



## How I do : A Tibial Tubercle Osteotomy ?

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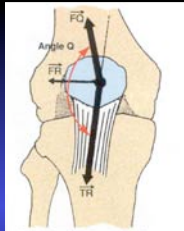
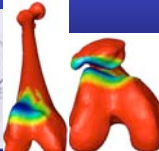



3<sup>rd</sup> Advanced Course on  
**Knee Surgery**  
January 17<sup>th</sup> - 22<sup>nd</sup> 2010



## The Patello-Femoral Joint

- Lever arm for extensor mechanism
- Q angle variable with pelvis, gender
- PF contact moves proximally with flexion
- Patella cartilage thickest of body

### TRAUMATIC PATELLAR DISLOCATION

- 17% recurrence after one dislocation
- 49% recurrence after two dislocations


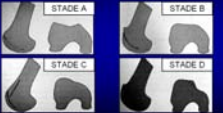
Fithian DC et al; Am J Sport Med 2004

### RECURENT PATELLAR DISLOCATION

Multiple and combine etiologies

Dejour et Walch, RCO, 1990


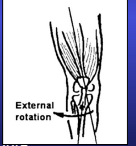
- Muscular imbalance
- Constitutional laxity
- Patella alta
- Abnormal Q angle
- Trochlear dysplasia

## Recurrent Lateral Patellar Dislocation Distal Realignment

⇒ Isolated distal realignment

- Designed to medialize a laterally displaced tibial tubercle
- Effectively decreases the q angle

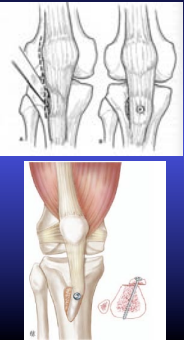



*Mihalko et al, JBJS Am 2007*  
*Migaud et al, RCO 2003*

## Techniques of Distal Realignment

⇒ Emslie-Trillat

- Lateral Parapatellar incision
- Osteotome in retropatellar bursae
- Displaces tubercle medially
- Fixed w/ screw

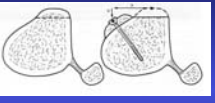


## Techniques of Distal Realignment

⇒ auser Technique

- Tubercle osteotomy
- Transferred medially and posteriorly

⇒Increases patellofemoral contact stresses  
⇒Predisposes to DJD




### Techniques of Distal Realignment

**Maquet Technique**

- Tubercle osteotomy
- Iliac bone graft
- Transferred Anteriorly


⇒ Healing troubles  
⇒ Bother and pain at the anterior aspect of the knee



### Techniques of Distal Realignment

⇒ **Anteromedial Tibial Tubercle Transfer**


- Displaces tubercle medially to decrease the Q angle
- Displaces tubercle anteriorly decrease patellofemoral contact stresses



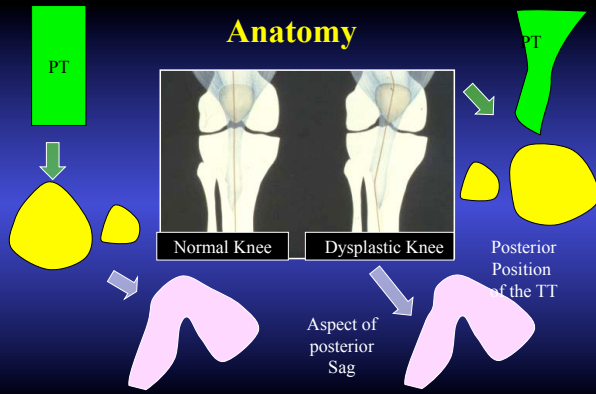
### Techniques of Distal Realignment

⇒ **Modified Fulkerson AMTT**

- Tubercle osteomized
- Elevated anteriorly
- Translated medially
- Maintain distal attachment
- Harvest graft medially



