Case Report

Anatomical reconstruction of the medial patellofemoral ligament during subvastus approach in total knee arthroplasty: A technique to improve patellar tracking

Kavin. S[1]*, Chockalingam. S[2], Ramasamy. R[3]

[1]Registrar, Department of Orthopedics, Kauvery Hospital, Cantonment, Trichy, Tamil Nadu
[2]Senior Consultant Orthopaedic Surgeon, Kauvery Hospital, Trichy, Tamil Nadu
[3]Head of Department & Senior Consultant Orthopaedician, Kauvery Hospital, Trichy, Tamil Nadu
*Correspondence

Abstract

Background: Patellar maltracking remains a significant complication following total knee arthroplasty (TKA), often leading to anterior knee pain, instability, and accelerated polyethylene wear. While several intraoperative adjustments—such as external rotation of components and lateral release—are standard, they may be insufficient in cases of severe pre-existing instability. The medial patellofemoral ligament (MPFL) is the primary passive restraint against lateral patellar displacement. We present a surgical technique combining the quadriceps-sparing subvastus approach with anatomical MPFL reconstruction to optimize patellofemoral kinematics during primary TKA

Key Words: Total Knee Arthroplasty; MPFL; Subvastus approach; Patellar maltracking

Citation: Kavin. S, Chockalingam. S, Ramasamy. R. Anatomical reconstruction of the medial patellofemoral liga-ment during subvastus approach in total knee arthroplasty: A technique to improve patellar tracking. Kauverian Med J. 2026;3(5):37-38.

Academic Editor: Dr. Venkita S. Suresh

ISSN: 2584-1572 (Online)

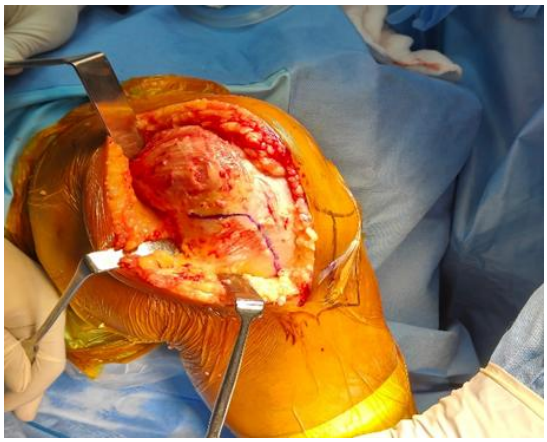
1. Introduction

Optimal patellar tracking is a critical determinant of functional outcome following total knee arthroplasty (TKA). Although the subvastus approach preserves the extensor mechanism, partial detachment of the vastus medialis from the patella is often unavoidable. The medial patellofemoral ligament (MPFL), a key stabilizer against lateral patellar translation, is frequently disrupted during exposure but is rarely addressed during closure. Failure to anatomically restore the MPFL may contribute to postoperative patellar maltracking. This study describes a technique of identifying, tagging, and anatomical repair of the MPFL during closure of subvastus TKA.

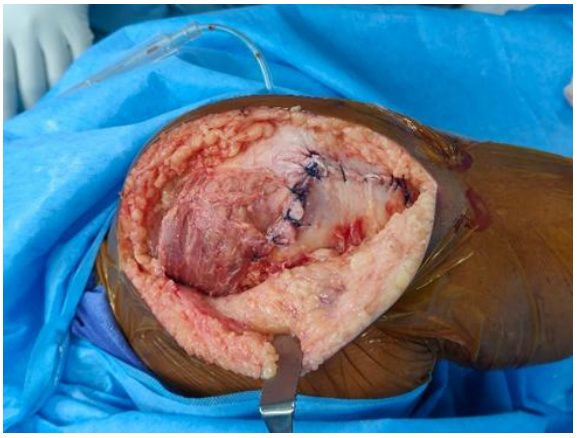
2. Materials and methods

This poster describes a surgical technique employed during primary total knee arthroplasty performed through the subvastus approach. Following medial parapatellar exposure, the MPFL fibers detached from the superomedial border of the patella were care-

fully identified and tagged using non-absorbable sutures. Standard bone cuts and component implantation were performed. During closure, the MPFL was anatomically repaired to its patellar insertion prior to reattachment of the vastus medialis. Intraoperative patellar tracking was assessed using the no-thumb test before and after MPFL repair.







3. Conclusion

Anatomical identification and repair of the MPFL during closure of the subvastus approach in TKA is a simple, effective technique to enhance patellar tracking and restore native medial soft-tissue anatomy. This method may reduce the risk of postoperative patellar maltracking and contribute to more anatomical reconstruction of the extensor mechanism. Further clinical studies are warranted to evaluate long-term functional outcomes.