How I do:
A Tibial Tubercle Osteotomy?

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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

RECURRENT PATELLAR DISLOCATION
Multiple and combine etiologies

Dejour et Walch, RCO, 1990
- Muscular imbalance
- Constitutional laxity
- Patella alta
- Abnormal Q angle
- Trochlear dysplasia

Recurrence 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

Emmlie-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

Anteromedial Tibial Tubercle Transfer

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

Techniques of Distal Realignment

- Tubercle osteotomy
- Iliac bone graft
- Transferred Anteriorly

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

Techniques of Distal Realignment

- Modified Fulkerson AMTT

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

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”

Techniques of Distal Realignment

Anatomy

Poserior Position of the TT

Principle

1 2 3 4

⇒ De-rotation
⇒ Medialisation
⇒ "Maquet" effect
Surgical technique: Approach
No tourniquet => patellar tracking

Surgical technique: Lateral retinaculum release => resection

Surgical technique: Tubercle osteotomy

Surgical technique: Graft harvesting

Surgical technique: Graft impaction

Surgical technique: Internal fixation
Surgical technique: Final aspect

Skin closure only!

Associated procedures

• Trochleoplasty (grade B)

• Lateral Patelloplasty

Sometimes to late…

Alignment extensor mechanism
if needed

Conclusion

• Anatomy

  • Bony structures and soft tissue management
  • Conservative surgery
  • Avoid articular destruction

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