



PATELLA NECROSIS and TKA

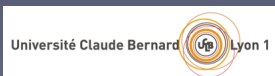
R. GAILLARD

D. WASCHER

S. LUSTIG

E. SERVIEN

Ph. NEYRET



FEMALE, 60 years

- Large valgus deformity
- **Medial approach + LRR**



Courtesy
Of
Dan Wascher



FEMALE, 60 years

- Large valgus deformity
- **Medial approach + LRR**

Anterior knee pain

No trauma +++

1 YEAR



LT / MNU

FEMALE, 60 years

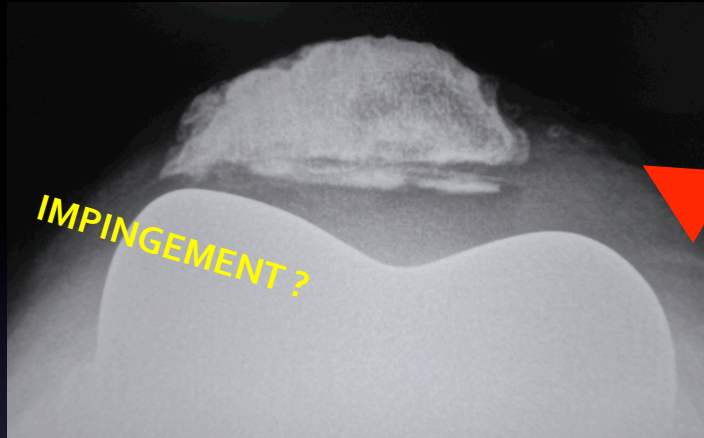
- Large valgus deformity
- Medial approach + LRR

PATELLA NECROSIS

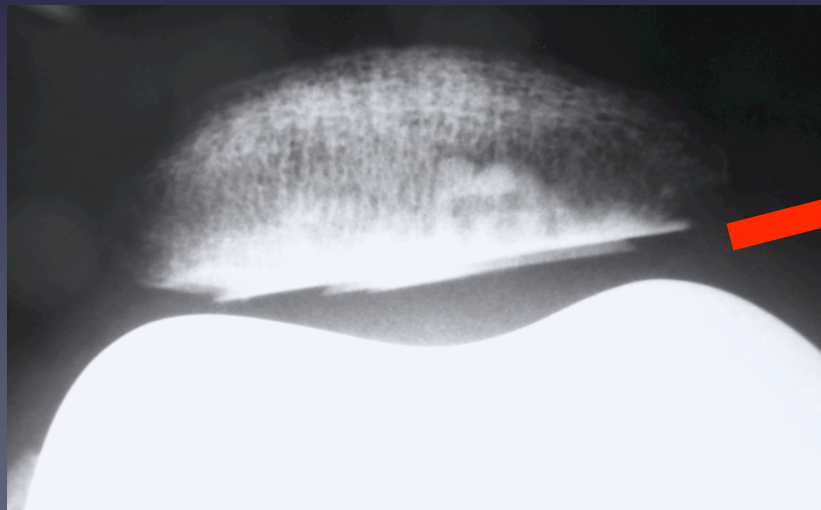
2 YEARS



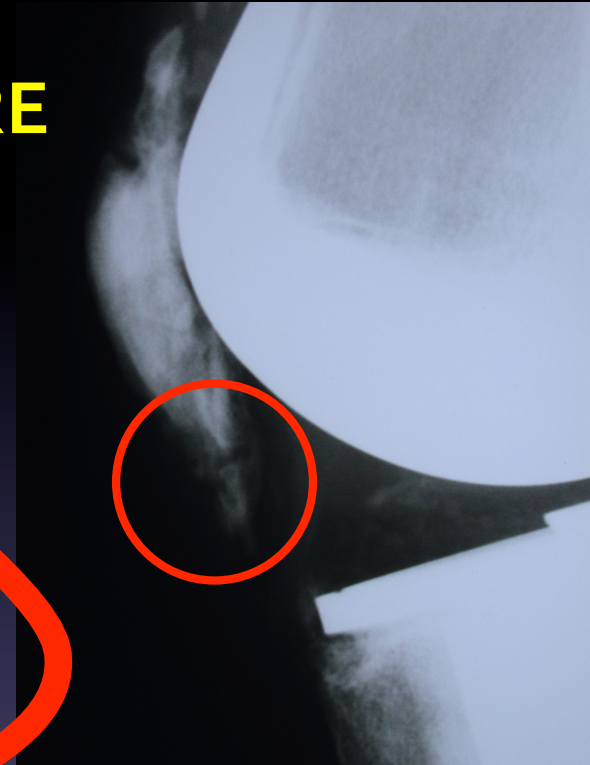
Disappointing midterm results...



