

Medial Patellofemoral Ligament (MPFL) reconstruction using a pedicled quadriceps tendon graft as a revision to prior, unsuccessful operations



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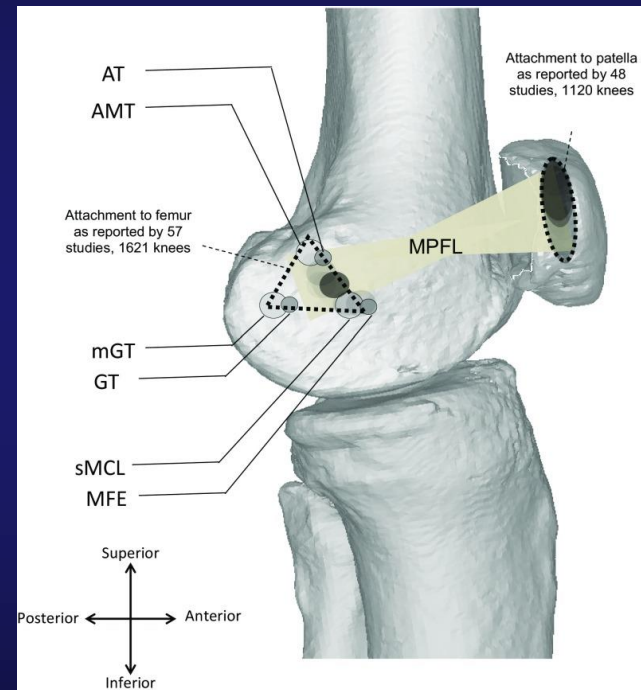
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Introduction

- Medial patellofemoral ligament (MPFL) is the primary soft tissue restraint to lateral patellar dislocation close to knee extension. Rupture of the MPFL has been reported in 95 to 100% of patients with acute patellar dislocation. Different surgical techniques with promising clinical results have been reported to reconstruct the MPFL and restore patellar stability. Although only few of these techniques have the advantage of avoidance on bony patellar complications.



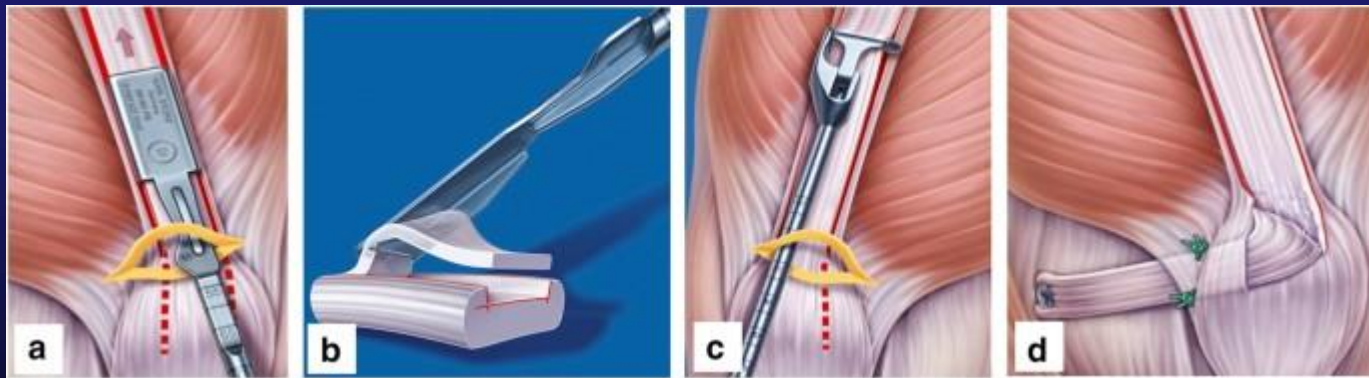
Purpose

- This study aims to compare the functional outcome of MPFL reconstruction using a pedicled quadriceps tendon graft after the unsuccessful prior surgeries such as, lateral release and medial plication which is a and to identify possible risks.



