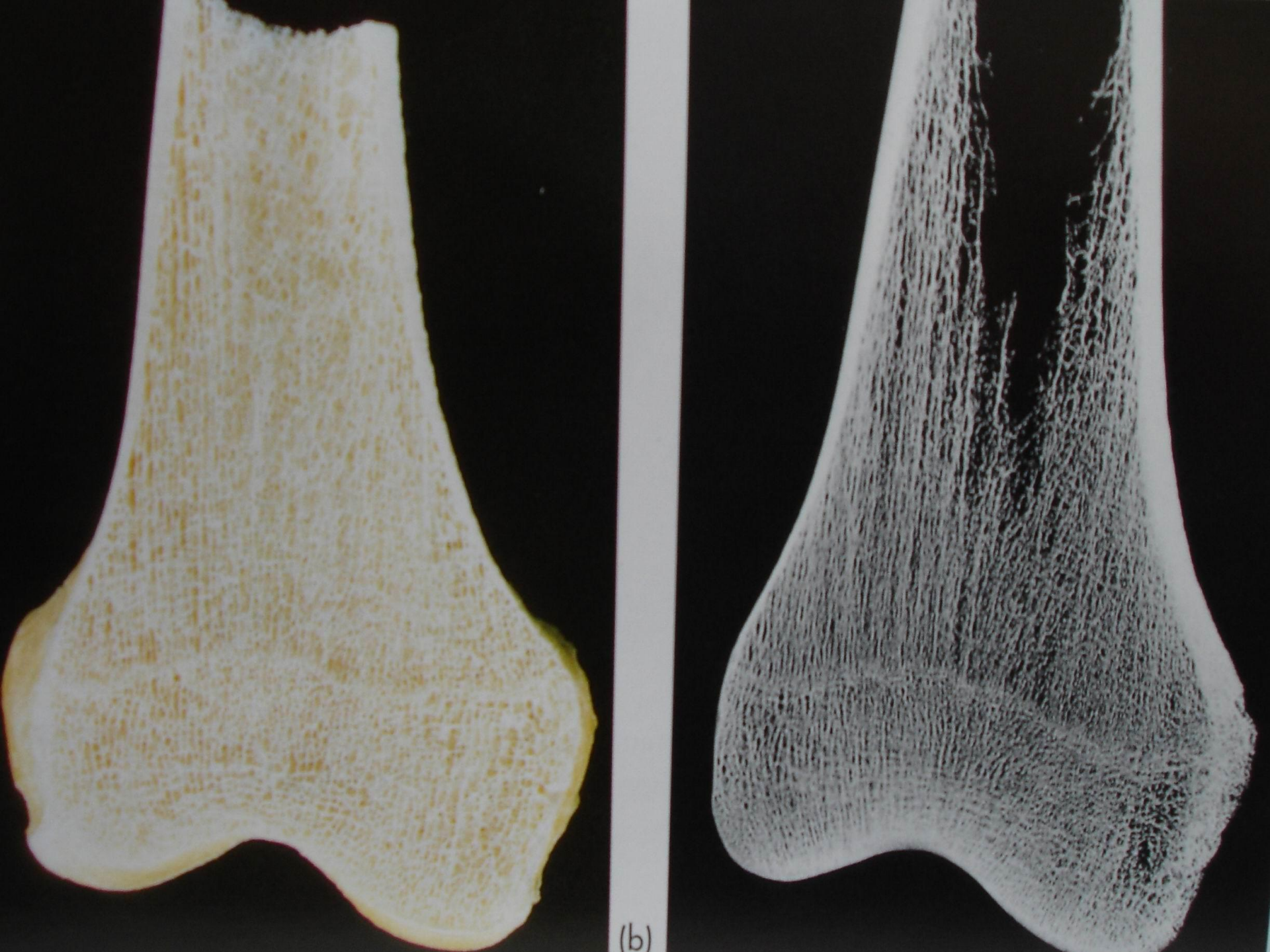
- Ortho.
- Paedic.
- Trauma.

- Quality of life.
- Pain.
- Deformity.
- Loss of function.





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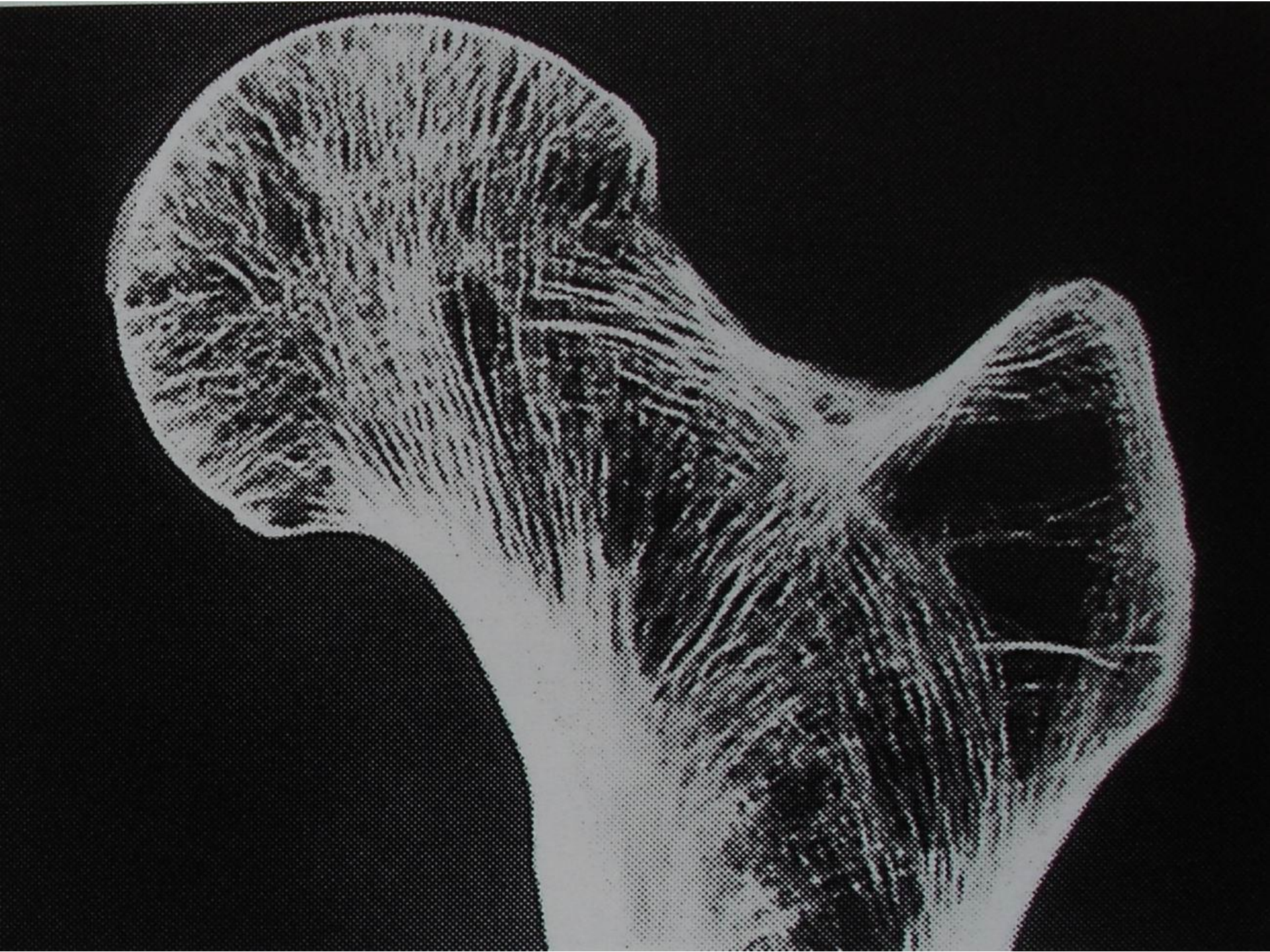
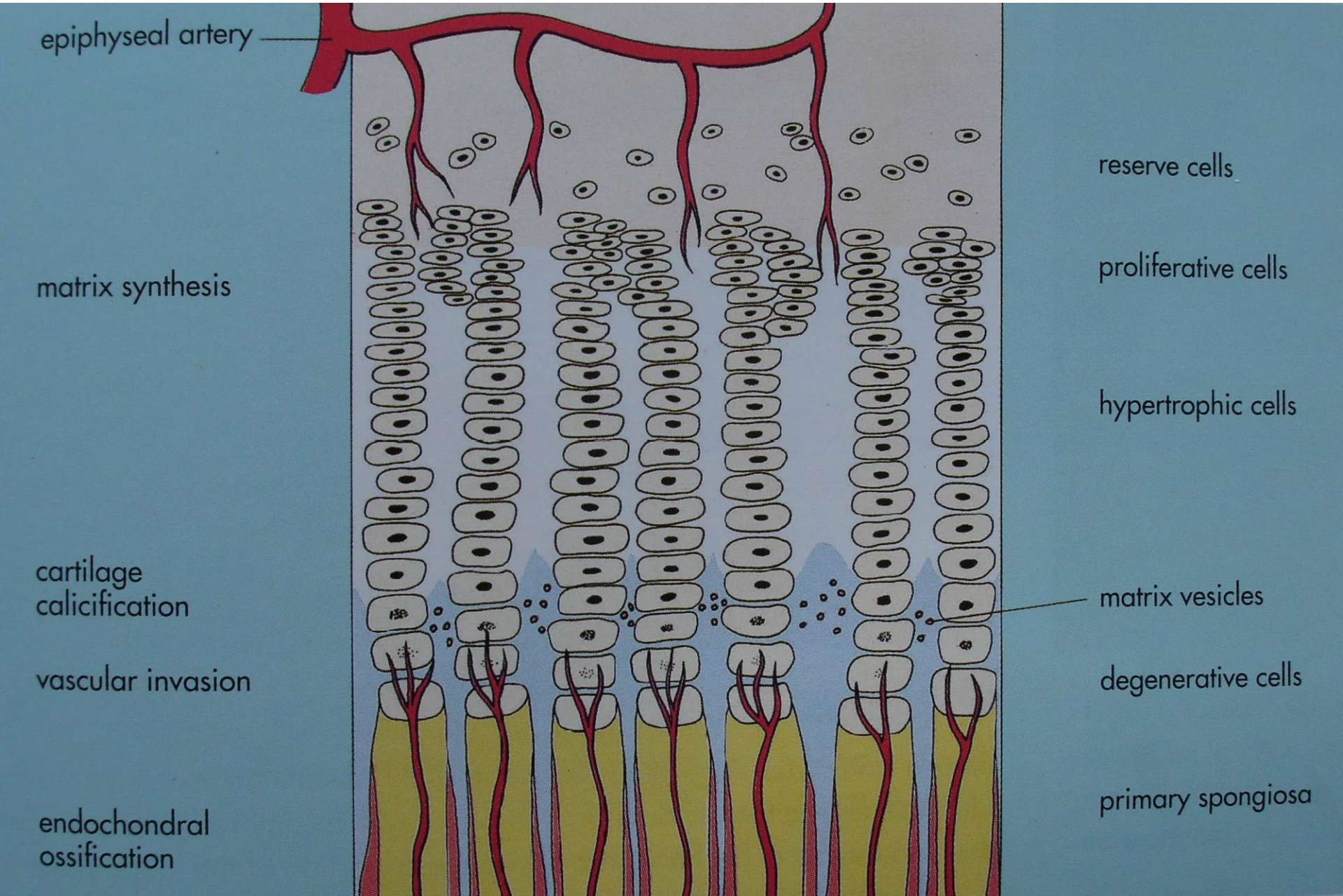



epiphyseal artery
matrix synthesis
cartilage calicification
vascular invasion
endochondral ossification
reserve cells
proliferative cells
hypertrophic cells
matrix vesicles
degenerative cells
primary spongiosa

