MPFL Reconstruction and Tibial Tubercle Transfer in the Adolescent Patient

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Anatomy

- **Patella** = “knee cap”
- **Trochlea** = “groove”
- Cartilage cushion on surface of bones
  - Often injured with dislocation
- **MPFL (medial patellofemoral ligament)** = ligament that keeps knee cap in place
  - Torn/stretched with dislocation
Without surgery:

- Torn/stretched ligament won’t heal
- Knee cap will continue to pop out
- More damage to cartilage
- *Increased* arthritis
- *Poor* long term function
- *Decreased* return to sport
Main Goals for Surgery

Restore Stability

- Decrease arthritis
- Improve function

Return to Sport
Patella Realignment and MPFL Reconstruction

- **Inpatient** surgery (stay in hospital for 1 night then go home next day)
- **General anesthesia** (asleep the whole surgery and won’t feel anything)
- 3 Parts
  - Knee arthroscopy to remove injured tissue (“clean up”)
  - Realign knee cap
  - Reinforce torn/stretched MPFL
Treatment Algorithm – Part # 1

- Arthroscopic evaluation
  - Remove or repair injured tissue
• **Patella Realignment**
  - Lateral release with repair to get knee cap in center of groove
  - Tibial tubercle transfer

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A Modified Osteotomy for Anteromedialization of the Tibial Tubercle

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• **Stabilize Patella**
  - MPFL reconstruction
  - Cadaver hamstring (allograft) tendon is used to replace the torn MPFL
Complications and Considerations

- Anesthesia
- Bleeding
- Nerve injury
- Infection
  - Deep joint infection can require hospitalization, IV antibiotics, multiple surgeries, removal of the graft.
- Stiffness

- Return to Surgery*
  - Screw removal (32%)
  - Arthroscopic debridement (6%)
  - Deep infection (2%)
  - Superficial infection/wound dehiscence (2%)
  - Stiffness (2%)
  - Tibial tubercle fracture (2%)
  - Tibial tubercle nonunion (2%)
  - Tibia fracture (2%)

- Failure to return to sport
Rehabilitation and Return to Sports

- Toe-touch weight-bearing for 6 weeks
- Physical therapy starts 3-4 days after surgery
- Knee brace until adequate quad strength regained
  - Usually 6 weeks
- Encourage range-of-motion exercises
- Healing typically at 3 months
- Running at 4 months
- Rehab Progress Assessment at 6 months
- High-loading / return to sport activities at 6-12 months
  - Strict criteria for return to sport clearance