LOOSENING

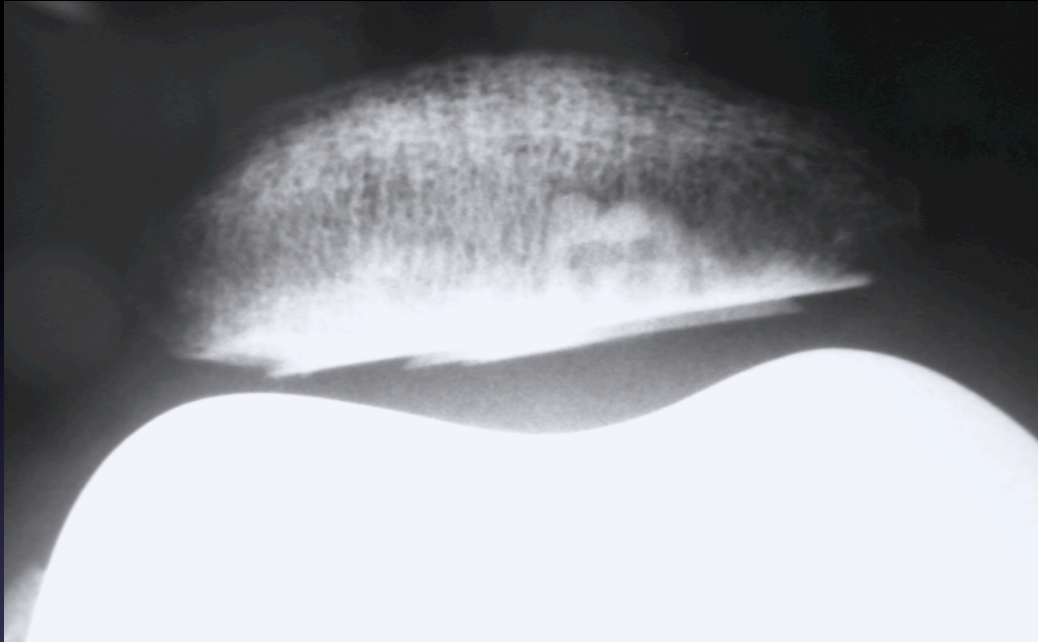


FRACTURE



**UNEXPLAINED
PAIN +++**

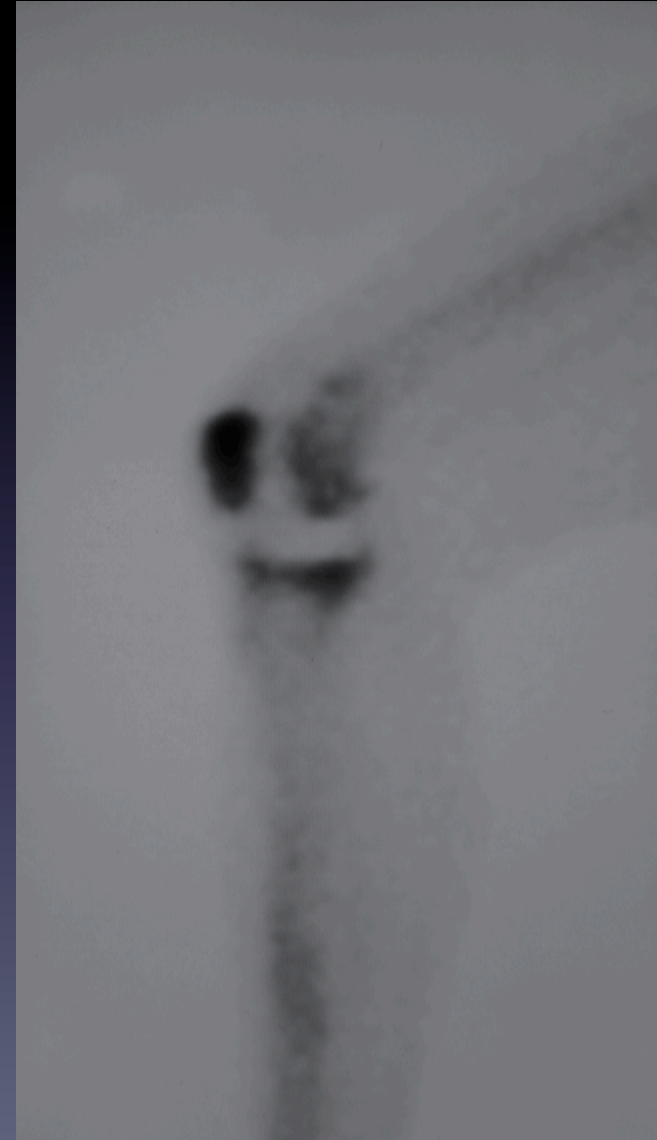
UNEXPLAINED PAIN