Examination

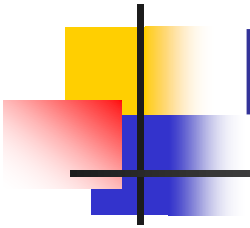
- Look.
- Feel.
- Move.

Look:

- Deformity.
- Muscle waisting.
- Scars.

Feel:

- Temprature.
- Tenderness.
- Masses.
- Anatomical landmarks.



Move:

- Active.
- Passive.

Causes of Orthopaedic diseases

Congenital

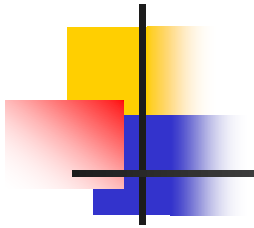
- **1-Genetic 2-Drugs**
- **3-Radiation**

Developmental

- **CTS**
- **Tendons**
- **DDH**

Acquired

- **Trauma**
  Infection
- **Paralysis Arthritis**
- **Neoplasm**

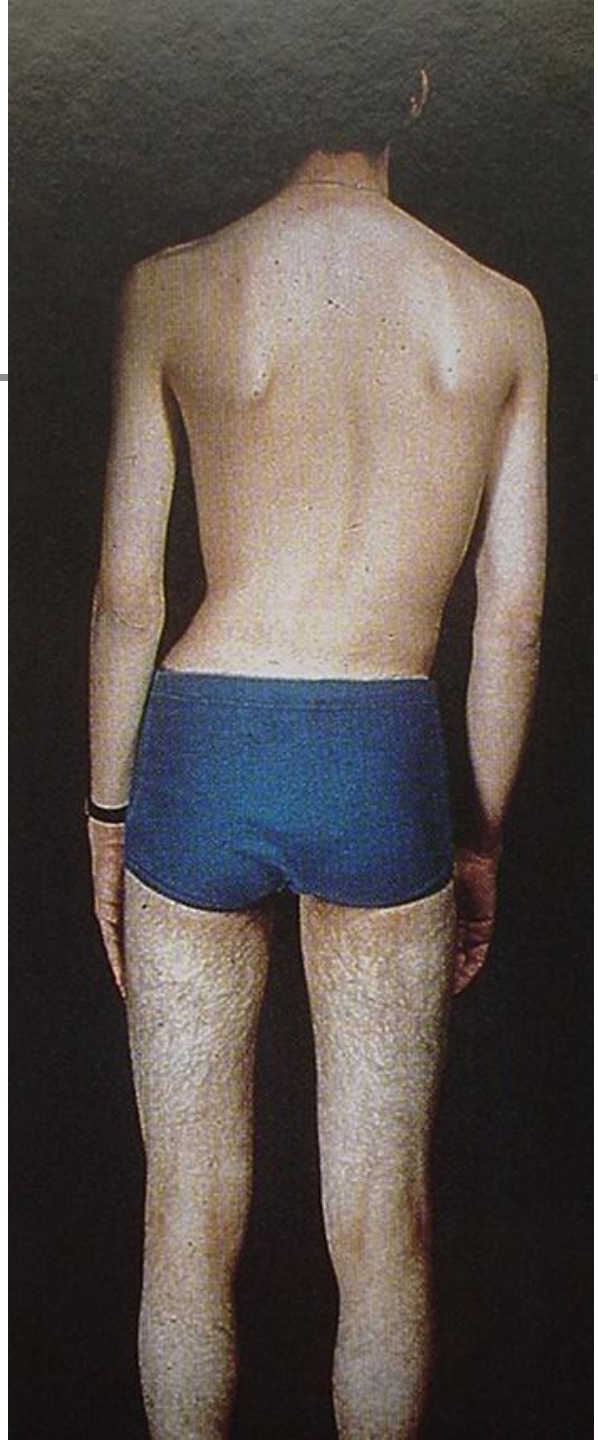


- **Faulty gene 30%**
- *** Environmental**
- ***Teratogenic agents***
- *** Syndromatic**
- *** Unknown 60%**

- 1-Thalidomide Tragedy - 1960s

- 2-Chernobyl

Russia

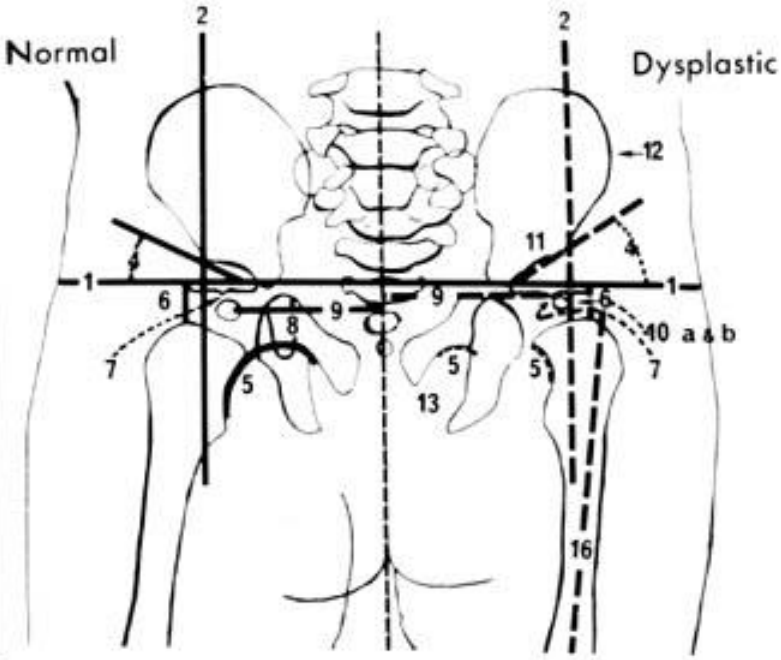


A

B

C

A



B

Rheumatic:

04

BROOKS, PAULINE
MRN 0093978
*29-Jun-34

St.James's Hospita

02-Sep-04
TA 11:14:33 AM

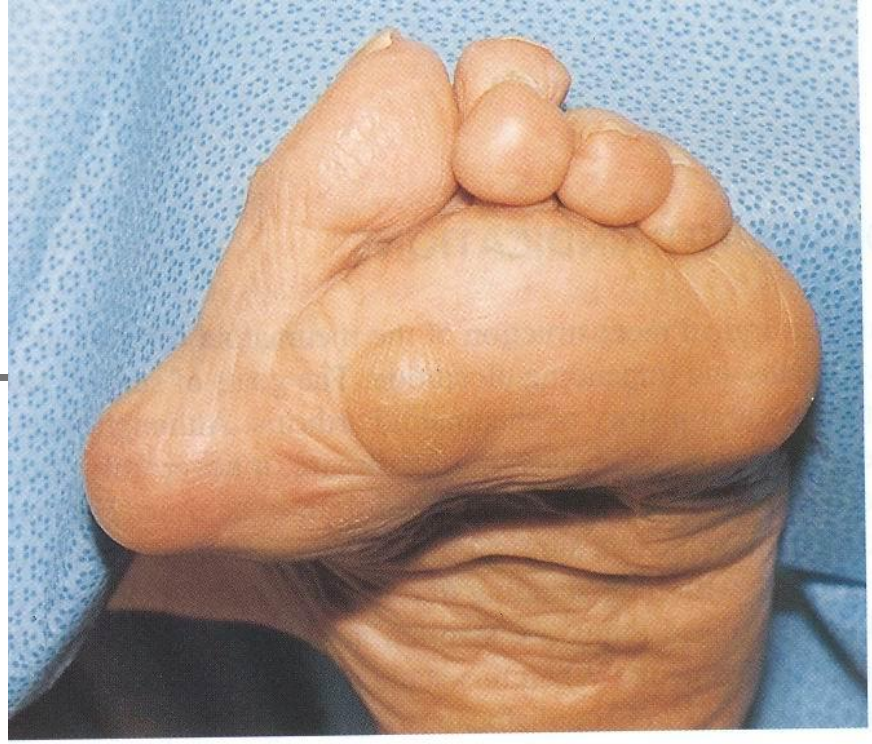
Hand Lat
Cu none
kV 45.0
mAs 1.97
DAP 0.5
EXI 362

