

## Case Report

# Single stage management of chronic posterolateral knee dislocation in a middle-aged man - a case report.

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## Abstract

**Background:** Posterolateral knee dislocation rarely occur and might not reduce due to buttonholing of the Femoral condyle into the anteromedial knee joint capsule. These are complex injuries without any clear guidelines in terms of management.

**Case presentation:** 40-year-old male presented with posterolateral knee dislocation due to a road traffic accident. Patient was having posterior cruciate ligament (PCL) injury along with posterolateral corner instability supported by clinical examination and confirmed with radiologic investigations.

**Management and Results:** Patient was managed with single-stage arthroscopic reconstruction of PCL followed by open posterolateral corner ligaments reconstruction. Postoperatively patient had positive functional outcomes with satisfactory international knee documentation committee subjective knee form (IKDC) scores.

**Conclusion:** Posterolateral Corner Injury (PLC) injury with associated PCL injury showed positive results when managed in a single-stage procedure.

## Keywords

Chronic Knee Dislocation, Posterolateral Corner Injury, Posterior Cruciate Ligament, Laprade Technique.



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## Introduction

Posterolateral knee dislocations represent a small entity of knee dislocations<sup>1</sup>. These are complex injuries without any clear guidelines in terms of management<sup>2</sup> Mostly knee dislocations are caused by Road Traffic Accidents and sports activities. Anterior and Posterior knee dislocations are the most common types of knee dislocation. However, posterolateral and posteromedial knee dislocation AKA Rotary Dislocations, are the least common type of knee dislocation<sup>3</sup>. About 20 to 50 % of Knee dislocations reduce spontaneously; however Posterolateral knee dislocation does not reduce due to buttonholing phenomena<sup>4</sup>. We present a case of chronic posterolateral knee dislocation with its physical and investigational findings.

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## Case presentation

A 40-year-old male, Labourer by profession, presented in the outpatient department with complaints of pain and deformity of the left knee and inability to perform daily activities due to left knee joint instability for the last 8 months. The patient had a history of RTA in which he was hit by a cart and injured his left knee while travelling on a motorbike.

The patient was taken to a medical facility near his village, where he was discharged after providing first aid. The patient did not seek further medical assistance due to socioeconomic conditions. Due to continuous pain, deformity and instability, the patient presented in tertiary care hospital.

On inspection, there was varus deformity of the knee with the appreciable head of fibula at the lateral aspect of the left knee. There were few scar marks of the previous injury over the front of the knee. Sag sign was present and the patient was having recurvatum deformity of the tibia from lateral inspection. On Active ROM, Flexion at the

knee was painful but achievable up to 90 degrees, and extension was up to 0 degrees. Anterior drawer sign and posterior drawer sign were positive. Varus stress test at 0 and 30 degrees was positive. Dial test was also positive. Macmurray test for meniscus injury was not performed due to baseline tenderness. IKDC score was 25/87 (28.7%).

On Knee x-rays, the patient was having posterolateral shifting of the tibia over the femur. MRI Scan of the left knee showed anteromedial translation of femur over tibia with a partial tear of ACL and complete tear of PCL. Menisci were thinned, and Lateral collateral ligament subluxation was noted.

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## Management and Results

After baseline investigations, single staged Arthroscopic reconstruction of PCL and open reconstruction of the posterolateral corner with the Laparade technique was performed.

Postoperatively Hinged knee brace was applied. Postoperative rehabilitation was started during the first week. The patient was kept non-weight bearing on the left leg for 6 weeks.

PRP has been injected at 2<sup>nd</sup> and 4<sup>th</sup> week and 6<sup>th</sup> week postoperatively. The patient started walking with partial weight-bearing at 7<sup>th</sup> week postoperatively.

After 3 months postoperatively, the patient was allowed to walk without a brace and any other walking aid. The patient had no complaint of joint instability and significant pain relief postoperatively.

During 3rd month postoperatively IKDC score was 45/87 (51.7%). Post-operative rehabilitation was continued for 9 months.



**Figure 1: Showing Postoperative and preoperative X-rays of Left Knee**



**Figure 2: Pre-Operative condition of the left knee**



**Figure 3: Reconstruction of Posterolateral corner ligaments**

## Discussion

Posterolateral knee dislocations present infrequently<sup>5</sup>. Such patients can present with chronic injuries due to pain, instability and deformity. Posterolateral corner injury usually presents with associated Intraarticular ligamentous injury, i.e. ACL, PCL or both<sup>5</sup>.

Chronic PLC injuries and associated PCL injury have to be reconstructed as the torn ligaments become

contracted and fibrotic. Reconstruction of PLC can be done with anatomic, i.e. Laprade technique and non-anatomic, i.e. Modified Larson technique<sup>6</sup>.

Anatomic Reconstruction of PLC with Laprade technique has shown better results than other non-anatomic PLC reconstruction techniques. However, Anatomic reconstruction with the Laprade technique is complex as compared to the non-anatomic Modified Larson technique<sup>6</sup>. In the

Larade technique, Lateral collateral ligament, Popliteus tendon and popliteofibular ligaments are reconstructed. This anatomic reconstruction provides a good restrain for external rotation and varus positioning of the injured knee. Proper Postoperative rehabilitation guidance to the patient and compliance from the patient are important for positive outcomes.

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## Conclusion

In our experience, PLC injury with associated PCL injury showed positive results when managed in a single-stage procedure. Arthroscopic PCL reconstruction followed by Anatomic PLC reconstruction is cost-effective compared to Two-staged procedures and provides optimal functional outcomes postoperatively.

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## Conflicts of Interest

The authors have declared that no competing interests exist.

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