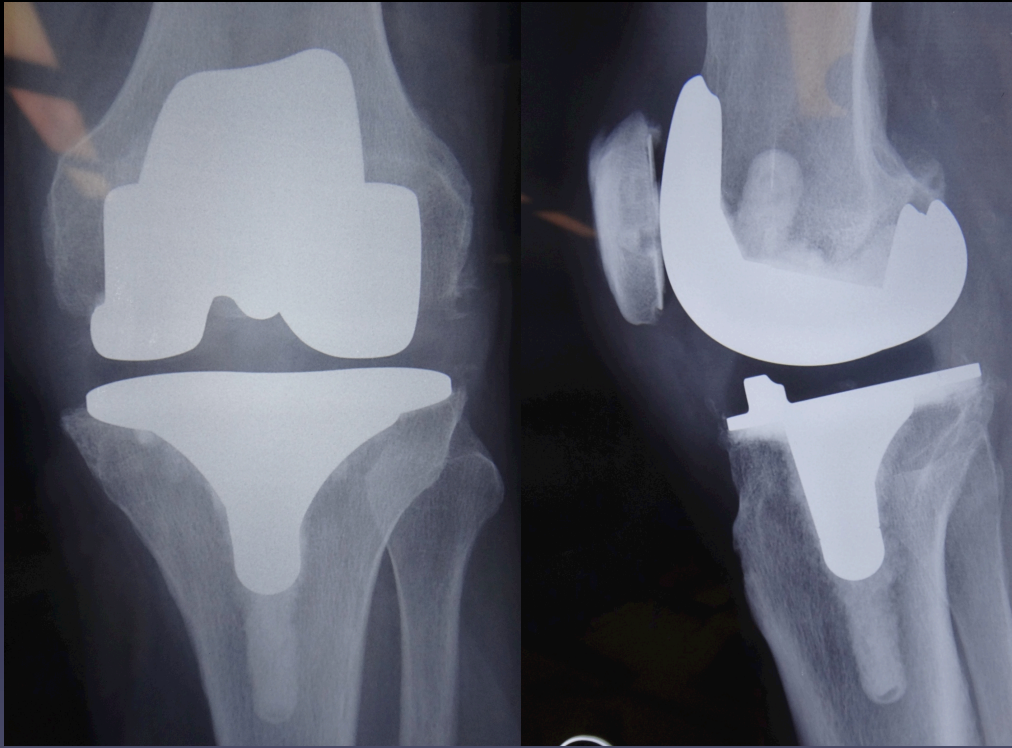
Inflammatory knee + effusion

Anterior knee pain

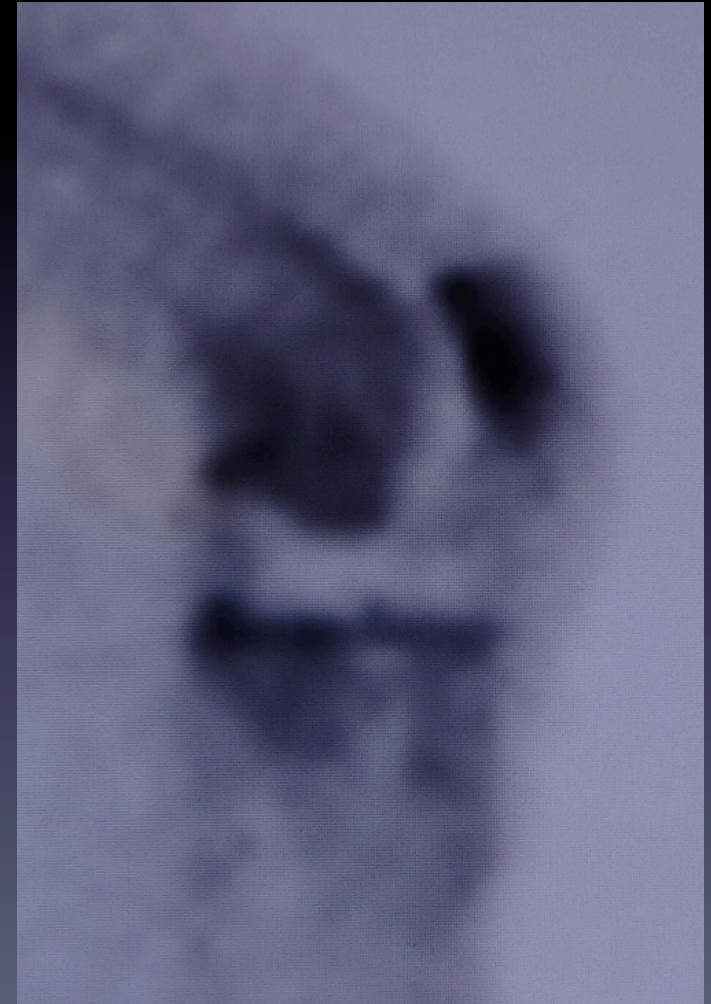
=> Bone scan : patella fixation / no sepsis