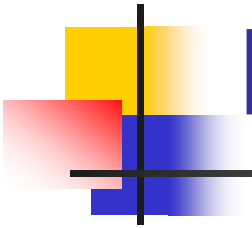
Scale 100%
W 2
C 1

BROOKS, PAULINE
MRN 0093978
*29-Jun-34

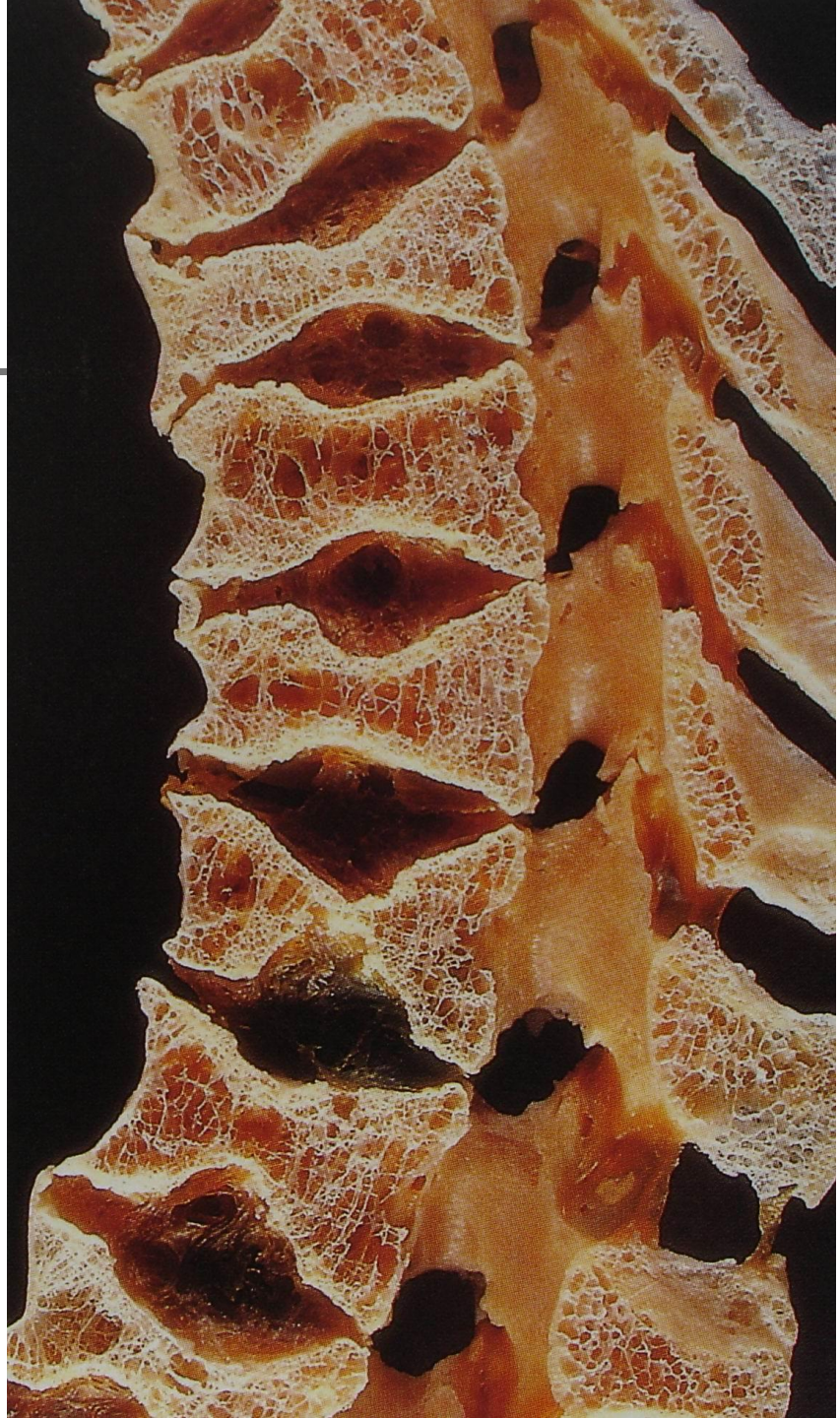
St.James's Hos

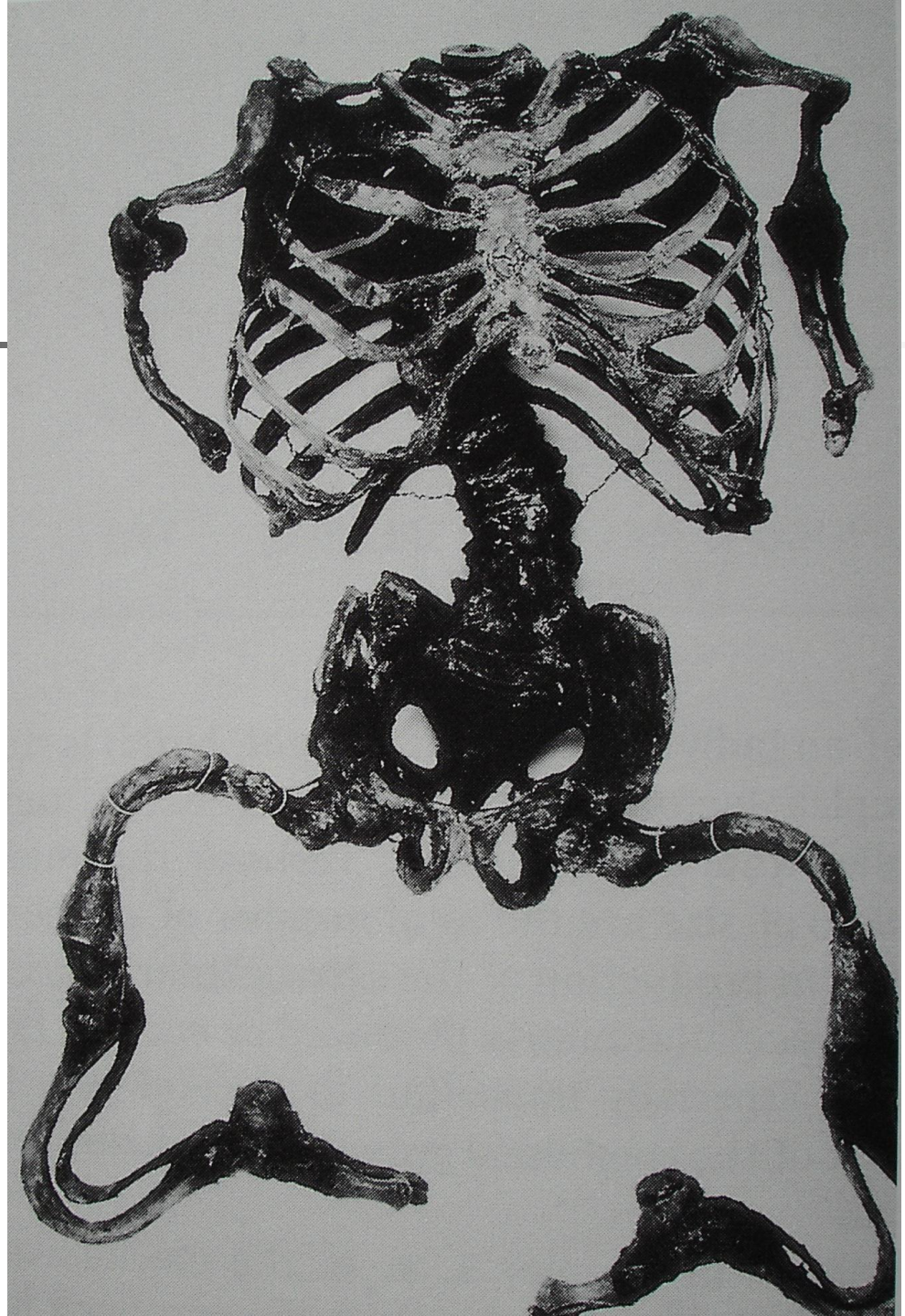
02-Sep-04
TA 11:15:28 AM



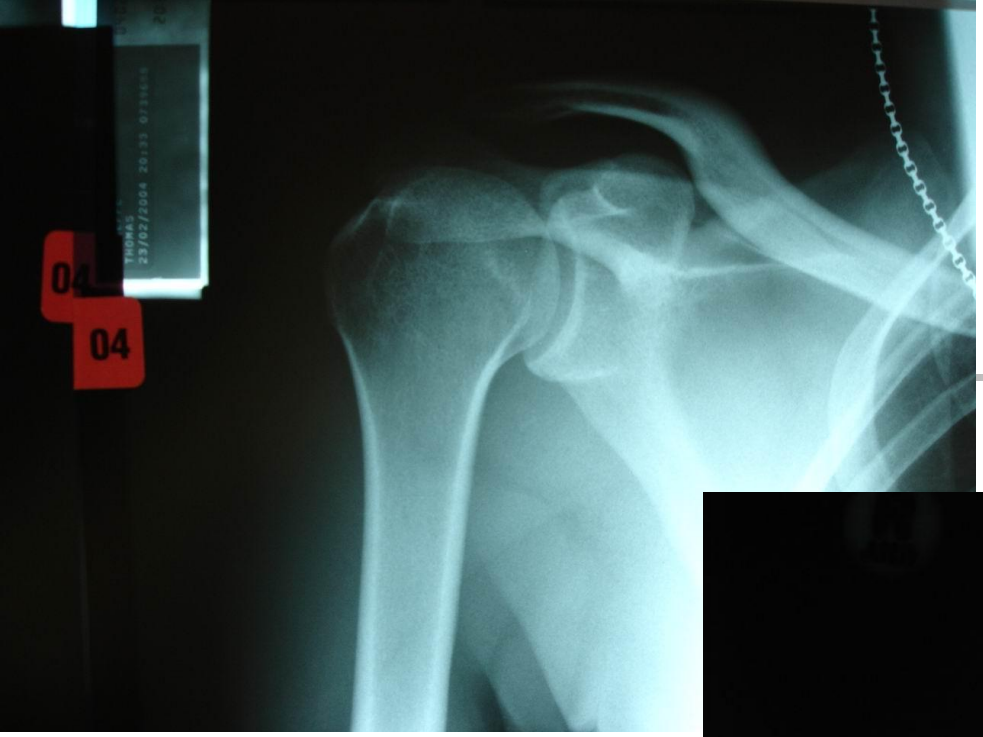


Metabolic:





