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Recurrent lateral patellar dislocation treated with superficial quadriceps tendon autograft medial patellofemoral ligament reconstruction: A case report

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Abstract
Recurrent lateral patellar dislocation in young, active patients is commonly due to medial patellofemoral ligament (MPFL) insufficiency. We present a 19-year-old female with recurrent patellar instability after a traumatic event, found to have Dejour type-A trochlear dysplasia and near-complete MPFL tear. She underwent MPFL reconstruction using a superficial quadriceps tendon autograft while preserving patellar attachment, thereby avoiding patellar tunnels. At 6 months, she was pain-free, fully functional, and returned to dance without instability. Quadriceps tendon autograft offers a safe and effective option for MPFL reconstruction.

Keywords: Patellar dislocation, MPFL reconstruction, quadriceps tendon autograft, patellar instability

Introduction

Recurrent lateral patellar dislocation (RLPD) significantly impairs young, active patients. The MPFL is the primary restraint to lateral translation in early flexion [3,14]. When conservative management fails, MPFL reconstruction is indicated [16]. Quadriceps tendon autograft offers biomechanical advantages while avoiding risks of patellar fracture [9,11,17]. We report a case of RLPD successfully treated with superficial quadriceps tendon autograft MPFL reconstruction.

Case Report

A 19-year-old female with alleged history of fall down before 1 year while dancing followed by right sided traumatic patellar dislocation. Which was reduced by its own. Since then patient having 3-4 episodes of non-traumatic patella dislocation. Patient was presented to Orthopedics Department at New Civil Hospital, Surat with complain of right sided patellar instability.

Clinical Examination: Positive apprehension test, grade 3 lateral translation, J-sign, and tenderness along the medial retinaculum. No generalized hyperlaxity. ROM 0–130° with apprehension in early flexion.

Radiological Findings:

- **X-ray:** Dejour type-A (crossing sign) normal facet geometry with shallow trochlea. [6]

Fig 1: Pre-op x-ray

- **MRI:** Mild shallowing of femoral trochlear fossa, mild trochlear dysplasia type-A. Mild articular cartilage thinning in patella suggestive of Chondromalacia patellae grade-2. Focal irregularity and severe attenuation thinning of Medial patellofemoral ligament, s/o chronic near complete to complete tear [2

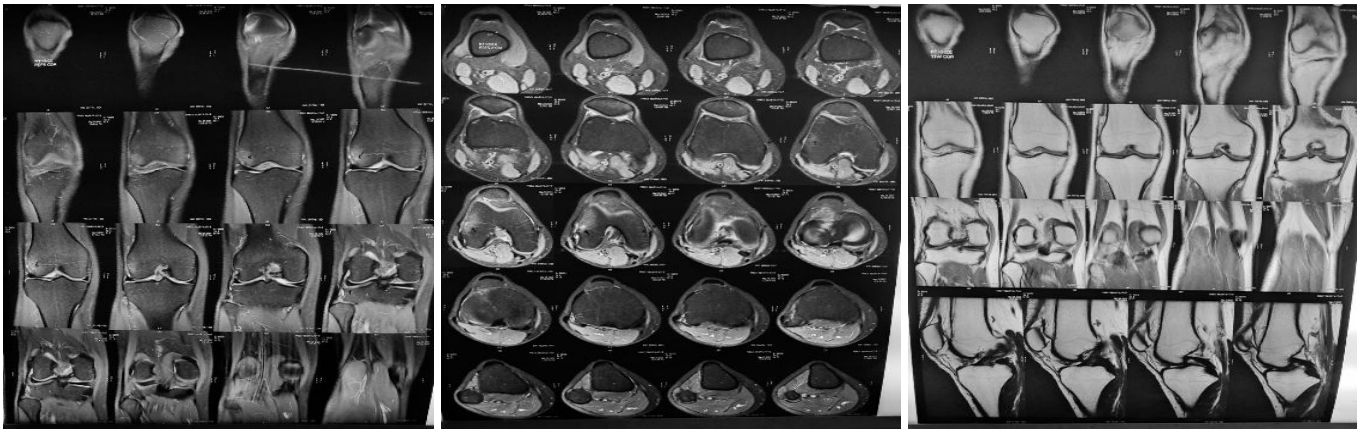

Fig 2: Pre-op MRI

Surgical Technique: [11]

1. **Anesthesia & Positioning:** Spinal anesthesia, patient supine, tourniquet applied.
2. **Arthroscopy:** Diagnostic arthroscopy performed to assess tracking, cartilage, and loose bodies.
3. **Incision & Exposure:** 6–7 cm midline incision proximal to the patella.
4. **Graft Harvest:** 10–12 mm wide superficial quadriceps tendon strip harvested, partial thickness, maintaining native patellar attachment (no patellar tunnels required).
5. **Graft Preparation:** Proximal end whipstitched and rotated medially to superomedial patella.
6. **Tunnel Creation:** Subvastus tunnel developed toward medial femoral epicondyle.
7. **Femoral Fixation Site:** Isometric point identified between medial epicondyle and adductor tubercle, confirmed fluoroscopically.
8. **Socket Preparation:** Guide pin and reamer used to create femoral socket.
9. **Graft Passage & Fixation:** Graft passed through subvastus tunnel and fixed at 30° knee flexion with interference screw.
10. **Tensioning:** Ensured patella translated laterally ~50% of its width, avoiding over-constraint.
11. **Closure:** Medial retinaculum reinforced; incision closed in layers.

Fig 3: Intra-op images of Arthroscopic assessment and graft preparation and screw fixation

Fig 4: Post-op x-ray

Rehabilitation: Hinged brace 0–90° for 2 weeks, early quadriceps isometrics, and progressive strengthening [16]. Full weight-bearing achieved by 6 weeks. Return to jogging at 3 months and to sports at 6 months.

Results
At 6 months follow patient was totally pain free and was able to do her daily routine activities without pain and full function recovery. In short period of time patient was able to join her dance practice again without pain and without any risk of patella instability.

Discussion
Recurrent lateral patellar dislocation results primarily from medial patellofemoral ligament (MPFL) insufficiency, as the ligament contributes over half of the restraining force against lateral patellar translation. In the present case, mild trochlear dysplasia was noted, but the absence of patella alta or generalized hyperlaxity emphasized MPFL deficiency as the dominant factor.

Quadriceps tendon autograft offers key advantages over hamstring grafts, including preservation of the native patellar attachment, avoidance of patellar tunnels (and hence reduced fracture risk), and sufficient graft strength. Proper femoral tunnel placement and fixation at 30° flexion are critical to avoid over-constraint or persistent instability. In this patient, an anatomic reconstruction with careful rehabilitation achieved excellent early functional recovery, consistent with published outcomes.

Conclusion
Superficial quadriceps tendon autograft is a reliable and safe graft choice for MPFL reconstruction, offering biomechanical advantages and reducing complications associated with patellar tunnels. This case reinforces its role as an effective option in young, active patients with recurrent patellar instability.

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