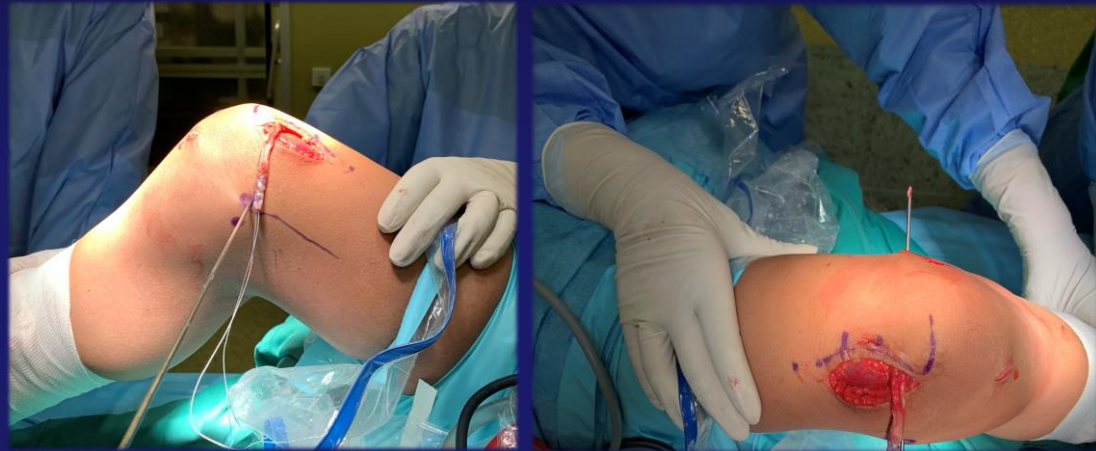
Methods

- Six patients were included in this retrospective study with a history of recurrent dislocation trauma from 2017 to 2019 who underwent MPFL reconstruction using quadriceps tendon graft after a failed previous surgery using lateral release and medial plication techniques. The outcomes were evaluated comparatively pre-operative and 2 years post-operatively using IKDC score, Lysholm knee score, Kujala score, thigh circumference size, and kneel down ability. Patellar fracture, re-dislocation, and other complications were also assessed 2 years post-operative.



Methods

- We used a 3mm thickness medial superficial slip of the quadriceps tendon as a graft (6-8 cm length and 6-8mm width)
- The pedicled graft is reflected 180° and rotated 90° toward medial.
- The graft is then fixed into a bony tunnel using a bioabsorbable screw



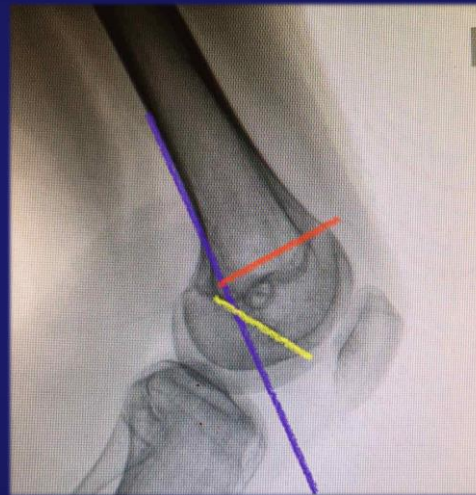
Methods

- Accurate placement of the graft at or within the 7-mm circle of Schottle point (acceptable position) over the femur (performed by the help of fluoroscopy) is a really crucial point of the procedure
- The gross morphological appearance of such a quadriceps tendon strip more closely resembles the natural MPFL

M. Herbolt, C. Hoser, S. Lenschow, B. Schliemann, C. Koesters, M. Raschke, et al.

[*Biomechanical properties of a new MPFL reconstruction technique using quadriceps tendon in comparison to the intact MPFL. A human cadaveric study*](#)

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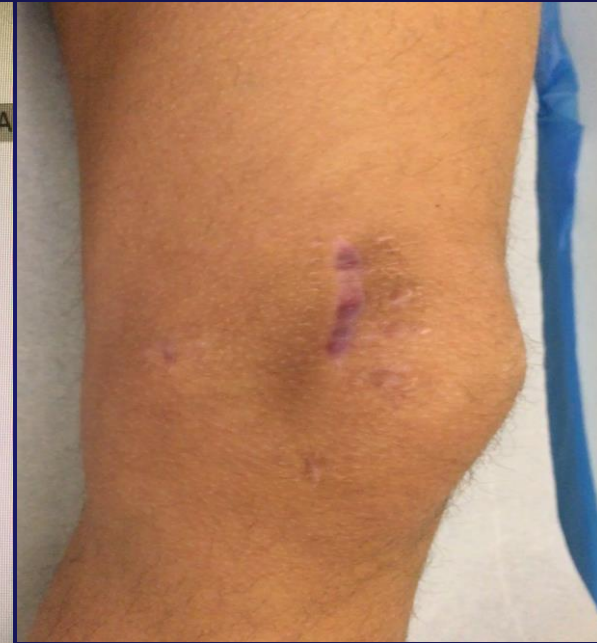


- A. Purple line- Posterior Cortex extension line
- B. Red line-Posterior margins of Medial Femoral condyle line
- C. Yellow line - Blumensaat line



Results

- The average age at the time of operation was 15,5 years old (14-17),
- The average follow-up after operation was 15 months (12-24) and showed significant improvement in clinical outcomes.
- Five patients were very satisfied (83,4%), and one patient was partially satisfied with the surgical procedure (16,6%).
- The Lysholm score increased from 64.28 ± 6.33 to 90.49 ± 3.24 ($p = 0.012$),
- IKDC score increased from 61.83 ± 6.46 to 89.26 ± 2.83 ($p < 0.001$).
- Kujala score increased from 62.10 ± 6.59 to 88.53 ± 4.32 ($p < 0.001$) with decreased in thigh circumference (1–2 cm).
- Four patients have full ROM, able to kneeling, while 2 patients were able to kneeling with adjustments.
- There were no postoperative infection, patellar fractures nor re-dislocations.



Conclusions

MPFL reconstruction using a pedicled quadriceps tendon graft in failed lateral release and medial plication procedure can provide improved clinical results without complications of patellar fracture or stiffness of the knee, infection, and re-dislocation. It might therefore be a valuable alternative to more extensive procedures.



References

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