Traumatic: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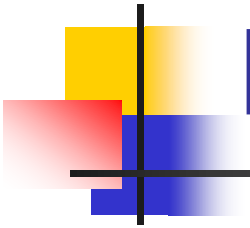
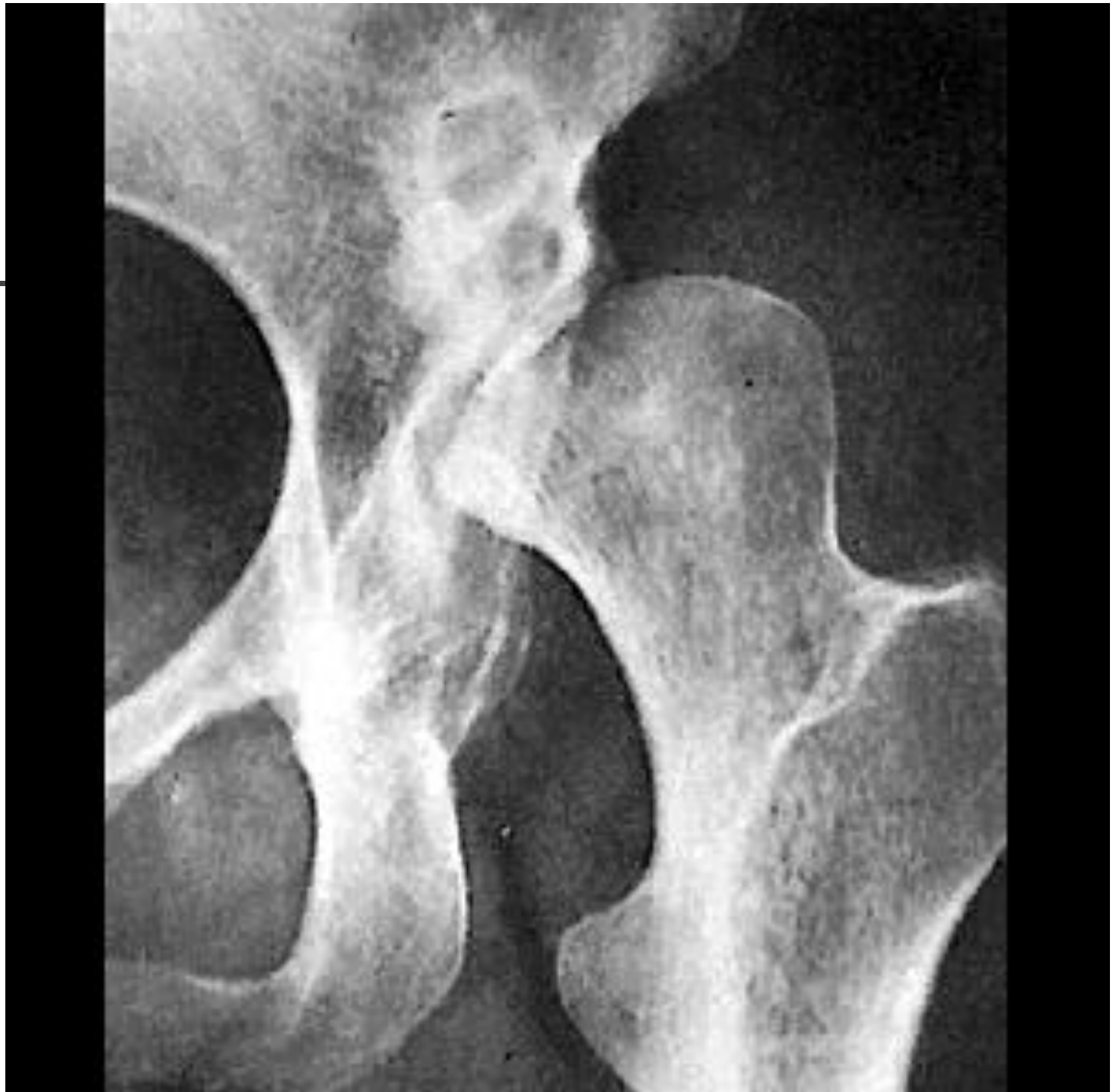
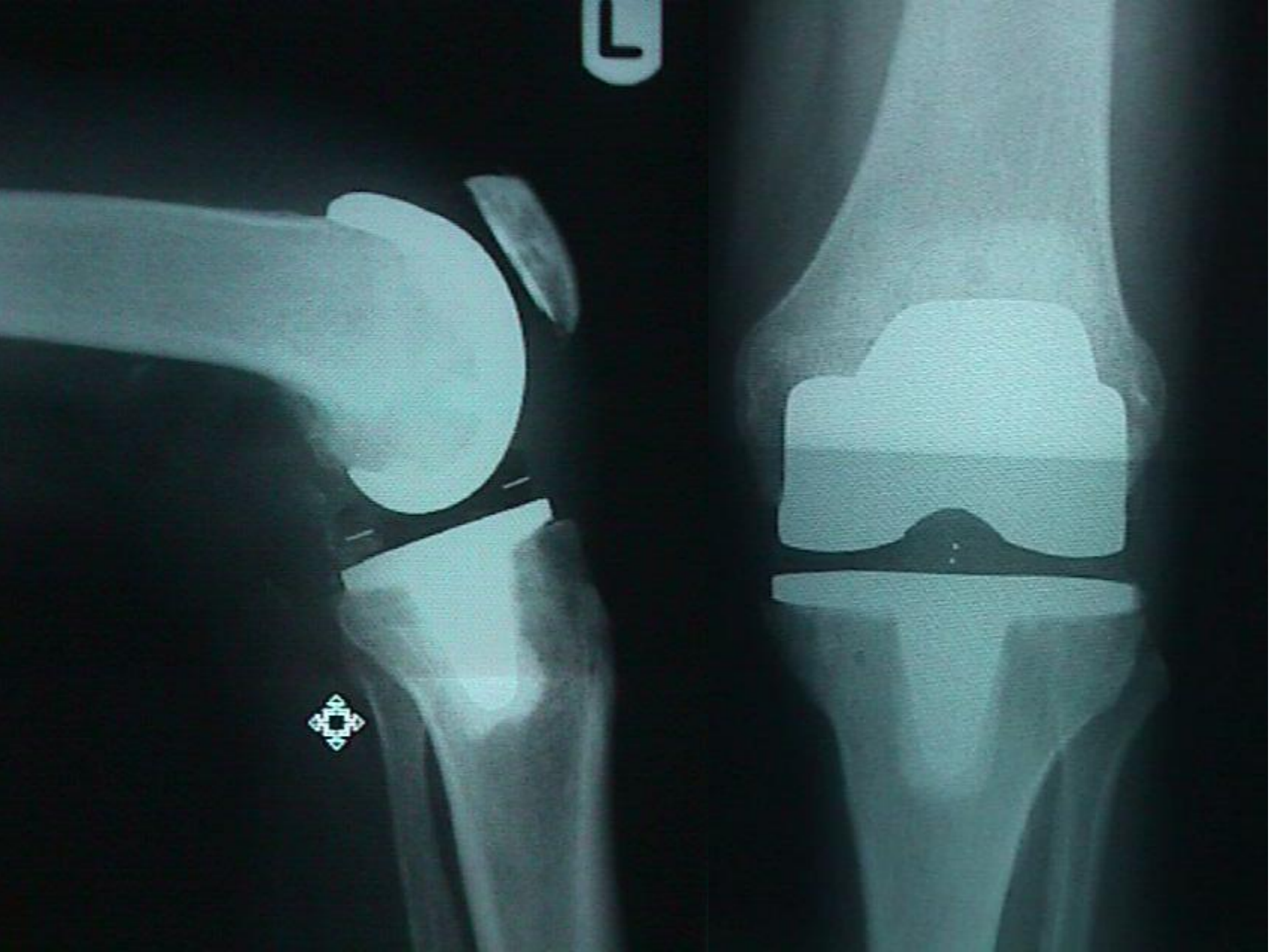
04



Degenerative:

