

## Physal-Sparing Medial Patellofemoral Ligament Reconstruction in 14years Girl with Chronic Patella Instability: A Case Report

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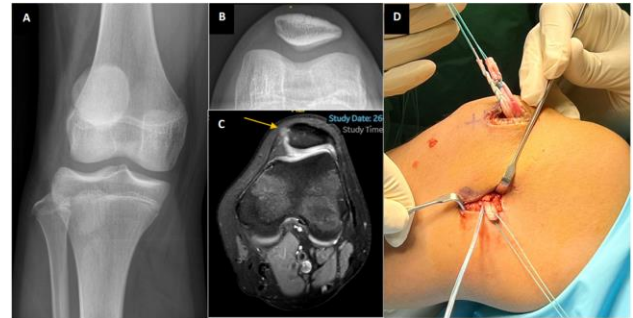
### INTRODUCTION:

Patellar instability is common during adolescence. Congenital and infantile patella dislocation differ from adolescent instability; noticeable abnormalities may occur at birth. The development of the patellofemoral joint generally does not involve a simultaneous decrease in quadriceps angle and patellar height and a reduction of trochlear depth. Adolescent instability may indicate a lifelong condition that can lead to chronic disability and arthritis.

### REPORT:

A fourteen-year-old healthy girl presented to us with multiple histories of right patella dislocation, which was started in 2020. It usually occurs during knee flexion and reduces spontaneously. Further history revealed that the Her daily activities were disrupted, and she could not participate in sports. Patellar Apprehension Test was positive, and Beighton's score was 8. MRI revealed a medial patellar retinaculum high-grade partial tear. A medial patellofemoral ligament reconstruction with a hamstring graft was done. The hamstring graft was anchored to the distal femur and patella using an onlay technique with suture anchors to minimize physal injury.

Recurrent patellar instability presents a challenging issue that leads to pain and anxiety during basic functional tasks, and it can potentially result in lifelong symptoms. More than 50% of adolescents with instability experience recurring episodes, which increase the risk for secondary degenerative changes. When assessing the patient, it is crucial to evaluate anatomical factors contributing to instability and consider the possibility of associated genetic syndromes. However, trochleoplasty and tubercle transfer should be performed with care as there is a risk of damage to the physis. Non-operative management



(A) AP view of the right knee showing the patella laterally subluxed. (B) Merchant view of the knee. (C) MRI knee axial view, arrow showing MPFL partial tear. (D) Intra-op picture of MPFL reconstruction with hamstring graft, which was anchored with an onlay technique using suture anchors.

is the primary approach, but in cases where the instability has a severe impact, an MPFL reconstruction may be necessary until an anatomical reconstruction can be done. If there is still significant growth potential, the MPFL reconstruction can be performed using an extraosseous technique. On the other hand, if there is only minor growth remaining, femoral screws can be placed under image intensifier guidance to ensure fixation with minimal risk of deformity. Once the growth plates have closed, the authors recommend an individualized surgical approach that focuses on identifying and correcting major anatomical causes of instability.

### CONCLUSION:

Treating patella instability in adolescents can cause growth disturbance and deformity. The growth potential should be taken into account when considering surgery. An alternative is to delay reconstructive surgery and focus on physiotherapy and soft-tissue reconstruction until the knee growth is completed.

### REFERENCES:

1. Clark D, Metcalfe A, Wogan C, Mandalia V, Eldridge J, Metcalfe A, et al. Adolescent patellar instability. *Bone Jt J.* 2017;(2):99–159.