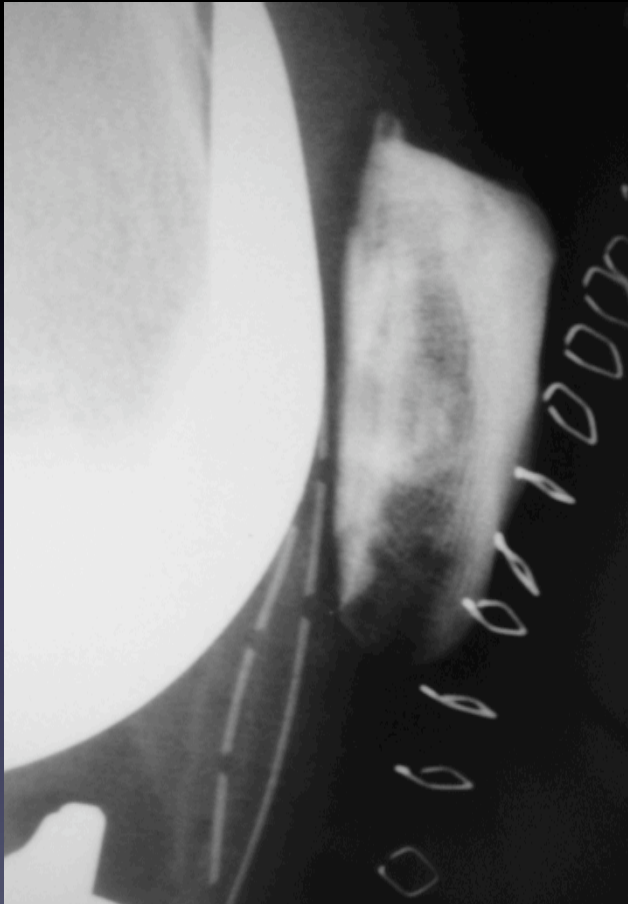
UNEXPLAINED PAIN (2)



Male 75 years



UNEXPLAINED PAIN (3)



Post-op



1 year

NECROSIS?

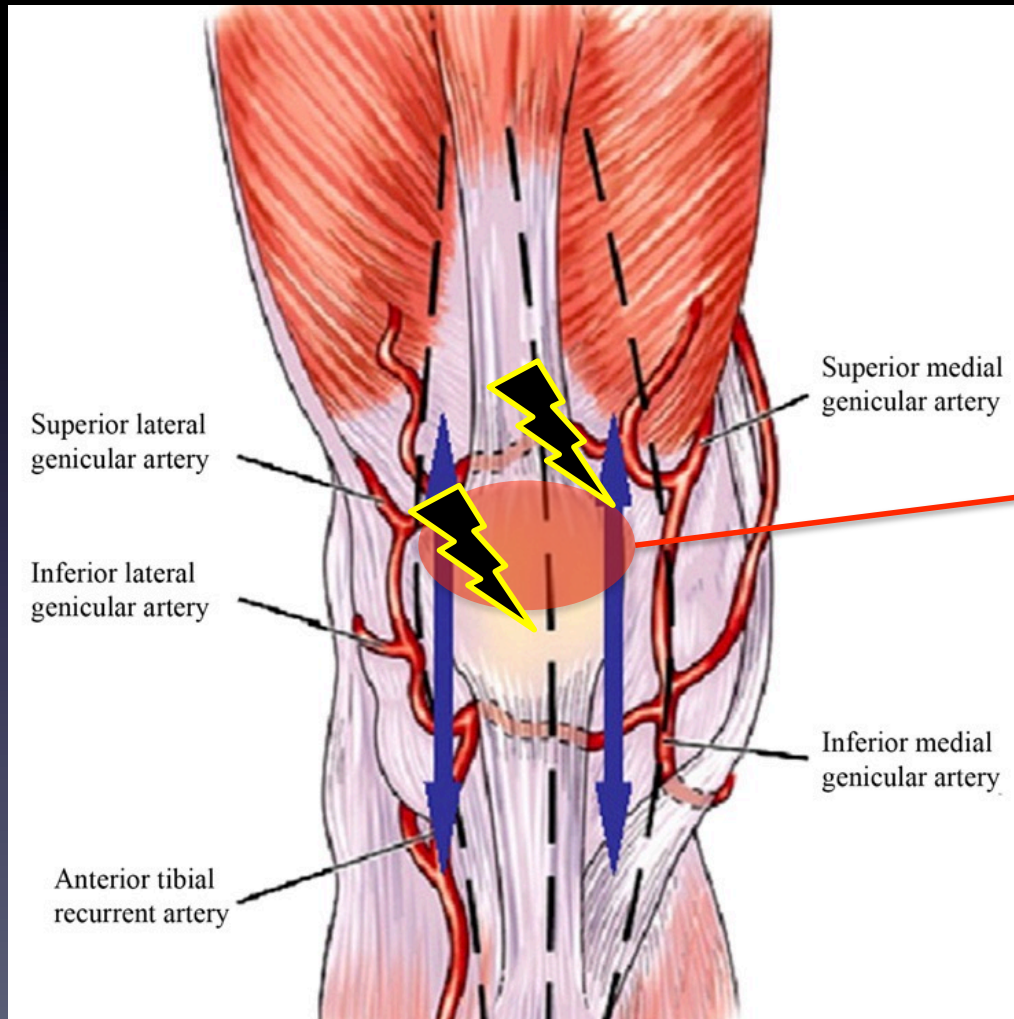
PATELLA NECROSIS

ETIOLOGIES *on native knee*

- Cortico-steroids +++ (like femoral head)
- **Patellar fracture**
- **Patellar dislocation**
- *Idiopathic / atraumatic causes*

*Blood supply
rupture +++*

Blood supply rupture



*Blood supply of the human patella.
Its relation to ischaemic necrosis
after fracture, Scapinelli*