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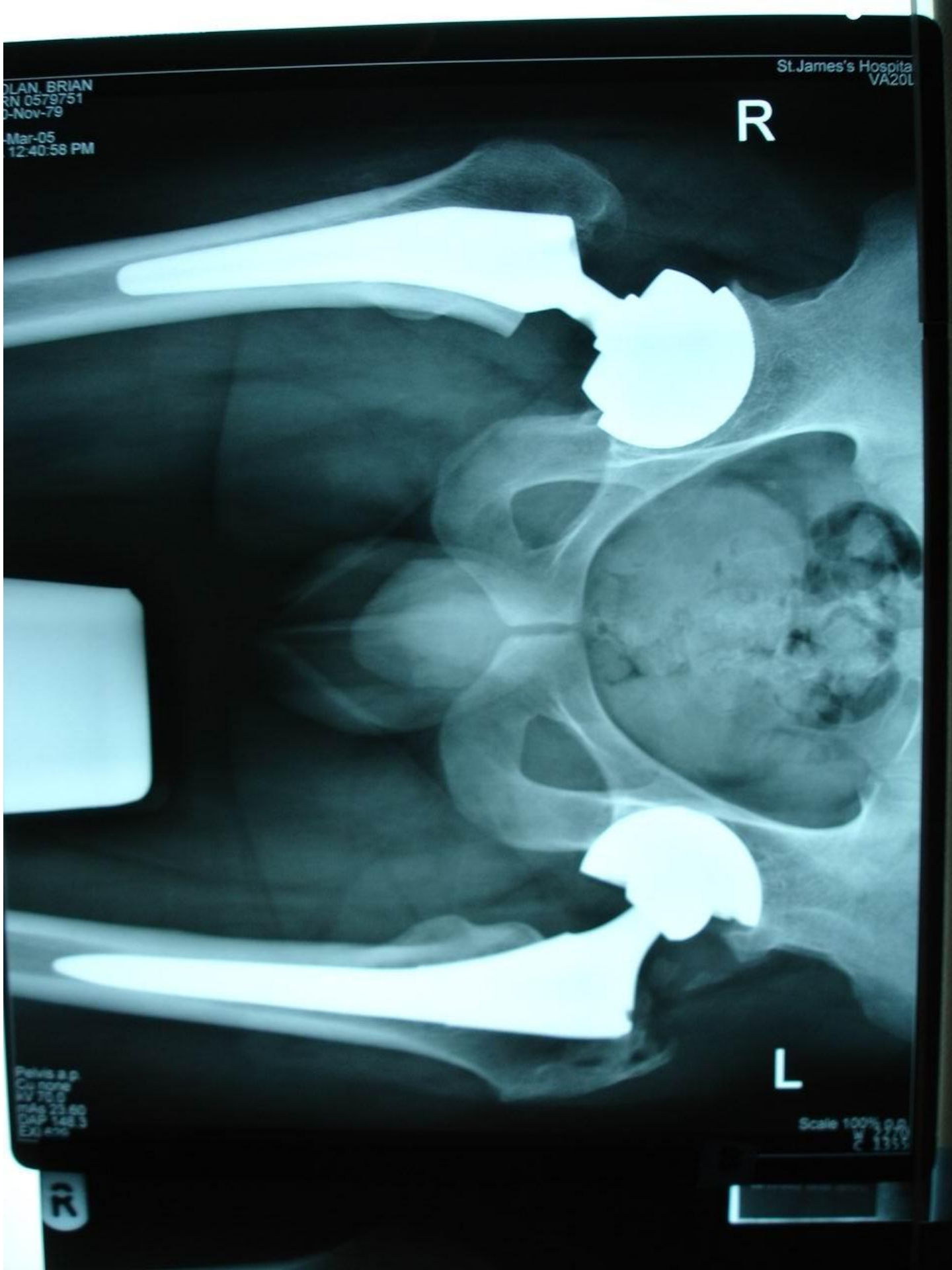
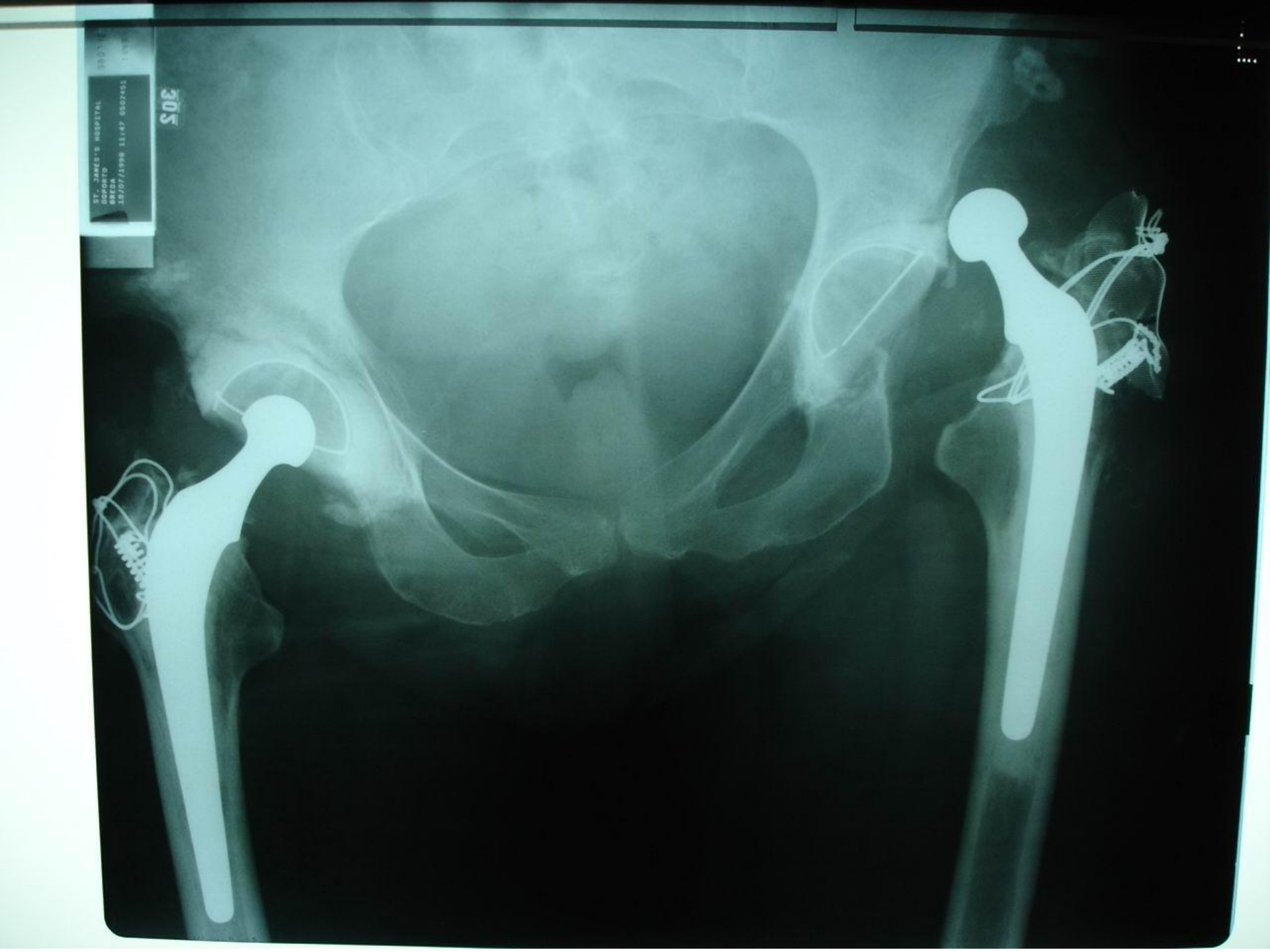

St.James's Hospita
VA20L
R
L
Pelvis a.p.
Cu none
kV 76.0
mAs 23.60
DAP 148.5
Exp ime
Scale 100%


ST. JAMES'S HOSPITAL
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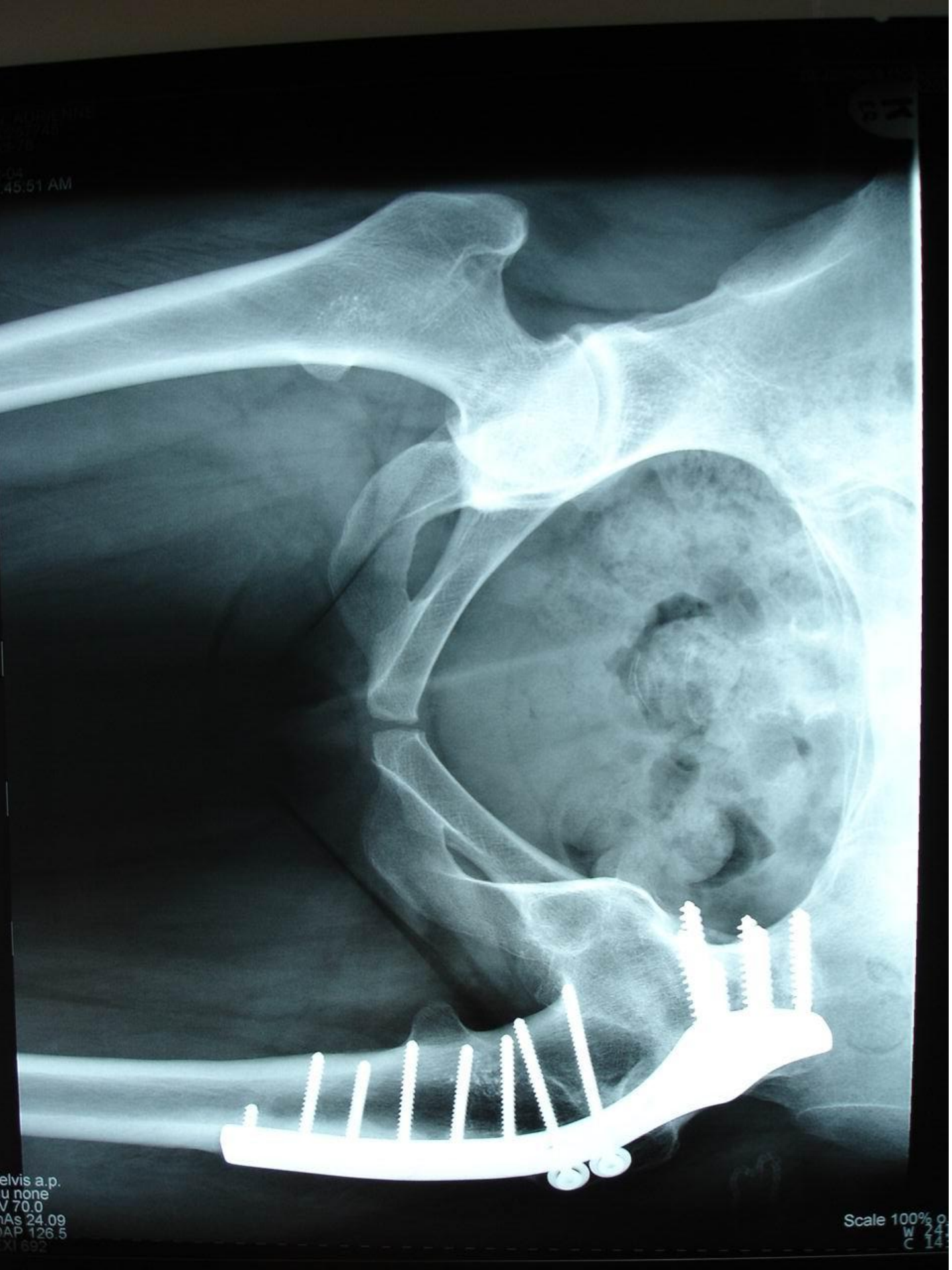
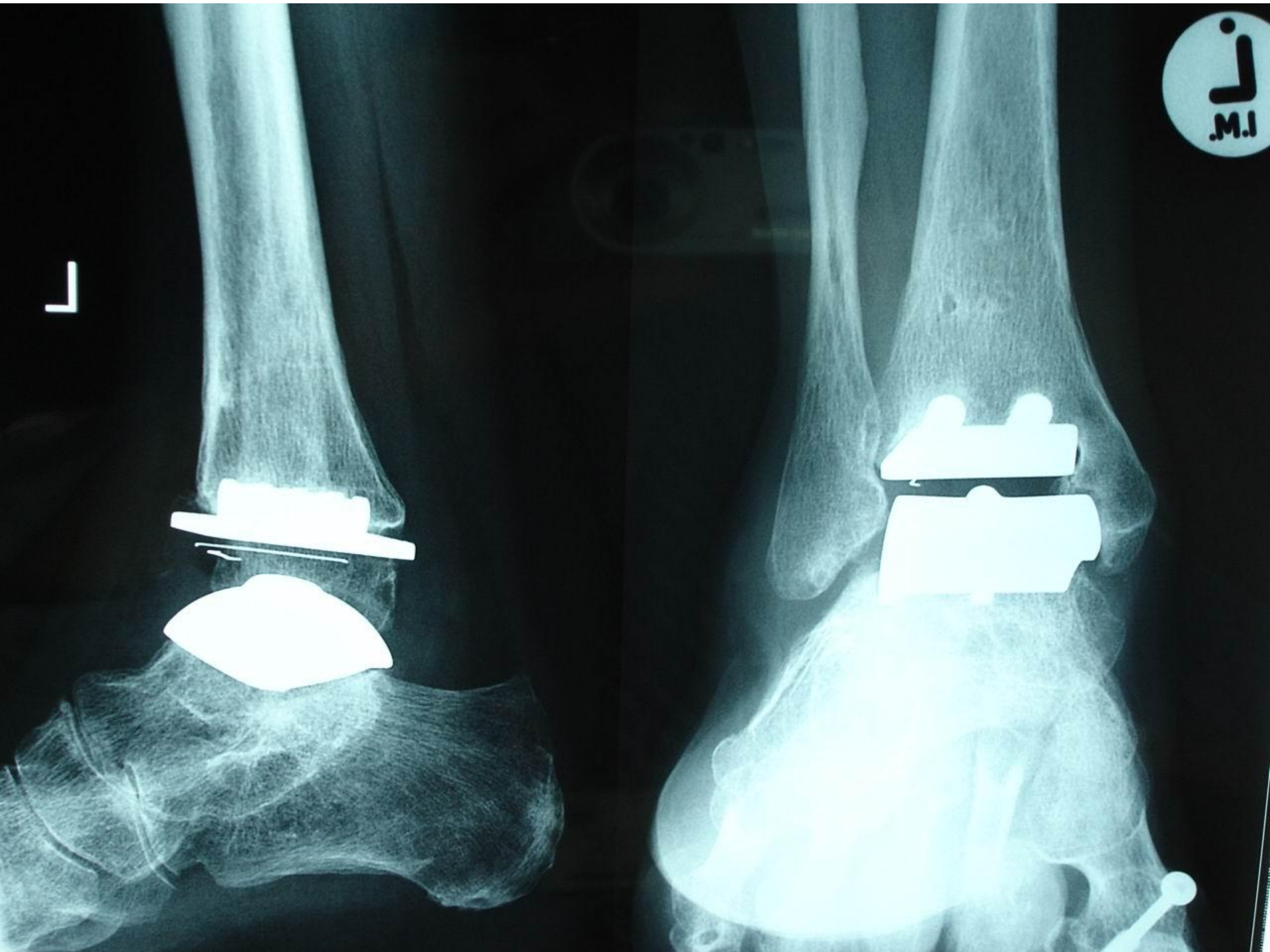
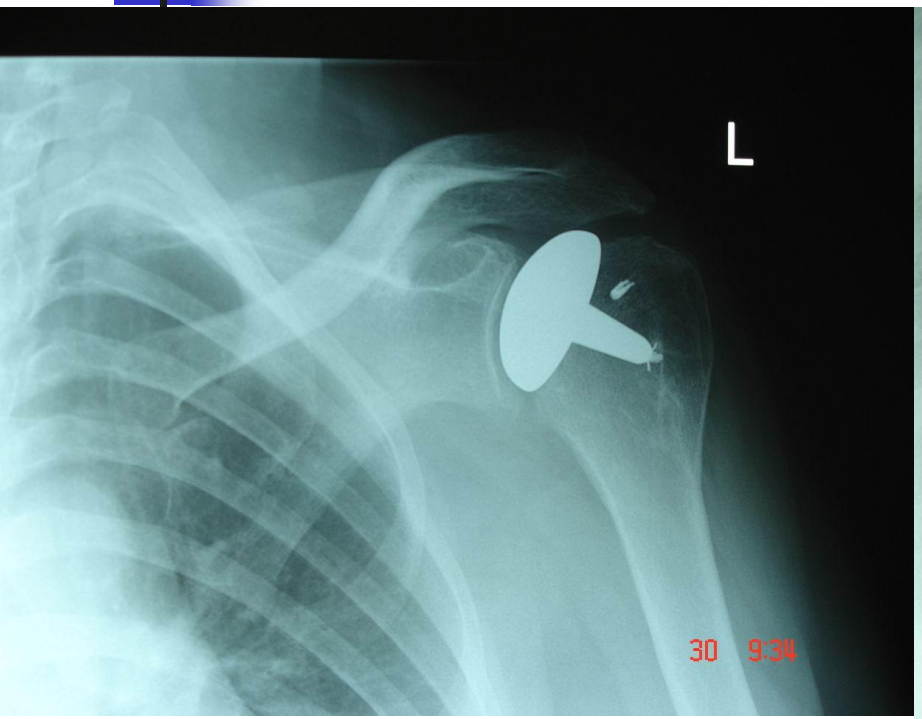

