

SUCCESSFUL SURGICAL MANAGEMENT OF HABITUAL PATELLAR DISLOCATION IN A TEENAGE PATIENT: A CASE REPORT

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Abstract

Habitual dislocation of the patella is a rare condition characterized by the patella dislocating upon knee flexion and spontaneously returning to its normal position upon extension. Unlike recurrent dislocation, habitual dislocation is typically painless and asymptomatic. Management of this condition often requires a combination of surgical procedures due to the lack of universally effective single interventions. Herein, we present the case of a 17-year-old girl with habitual patellar dislocation who underwent surgical treatment at our hospital. The surgical approach involved lateral patellofemoral release, reconstruction of the medial patellofemoral ligament using a harvested semitendinosus graft, and medialization of the patellar tendon with tibial tuberosity osteotomy. The patient's recovery was uneventful, and she resumed routine activities comfortably after six months of follow-up. Discussion highlights the pathophysiology of habitual patellar dislocation, emphasizing the importance of addressing both lateral retinaculum shortening and medial stabilization. Overall, a combined surgical approach targeting these factors tends to yield favorable outcomes in managing habitual patellar dislocation cases.

Introduction

Habitual dislocation of the patella is a rare condition where the patella dislocates whenever the knee is bent and then returns to its normal position when the knee is straightened(1). It's different from recurrent dislocation, which involves occasional dislocations due to trauma and is typically painful with swelling(2). Habitual dislocation, on the other hand, is usually painless and doesn't cause any symptoms(3). While several surgical procedures have been suggested for treating this condition, none have been universally effective, so a combination of procedures is often recommended(1).

Case Report

A 17-year-old girl presented with a history of falling while playing 2 years ago, resulting in a deformity in her right knee and difficulty in running and sitting cross-legged. Despite consulting several local practitioners without relief, she sought treatment at our hospital. On examination, her right knee showed a deformity with the patella palpable at the outer aspect of the knee in flexion, returning to its normal position in the middle when fully extended. There were no scar marks or signs of swelling or increased temperature. Routine blood tests were normal. X-rays and further imaging confirmed lateral displacement of the patella (Figure 1), and surgery was planned after confirming anesthesia fitness.



Fig.1: Pre-Operative X-ray showing Lateral Displacement of Patella

Under spinal anesthesia, with the patient in a supine position, Arthroscopic lateral meniscus anterior horn cyst decompression done. Lateral Patello femoral release was then performed. After that harvesting of Semi Tendinosus graft from the ipsilateral knee was done, which was used for reconstruction of the Medial Patellofemoral Ligament (MPFL) (Figure 2).



Fig. 2: Harvesting of Semi-Tendinosus graft for Medial Patellofemoral Ligament (MPFL) Reconstruction

The tibial tuberosity was then osteotomized (Figure 3) and fixed medially on the tibia using two cannulated cancellous screws (Figure 4). Intraoperatively, patellar stability was confirmed by passive flexion and extension of the knee.



Fig. 3: Osteotomized Tibial Tuberosity



Fig.4: Tibial Tuberosity fixed medially on the Tibia using two Cannulated Cancellous screws

The postoperative course was uneventful, and knee mobilization began the day after surgery. Postoperative Xrays showed the patella in the midline position (Figure 5). The patient was provided with a knee hinged brace for four weeks. After six months of follow-up, there was no deformity or dislocation, and the patient was satisfied, able to comfortably resume her routine activities.



Fig.5: Post-Operative X-ray showing the Patella in mid line position with CC screws in situ

Discussion

Habitual dislocation of the patella is an uncommon condition in adults, more commonly observed in children(4).

A key physical indicator of habitual dislocation is the inability to flex the knee beyond a certain range (usually 30-70 degrees) if the patella is forcibly kept in the midline(1). Full flexion is only achievable when the patella is allowed to dislocate(1). The primary pathophysiology involves fibrosis and shortening of the lateral retinaculum due to injury or trauma, leading to muscle necrosis and fibrosis, particularly in the vastus lateralis and iliotibial band(4). Other contributing factors may include poor medial stabilization of the patella due to factors such as weak vastus medialis, dysplasia, joint laxity, or post-traumatic laxity of the medial capsule(1). Patients with habitual dislocations often exhibit weak vastus medialis activity and relatively stronger vastus lateralis activity(5).

The management of this condition typically involves several steps. Initially, extensive superolateral release is performed by detaching the iliotibial band and fascia lata from their attachment to the patella, along with detachment of the vastus lateralis from the patella(4). If needed, division of the vastus intermedius tendon and elongation of the rectus femoris may follow. Subsequently, a second step involves advancing the vastus medialis after proximal release(4). Distal realignment procedures may then be added, such as medialization of the patellar tendon or semitendinosus tenodesis in children, and anteromedial tibial tubercle transfer technique in adults(1).

Conclusion

Repairing habitual patellar dislocation typically necessitates a combination of surgical procedures rather than relying on a single intervention. A successful approach often involves shortening the medial patellofemoral ligament along with releasing the lateral retinaculum and medially repositioning the patellar tendon. This combination tends to yield positive outcomes in such cases.

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Conflict of interest

The authors declare no conflict of interests

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