### Anatomy



Normal Knee vs. Dysplastic Knee

Posterior Position of the TT

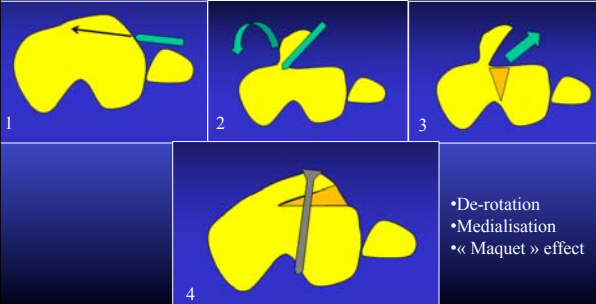
Aspect of posterior Sag

### Our Goals

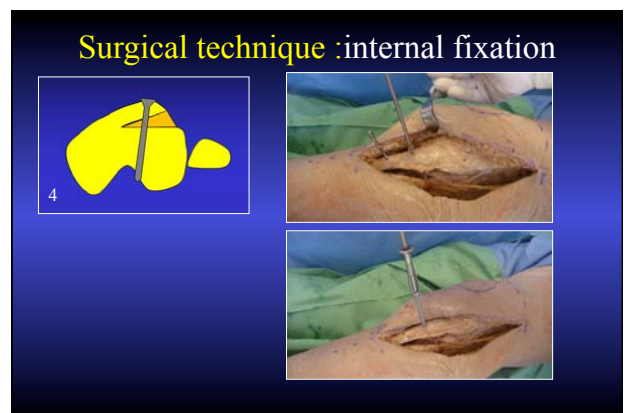
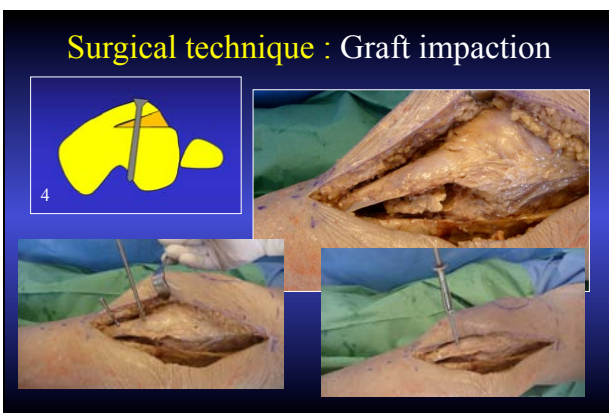
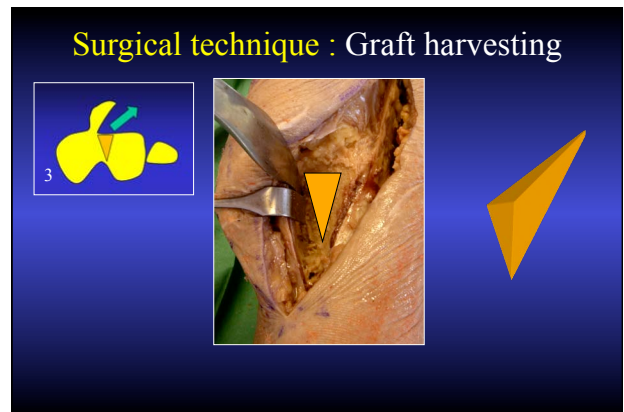
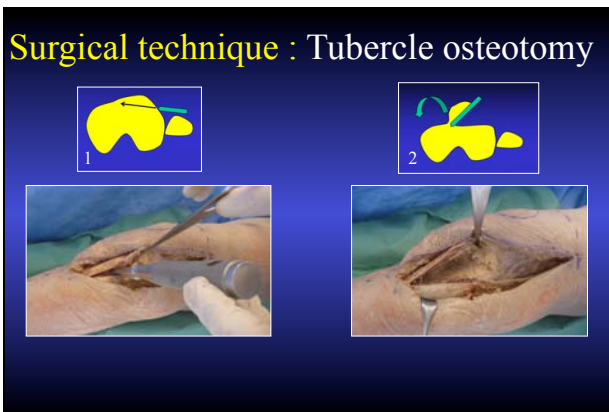
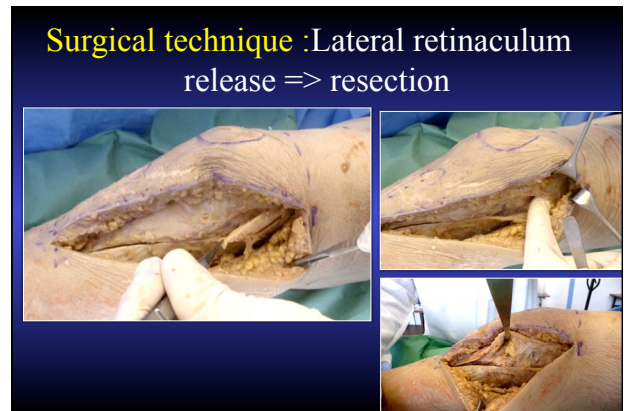
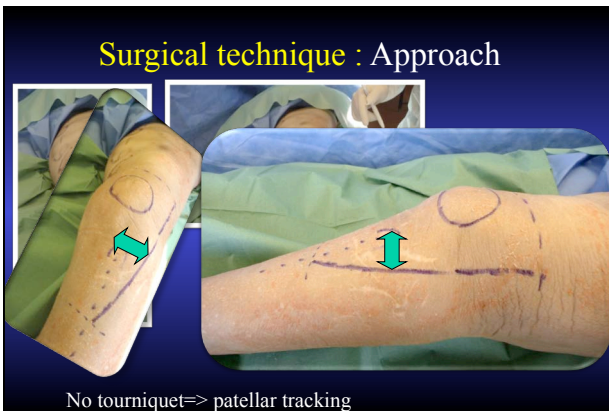
- Displaces tubercle medially to decrease:
  - Q angle
  - Patellar tendon torsion
- Displaces tubercle anteriorly to decrease patellofemoral contact stresses
- Combined procedures: lateral reticular release, lateral vertical patellectomy, cartilage stimulation or grafting, tibial osteotomy, PFA, trochleoplasty

⇒ De rotation and Antero-medial transfer  
⇒ "The Jean-Philippe Laboureau technique"

### Principle



- De-rotation
- Medialisation
- « Maquet » effect


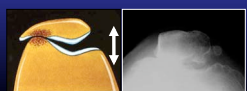


### Surgical technique : Final aspect

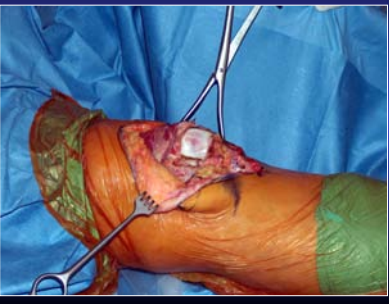



Skin closure only!

### Associated procedures

- Trochleoplasty ( grade B)
 
- Lateral Patelloplasty
 

### Sometimes to late...


CLINICAL ORTHOPAEDICS AND RELATED RESEARCH  
Number 440, pp. 30-33  
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### Patellofemoral Arthroplasty



*An Update*

Jean-Noël A. Argenson, MD; Xavier Flecher, MD; Sebastien Parratte, MD; and Jean-Manuel Aubaniac, MD

- Original group : 66 cases
- Sex Ratio : 2/3 Women
- Age : 57 years (21 – 82 years)
- Actual group : 57 cases
- Minimum followup : 10 years



### Alignment extensor mechanism if needed

### Conclusion

- Anatomy
- Bony structures and soft tissue management
- Conservative surgery
- Avoid articular destruction