45:51 AM
elvis a.p.
u none
V 70.0
As 24.09
AP 126.5
Scale 100%

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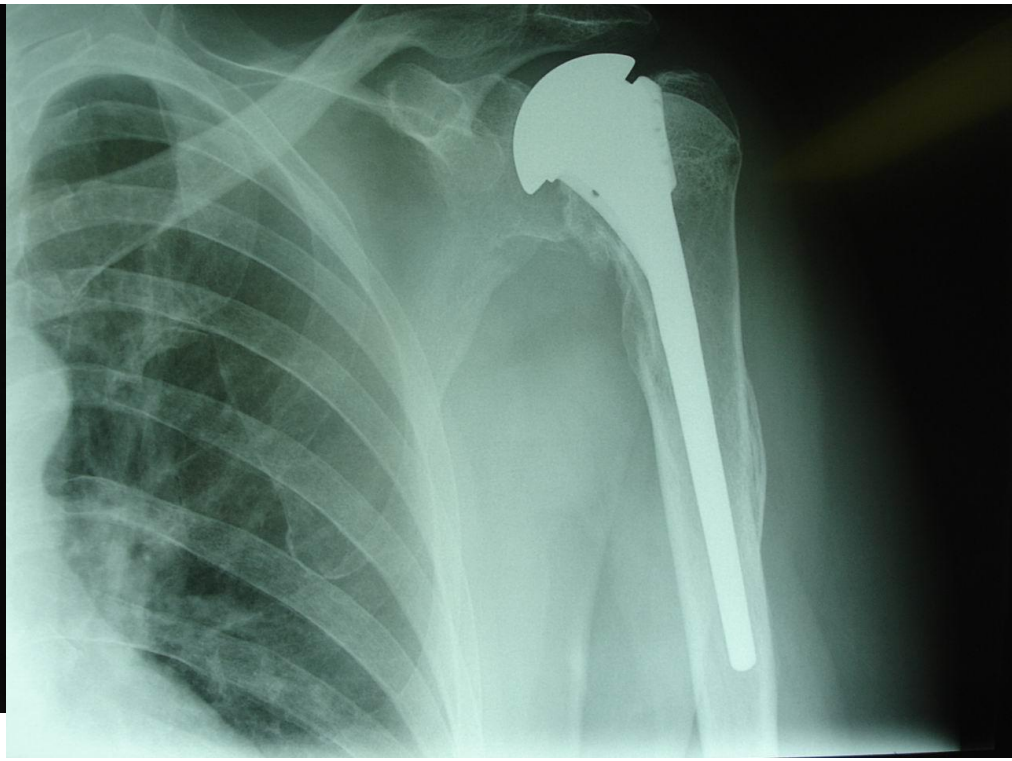
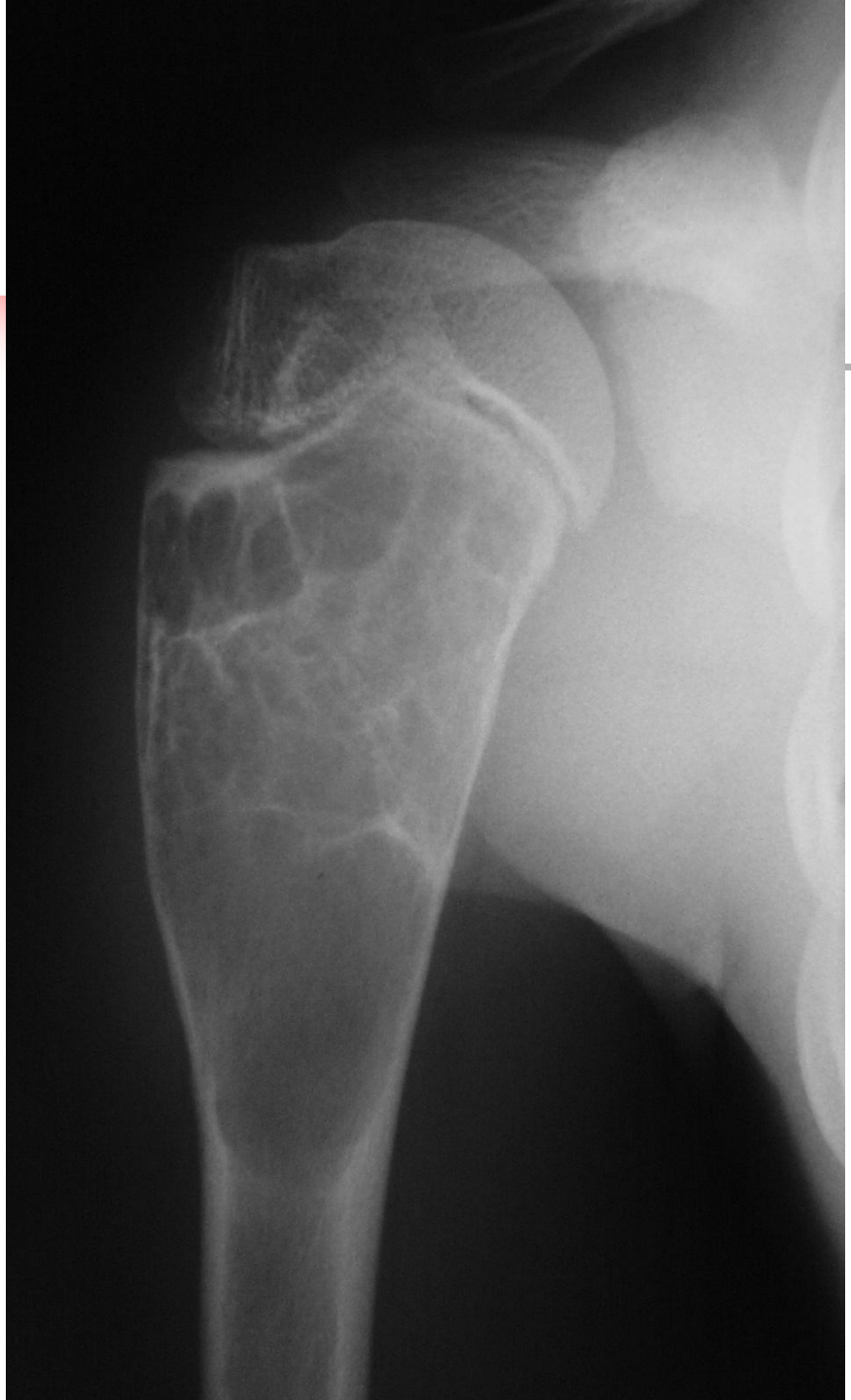
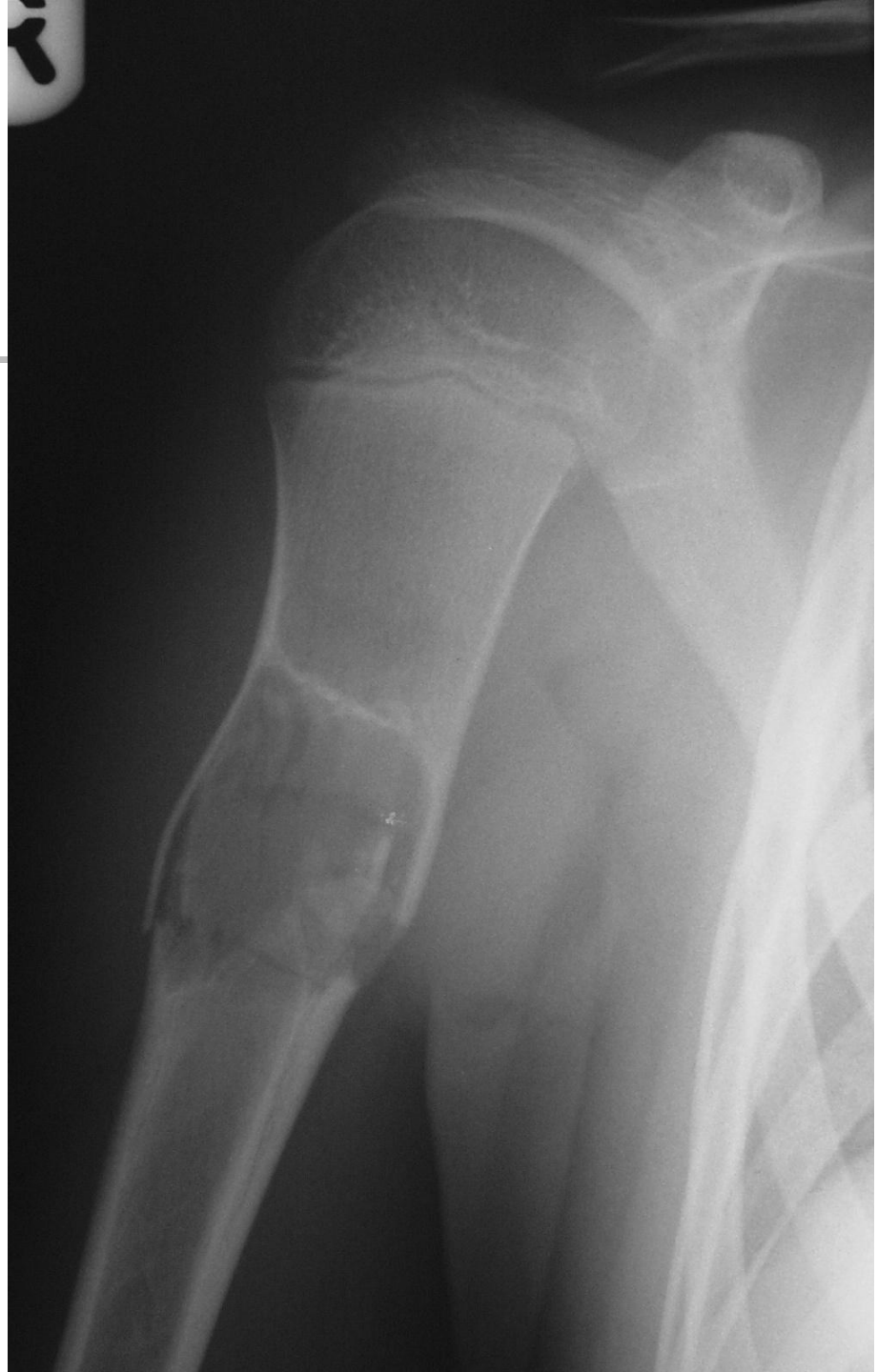