CRITICAL ZONE

Patellar dislocation

Patellar fracture

PATELLA NECROSIS

DIAGNOSIS

-

pa

GOLD STANDARD

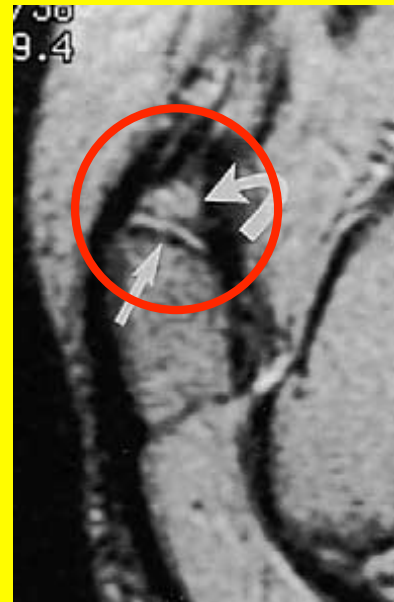
- Inflammation

= MRI +++

- X-Ray .

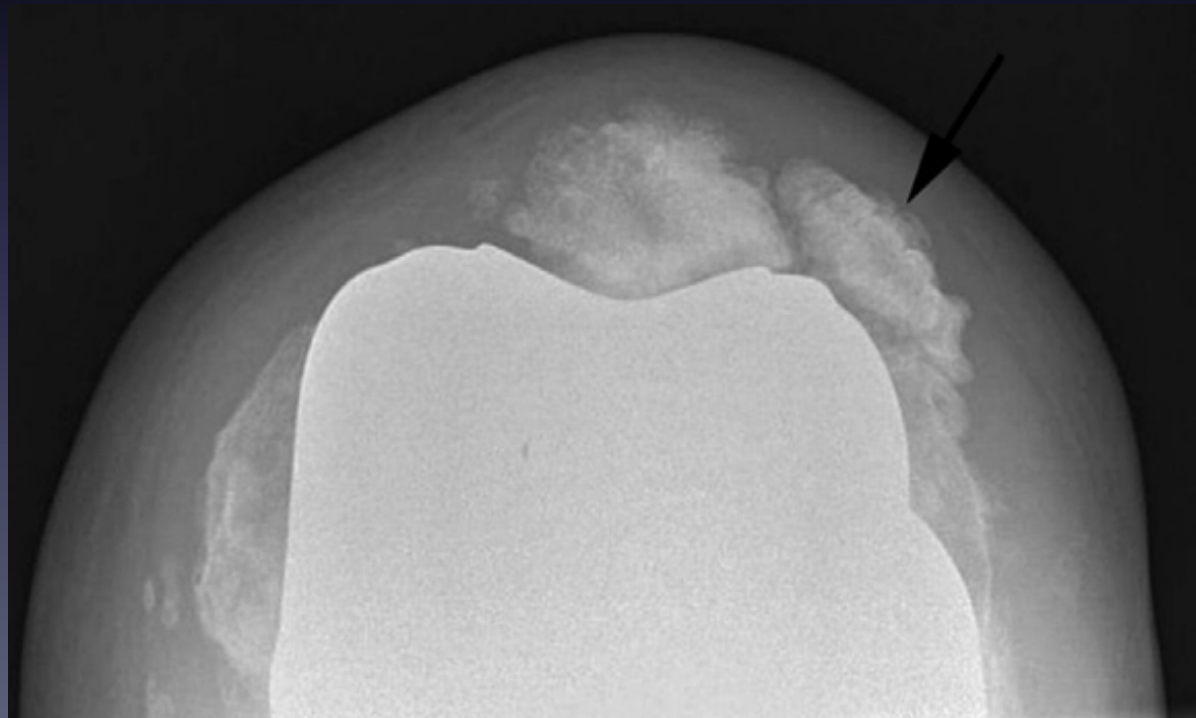
– Initially

– Then per osteo-sclerosis +++

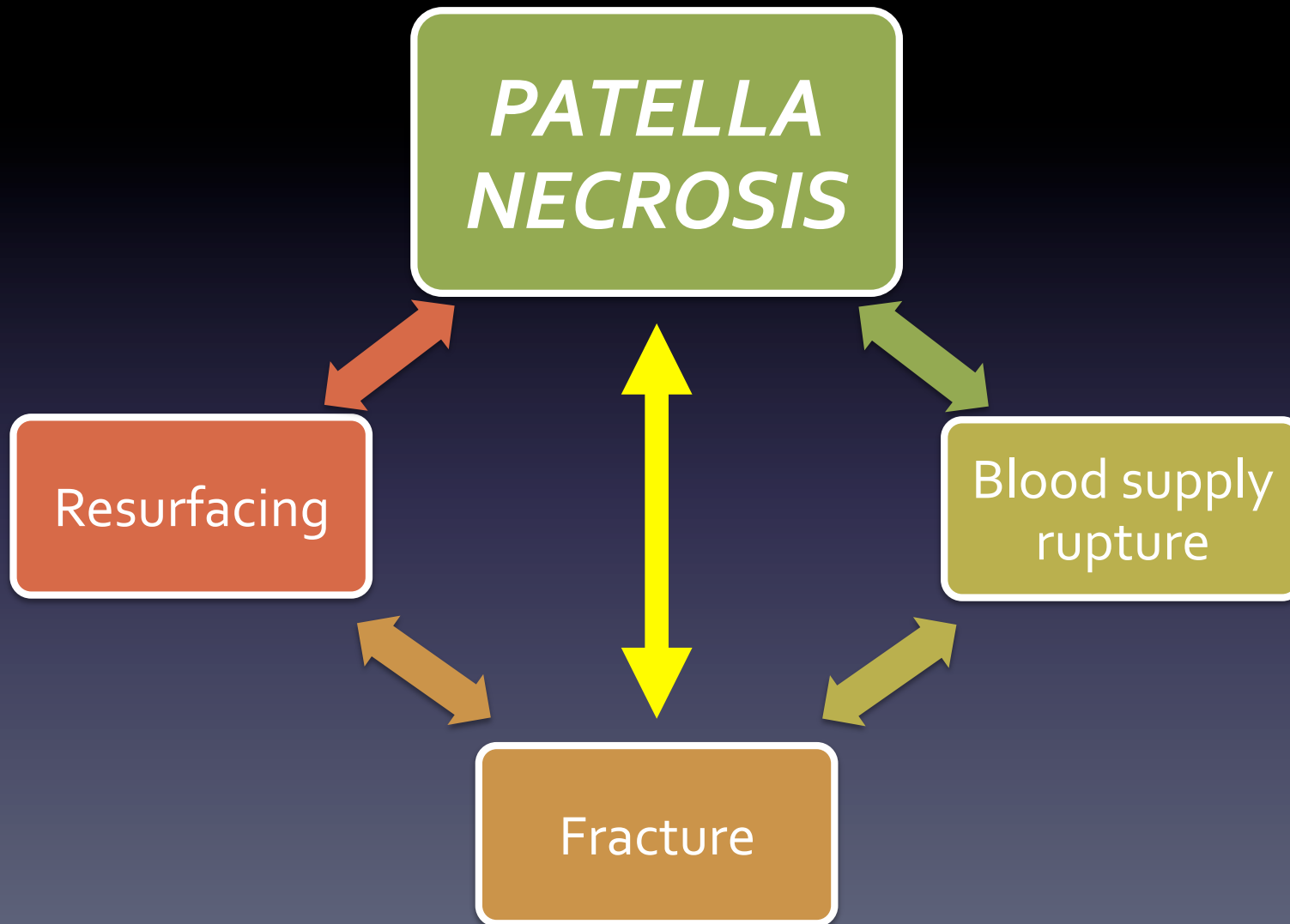


ecrosis of
a:
atures,
et al.

PATELLA NECROSIS and TKA



MULTI-FACTORIAL ORIGIN



- **Blood supply rupture**

- Medial approach +++

- *Blood supply to the patella. Significance in total knee arthroplasty, Brick et al.*

- Lateral release

- *The relationship of lateral releases to patella viability in total knee arthroplasty, Scuderi et al.*

- Previous scar +++

- **Skin necrosis association +++**

- Rare

- *Osteonecrosis of the patella and prosthetic extrusion after total knee arthroplasty, Noorpuri et al.*



- **Bone resection : resurfacing**

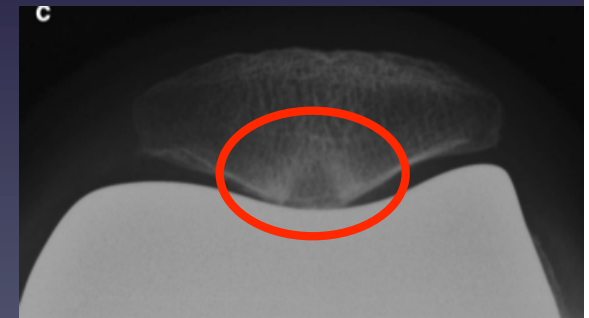
- Admitted as a risk factor of

- BUT

LATERAL FACETECTOMY
???

PATELLA DENERVATION
???

Cheng, Takahashi et al.



