

# Periprosthetic Patellar Fracture



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# Prevalence

- 0,68% (12464 TKA) to 1,8% (19819 TKA)

Ortiguera JBJS 2002, Sheth JBJS 2007

- Patella resurfaced
- Patella not resurfaced 1% (582 cases)

Chalidis Injury 2007

- X 2 to 6 after revised TKA

Parvizi J Orthop Trauma 2008  
Sheth JBJS 2007

- Spontaneous > Trauma
- 50% few symptoms
- Within 2 years post op

# Background

Nelson Mas Orthop surg kne Arthro 2009

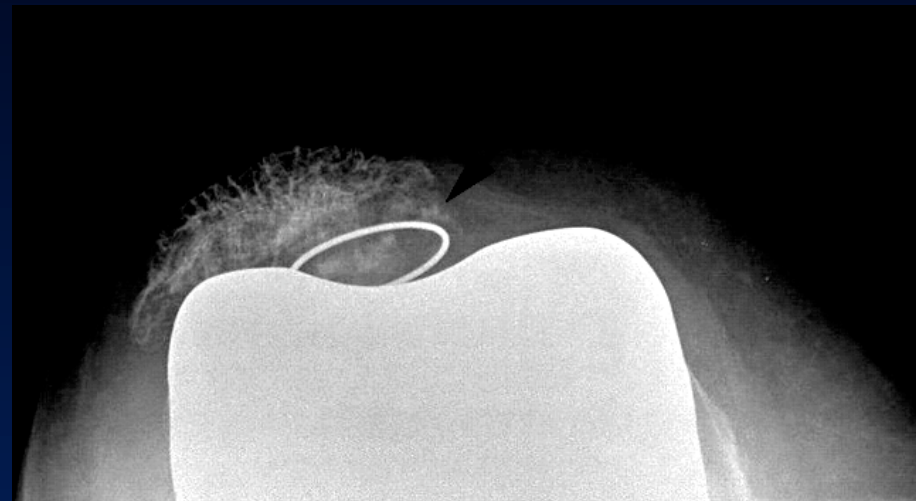
- Older patient
- Prior surgery by definition
- Less bone stock
  - excessive resection !!
- Necrosis
  - Less blood supply geniculate artery (LRR)
  - Exothermic reaction
- Patella maltracking (implants rotation)



# Classification

Ortiguera JBJS 2002

- Disruption of extensor mechanism
- Loosening of the patellar component



- Type I stable implant + intact extensor mechanism
- Type II extensor mechanism disruption
- Type IIIa loose implant + good bone stock
- Type IIIb loose implant + insufficient bone stock

# Clinical

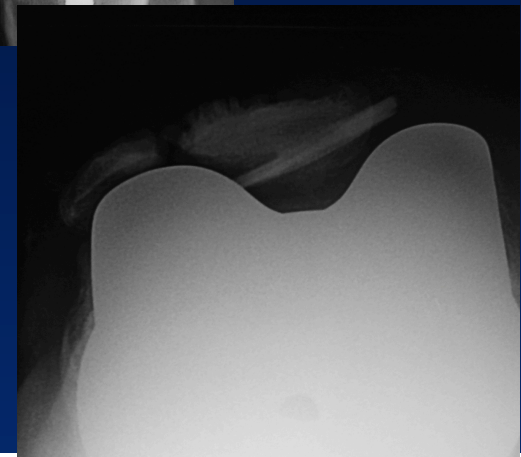
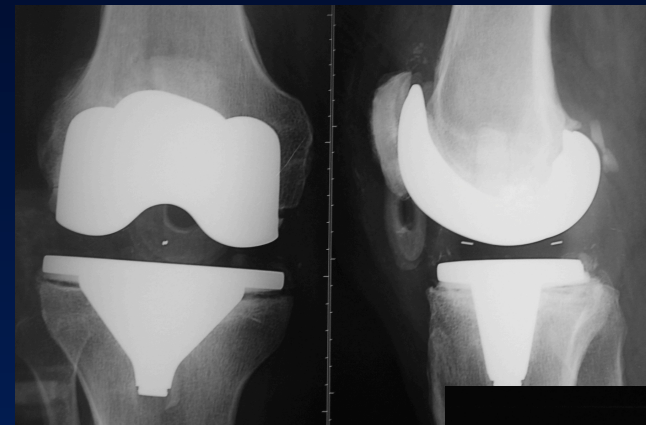
- Mid term FU
- Radiological finding or acute (stress or trauma)
  
- Pain
- Swelling
- Locking
- Lack of extension  $> 20^\circ$  to inability to extend ++
  