Neoplastic:


Right
Left
ANT HIPS
POST HIPS
RT LAT HIP
LT LAT HIP



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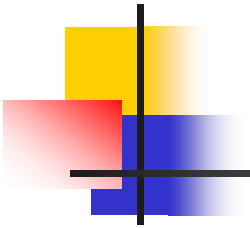
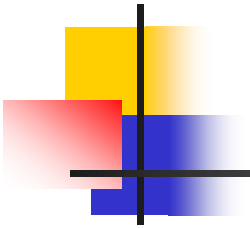
- **No patient ever died of a broken bone**
- While the expert and expeditious care of orthopaedic trauma directly bears upon the patients morbidity and eventual functional recovery, the question of patients survival must be addressed prior to any orthopaedic consideration.

- Life, limb, wound, fracture.

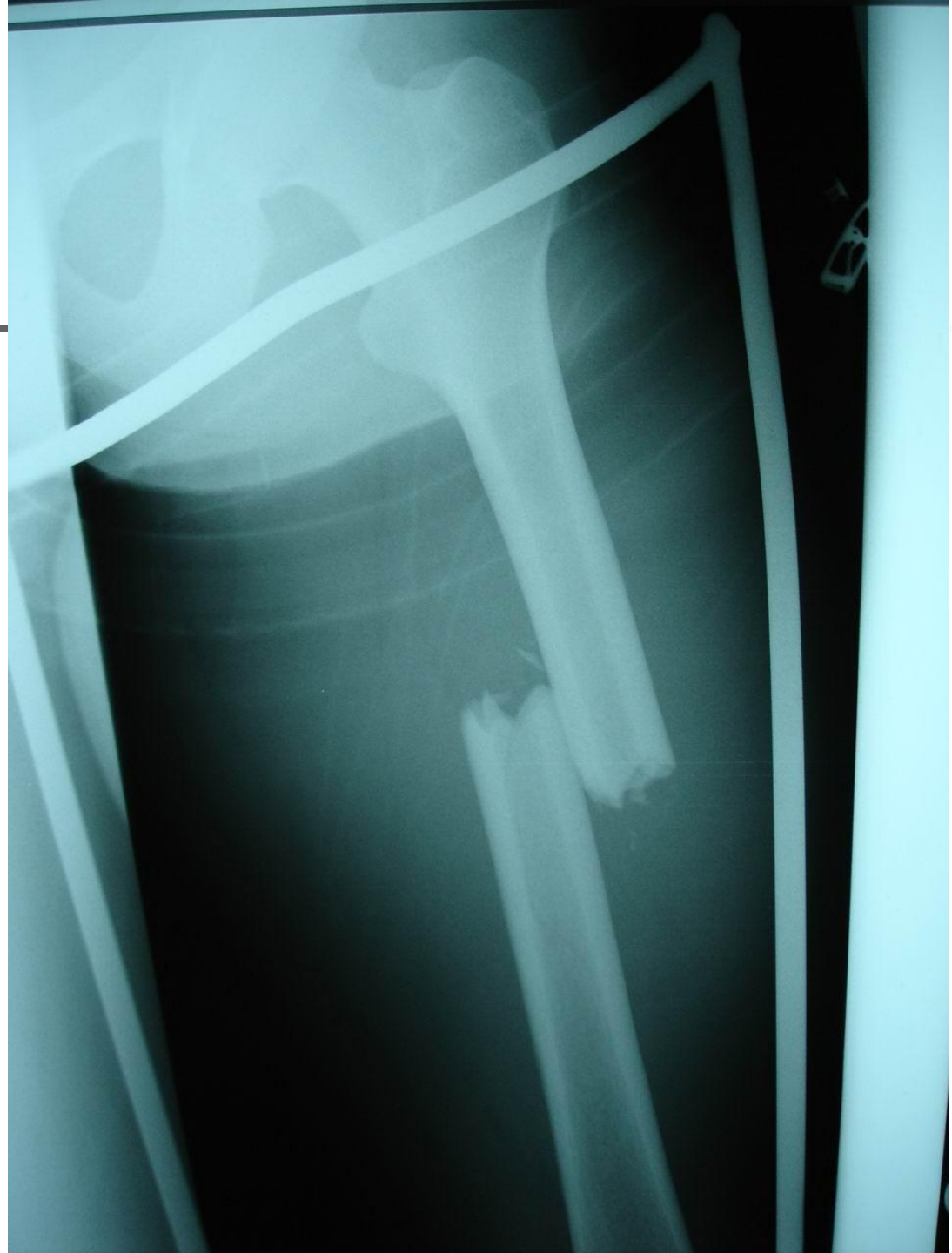


- ATLS program.
- Treat the greatest threat to life.
- The lack of definitive diagnosis should never impede the application of an indicated treatment.
- Detailed history was not essential to begin the evaluation and treatment.
- ABCDE.

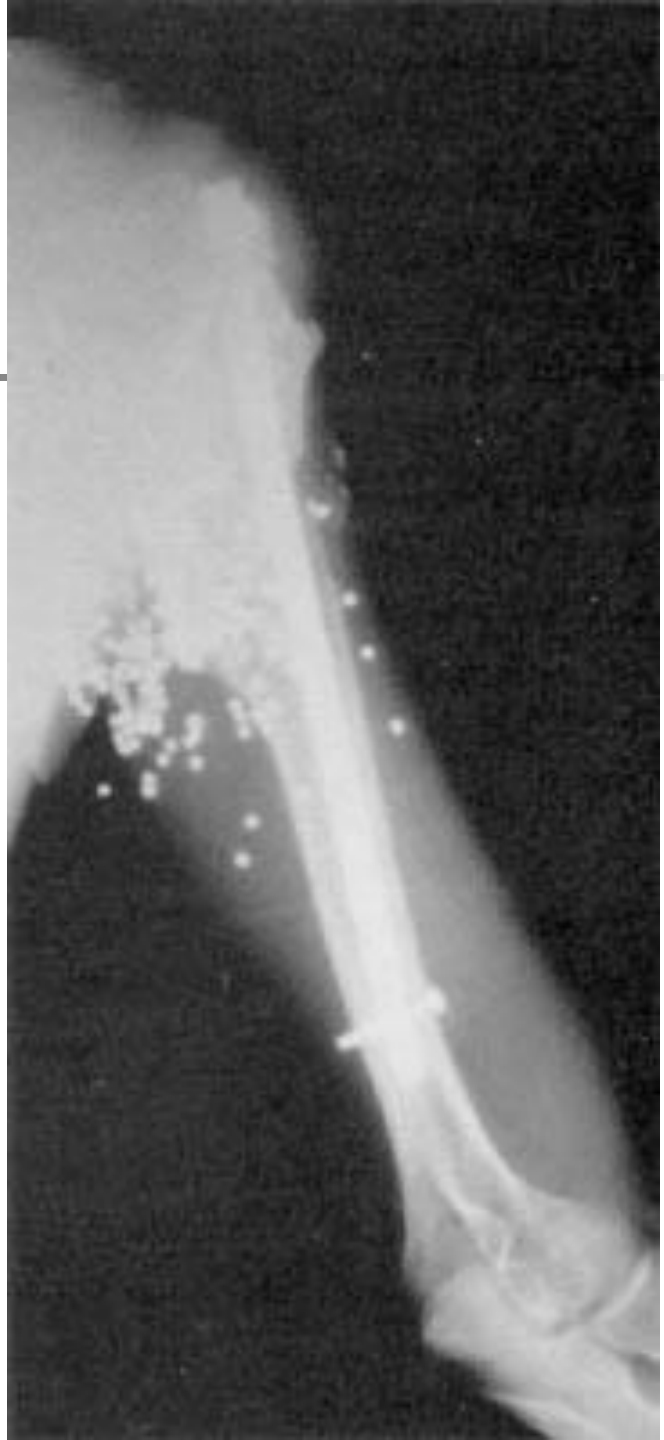
- Description of fractures
- 5.6 million fractures/year, 5-10%.
- Fracture: discontinuity of bone.
- Fractures can be categorized in several ways, pathologic or traumatic, stress, location in bone, mechanism of injury, status of soft tissue…etc.