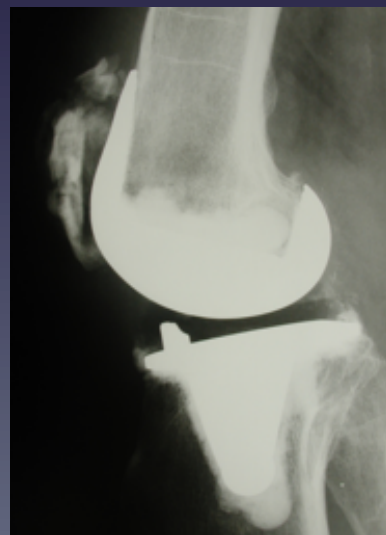
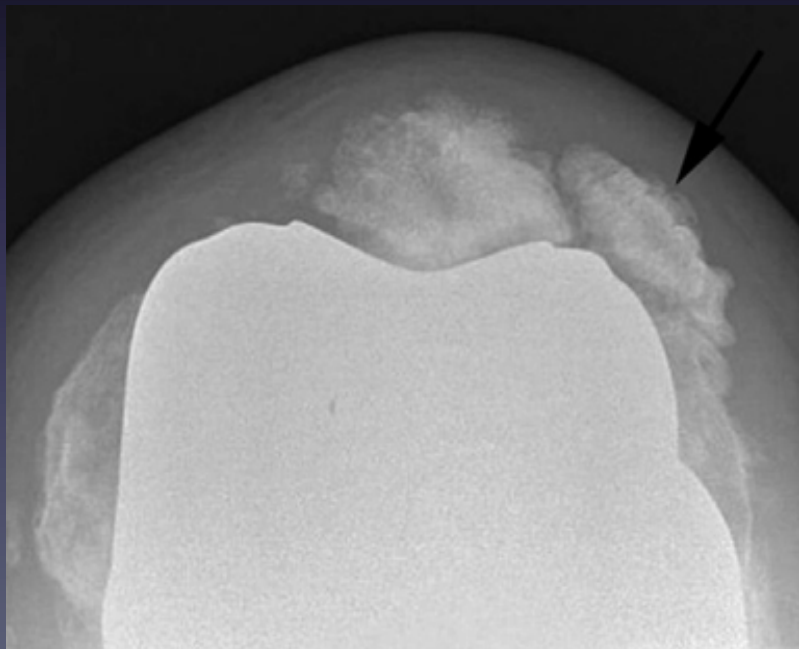
- **Fractures :**

- *Patellar fractures in TKA*, Windsor et al.

- *Stress fracture of the patella following duopatellar toTKA with patellar resurfacing*, Scott et al.

DIAGNOSIS

- Sometimes **EASY**...

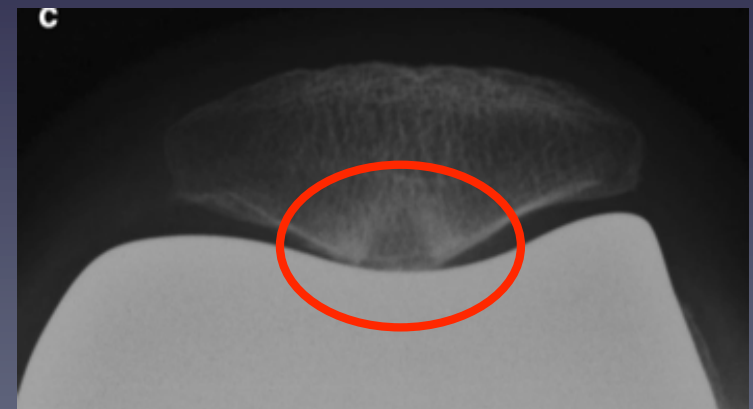


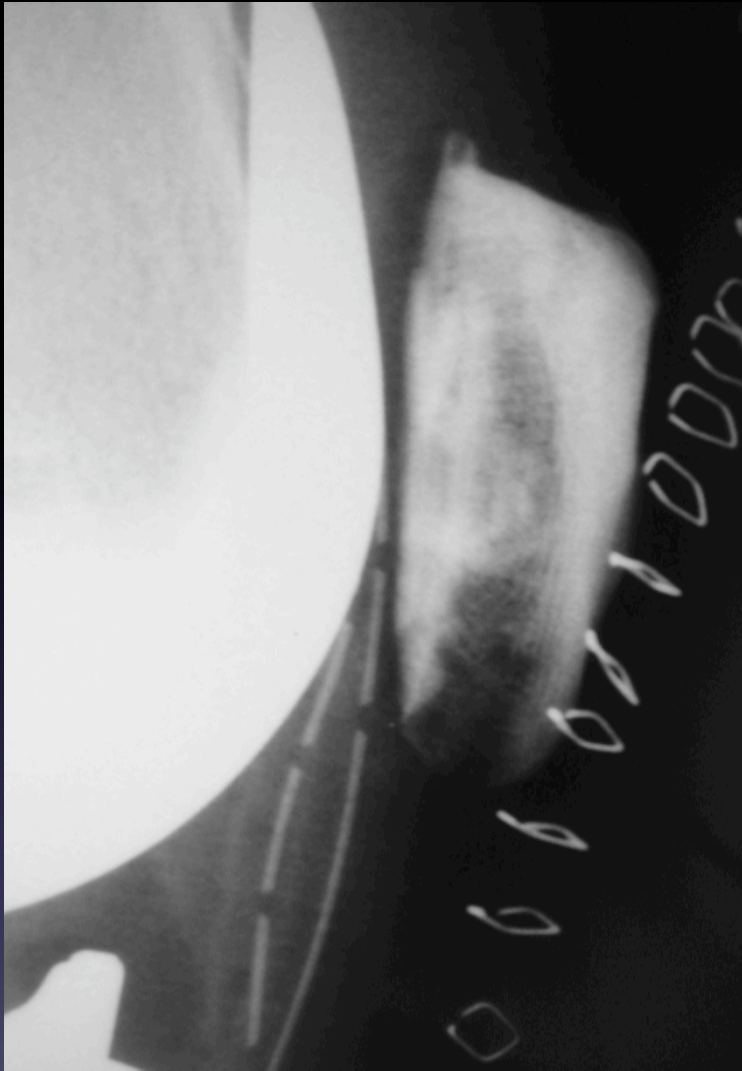
Osteonecrosis and resorption of the patella after TKR: a case report, Holtby et al.

