How to deal with medial patellofemoral ligament reconstruction/tibial tubercle osteotomy failure

Julian A Feller FRACS
OrthoSport Victoria
Melbourne, Australia

Always go back to basics

• History
  – WHAT IS THE PATIENT’S PROBLEM?
• Examination
• Imaging

Instability or pain?

• Is it truly patellar instability?
  – Subluxation or dislocation?
  – At what age did the first episode occur?
  – What were the circumstances?
  – Traumatic (haemarthrosis)?
• Exclude collapsing due to PF pain and quads inhibition
• Exclude other causes of instability e.g. ACL insufficiency

If patellar instability...

• Is there patellar instability in the other knee?
• Is there a family history?

• Both suggest patella alta and trochlear dysplasia
  – If medial TTO and MPFLR, then these may explain recurrence

Details of previous surgery

• How was the MPFLR done?
• Was a lateral release performed?
• What sort of TTO?
  – Medial
  – Distal
  – Anterior

Examination: general

• Coronal and axial alignment
  – excessive valgus, femoral anteversion, external tibial torsion
• Single leg squat
  – quadriceps and gluteal weakness
• Generalised ligamentous laxity
  – Beighton
Examination: knee

- Quadriceps wasting
- Effusion
- ACL integrity
- Patellar height
- Patellofemoral angle (Q angle)

Examination: PFJ

- Patellar apprehension
  - Make sure not tender
  - Angle at which it disappears
- Patellar mobility
  - Use patellar to assess trochlear shape
- Patellofemoral crepitus
  - Active flexion and extension
- J-tracking

Imaging

- Plain X-ray
  - PA weight bearing flexion
  - True lateral 30° flexion
  - Patellar height
  - Trochlear dysplasia
  - Location MPFLR femoral tunnel
  - Skyline
- MRI
  - Patella-trochlea index
  - Chondral surfaces
  - TT-TG distance

Decision making*

- Patellar instability
- J-tracking?
  - Yes: Bony procedure likely required
- MPFL/MPFLR status
  - Deficient: MPFLR or rev MPFLR required
- Patella alta? How much?
  - Yes: TT distalisation required
- Trochlear dysplasia?
  - Yes: Consider trochleoplasty
- PF chondral surfaces
  - OA: Beware!

Most likely scenario...

- True recurrent patellar instability despite previous surgery
  - MPFLR, possibly with poor femoral tunnel placement, and medialisation of TTT
  - In setting of patella alta and trochlear dysplasia

Approach

- Check limb alignment, most likely within normal limits
- Consider non-operative management
- Surgical options are:
  - Revision MPFLR
  - Distalisation of TTT
  - Trochleoplasty