


**5th Advanced Course in Knee surgery**  
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 Val d'Isère - France

**Arthroplasty after previous surgery:  
 After fracture ( including patella)**  
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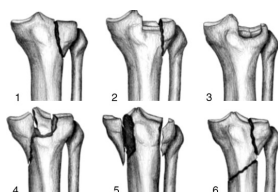


**Princess Royal Hospital, Telford**



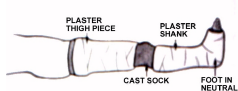



**Tibial plateau fractures**

- 1% all fractures
- High volume young patients
- Location
- Mechanism: axial load
- Lateral plateau 70%
- Younger patients: split
- Medial plateau 15%
- Older: depression
- Bicondylar 15%




**Treatment methods**

- Plaster Paris
- Cast brace
- Open reduction & Internal fixation
- Arthroscopic reduction & internal fixation
- Frame reduction

**Natural progression**

- Manidakis Int Orthop 2010
- Jensen J Orthop Sci 2013
- 125 patients f/up 20/12
- 22 patients all bicondylar type C
- 56.8% poor joint alignment
- ORIF 20 patients f/up 67/12
- 26.4% OA
- 9.6% varus
- 8.8% valgus
- 15.2% superficial infection
- 39% complication rate
- 9.6% deep infection
- Osteoarthritis
- None 30.4%
- Mild 34.8%
- Clear 26.1%
- Severe 13%
- Lower flexion 125° compared 135°

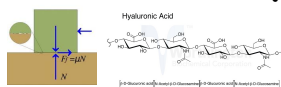


**Natural progression**

- Mattiassich Int Orthop 2013
- Summary
- Case series 30 patients at 22 years
- 60% Osteoarthritis
- 1/3 no OA
- Post traumatic bone loss
- Mehin Can J Surg 2012
- 86% OA 10yrs

### Factors

- Giannoudis Injury 2010 reminds us
- Other factors other than articular step off are important
- Joint stability
- Retention meniscus
- Coronal alignment
- Bollard JBJS Am 2012
- Effect tibial plateau fracture on lubrication function & composition synovial fluid
- Kinetic friction coefficients 100x higher
- Hyaluron Conc 9x lower
- Proteoglycan 4 Conc 2 x higher



### Outcomes after patella fractures

- Lazaro JBJS Am 2013
- 7% wound dehiscence rate
- 11% removal symptomatic implants
- 57% patella baja
- 80% anterior knee pain
- 12 months f/up functional impairment
- 41% strength
- 47% power
- 34% endurance



### Context Tibial plateau fractures & arthroplasty

- Secondary Knee Replacement for fracture
- Primary knee replacement for fracture

### Arthroplasty post ORIF

- Saleh JBJS Am 2001
- 15 TKR performed ave. 38.6 months
- HSS 51>80 pts
- Arc Motion 87°>105°
- XR all incomplete radiolucencies
- 3 high rate infection
  - 2 arthrodesis
  - 1x2 stage exchange
- 2 patellar tendon disruption
- 3 closed MUA

### Arthroplasty post ORIF

- Larson Clin Orthop Relat Res 2009
- Matched case controlled study
- Retrospective 19 patients post infected ORIF vs. Non-infected ORIF
- Elapsed time of most recent infection to Arthroplasty 5.6 years
- 53% complication rate
  - 3 Surgical wound breakdown
  - 1 Manipulation
  - 2 Aseptic loosening
  - 2 Definite resection arthroplasty
  - 2 AKA
- 26% had recurrent infection mean 1.1years

### Lateral Uni Arthroplasty for fracture

- Lustig Clin Orthop Relat Res 2012
- 13 patients Lateral cemented UKA
- Mean age 50years
- Mean follow up 3 yrs
- KSS 51>88 points
- Prosthesis survivorship 100% 5 & 10 years
- 80% 15 years



### Arthroplasty post ORIF

- Prone
- Deep infection
- Extensor mechanism disruption
- Aseptic loosening
- Post op stiffness
- Multi-factorial
- Younger patient
- Bony deficiency
- Soft tissue compromise
- Post traumatic stiffness
- Prior occult infection

### Primary Knee Replacement for fracture

- Vermiere Acta Orthop Belg 2010
- Elderly & pre-existing OA
- 12 patients Mean 73yrs
- TKA within 3 weeks
- Early FWB
- At 31 months follow up Knee score 75
- Poor results pre-existing conditions
- Civinni Chir Organi Mov 2009
- Case series 29 TKR 57 years, 92/12 follow up
- 8% implant failure
- 18 excellent/good
- More complicated tibial fracture increased post op complication

### Take home messages

- Majority patients post tibial plateau fracture get OA
- Complication rate ORIF high particularly infection
- Subsequent TKA 20% failure rate
- Those that have infection will have 50% complication rate
- Consider Primary TKR for elderly patients

### Thank you