Osteonecrosis of the patella and prosthetic extrusion after TKA, Noorpuri et al.

DIAGNOSIS

- Often **DIFFICULT...**
 - Non traumatic patella Fr.
 - Radiolucent zone of the patella
 - *Radiolucent zone of the patella following TKA without patellar resurfacing, Takahashi et al.*





Post-op

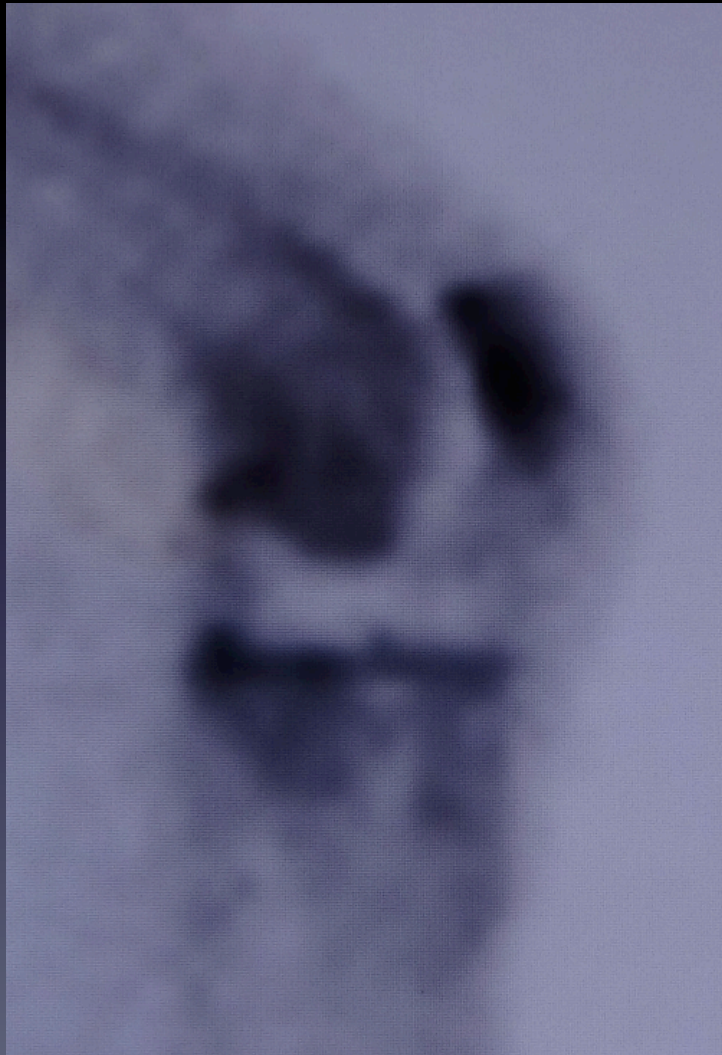


OSTEO-SCLEROSIS

1 year

anterior knee pain +++

Bone scan



- Exclude sepsis +++
- Diagnosis : intense hyperfixation

MANAGEMENT

- **No metallic osteosynthesis**
 - Septic risk +++
 - Discuss wire osteosynthesis
- Discuss palliative treatment :
 - Total patellectomy ? Partial patellectomy ? Necrosis zone removal ?
 - +/- cement removal
 - +/- patellar button removal
- If **no pain and no extension lag** : NONE



OUR EXPERIENCE

- Computerized database of 4071 TKA +++
 - Since 1987
 - Mean follow-up = 3.3 years
 - Prospective follow-up
- HLS technique / cemented implants
- Patellar resurfacing +++

46 « unexplained knee pain »

- 2 implant malposition
- 1 Clunk syndrome
- 4 femoro-patellar conflict
- 2 oversize implant
- 2 laxity
- 2 scarf pain
- 1 sepsis
- 1 material conflict
- 2 Pes Anserinus tendinitis
- 2 intra-articular fragment

33 patellar fractures

3 traumatic fractures

22 symptomatic non traumatic fractures

PATELLA NECROSIS ???

= 1.4 %

27 unexplained knee pain

PREVENTION ?

- Previous scar management +++
 - Imperatively use previous scar
 - No bilateral arthrotomy
- Lateral approach for valgus knee
 - Collateral ligament balance
 - Improve patellar tracking

PREVENTION ?

- **NON RESURFACING +++ ??**

- Previous knee approach

- **Thin patella** (avoiding fracture +++)

- The need for patellar resurfacing in TKA: a literature review, Swan et al.

CONCLUSION

- Patella necrosis and TKA = multi-factorial
 - Unexplained anterior knee pain +++
 - Fracture / Loosening
- Management : patellar button removal
patellectomy / partial P.
conservative +++
- Occurs also in non resurfacing Patella TKA

MAYBE MORE FREQUENT THAT WE THINK +++