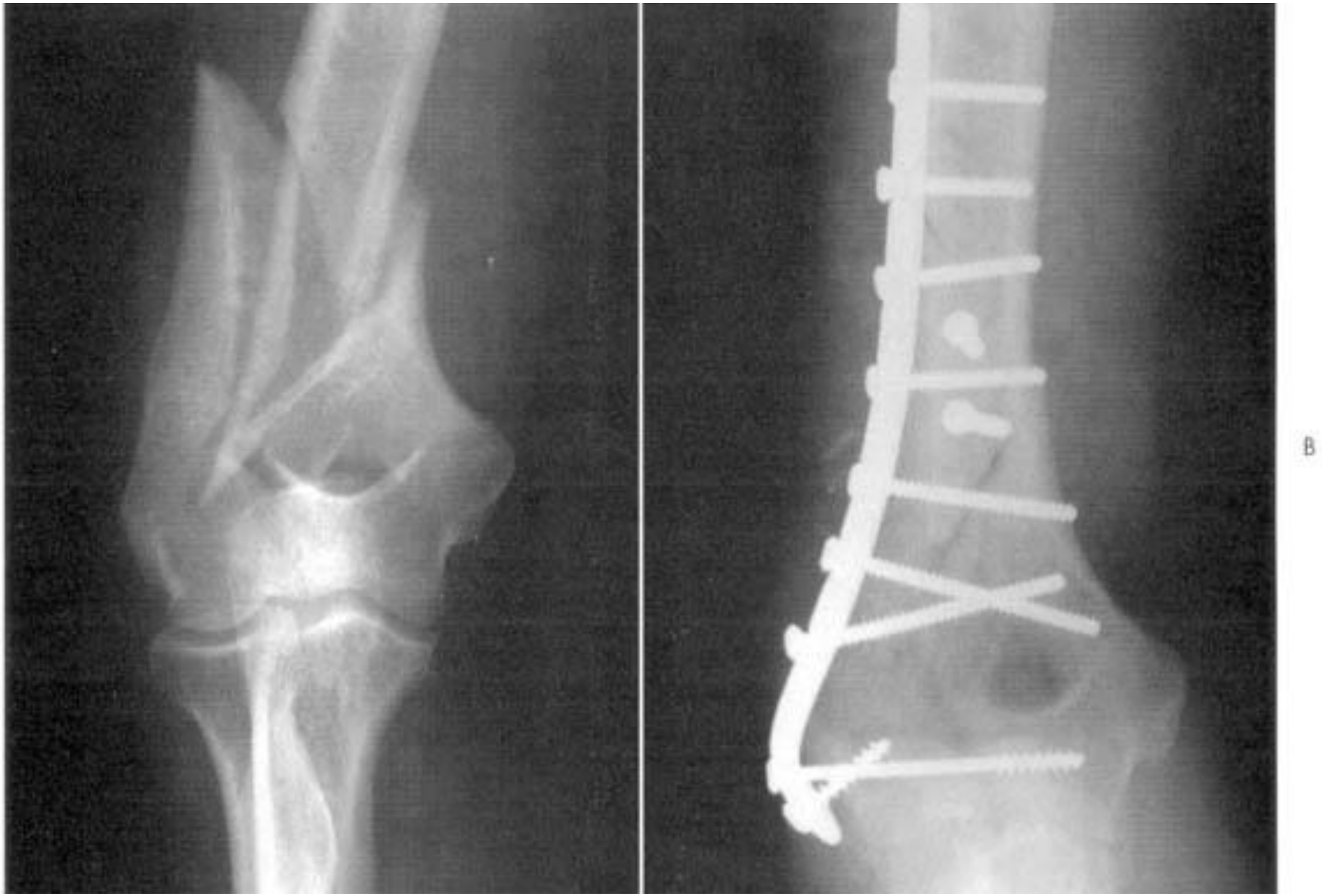


- Classification by anatomical location.
- Epiphysis.
- Metaphysis.
- Diaphysis.
- Capsule.
- Articular surface.
- Growth plate.




3R

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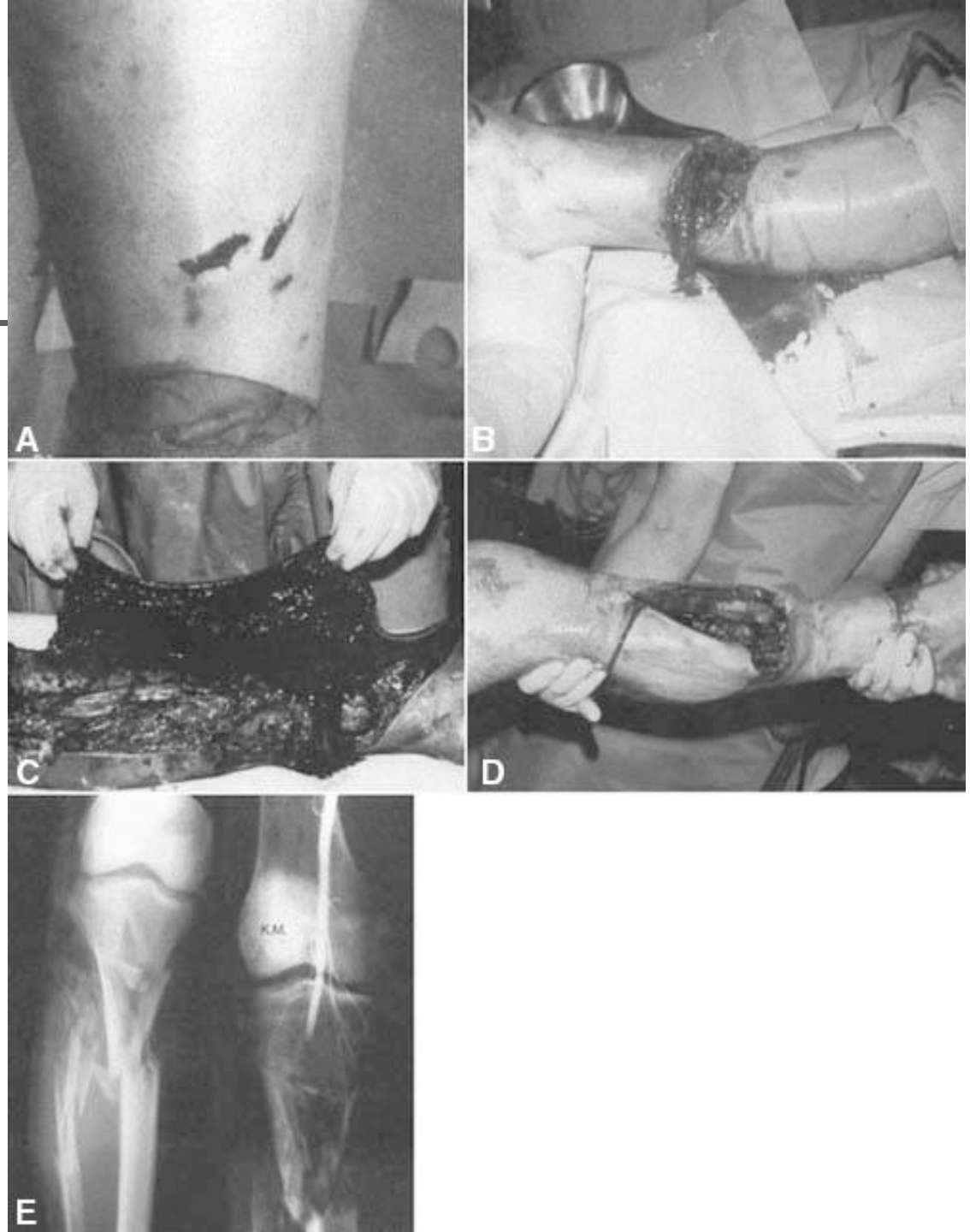
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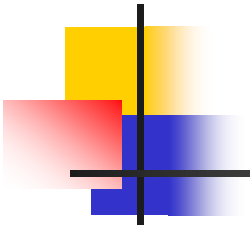
E



- Description of the deformity:
- Distal segment.
- 3 planes: axial, Sagittal, coronal.
- Displacement and angulation.
- 2 views, 2 joints, 2 limbs, 2 positions, 2 occasions.
- Initial X-ray: personality of the fracture.

Clinical features of fractures:

- Pain and tenderness.
- Loss of function.
- Deformity.
- Attitude.
- Abnormal mobility and crepetus.
- Neurovascular injury.
- X-ray findings.

Treatment

- Reduction: any dislocation is an emergency.

  closed or open.

- Immobilization:

  traction, cast, external fixation, internal

  fixation.

- Rehabilitation.

- Healing calendar.

Upper limb, child: 3 weeks.

lower limb: X2

adult: X2

femur: X2

consolidation: X2

Complications

- Bone healing abnormalities:

  - Delayed union: free movement at 3-4 mo.

  -Nonunion: no radiographic evidence of union with clinical motion & pain 6 mo.

  -Malunion: bony healing in an unacceptable position in any plane.

  - AVN: disruption of blood supply lead to nonunion, collapse, OA.