- Or almost NOTHING!!  $\approx 50\%$  except AKP

# Imaging assessment

Sheth JBJS 2007

- X rays tangential & lateral views
- CT Scan / suspected abnormal rotations
- Bone scan

- Fracture line
  - Vertical, Transverse
  - Partial
  - Displacement
  - Location / component pegs
- Oversized components



# Spectrum of treatment

Nelson Mas Orthop Surg Knee Arthro 2009

## Conservative

- Non displaced or vertical
- Asymptomatic
  - even with loose component to remove > healing
- Splint in extension 6 to 8 weeks

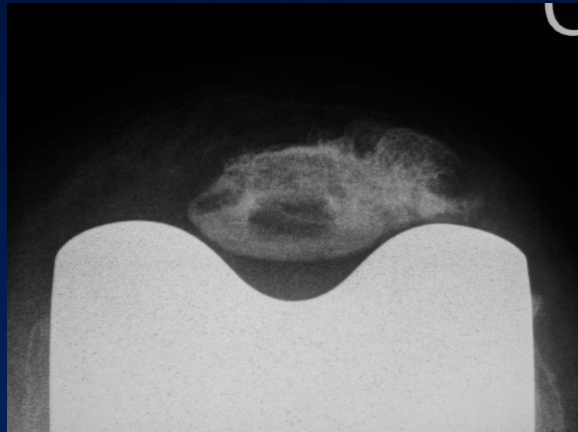


# Spectrum of treatment

Ortiguera JBJS 2002, Nelson Master Orthop Surg Knee Arthro 2009  
Sheth JBJS 2007, Papalia KSST 2015

## Internal fixation

- Challenging in regard bone stock acceptable
- Tension band wiring
- Non absorbable suture ethibon



• Partial excision + extensor mechanism repair are significantly better than bad (instable) fixation



# Spectrum treatment

- Patellar implant removal +/- resurfacing (type IIIa)
  - Check viability of remaining bone
  - Very small implant
  - Graft
  - (Tantalum shell ?)

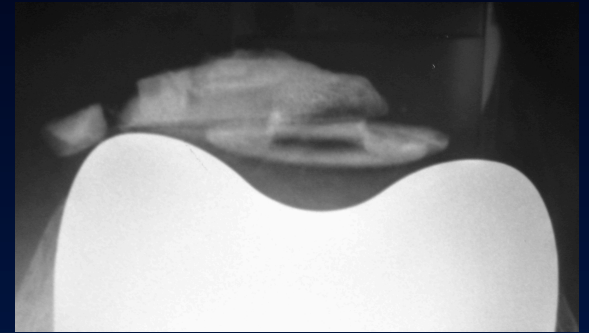
Nelson Mas Orthop Surg Knee Arthro 2009

- Reconstruction extensor mechanism
  - Auto (gracilis, ST, ITB) or allograft
- Salvage / Implant removal & Resection arthroplasty
- Revision of TKA in case of severe malpositioning



# Surgical Tricks

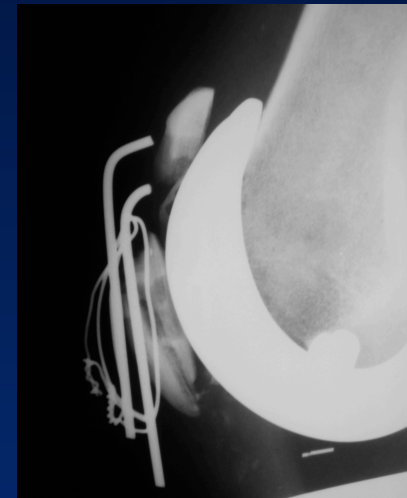
- Pay attention to blood supply
  - joint exposed through the fracture site
- Check viability of remaining patella
- Debridement
- Keep the most central bone fragment
- Transosseous suture to fix Quad or Patellar tendon
- Immobilization in extension for 6 w



# Results of literature

Ortiguera JBJS 2002, Keating CORR 2003  
Parvizi CORR 2006 & J Orthop Trauma 2008,  
Sheth JBJS 2007, Chalidis Injury 2007

- Dramatically changes the prognosis
- 82 % satisfied with conservative TTT (I, IIIa)
- High rate of complications (50%) > surgery
  - few numbers
  - Up to 92% of non union
  - Quad weakness (instability)
  - Loss of extension
  - Pain
  - Instability



# Conclusion

- Quite rare, devastating prognosis factor
- Priority to conservative treatment
- Attempt to preserve the patella
  - Per op decision making ++
- Poor outcome > surgery
- Pay attention to patella approach