



## Neglected irreducible postero lateral knee dislocation-managed by open reduction

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### Abstract

*Knee dislocations are uncommon injuries. Among them postero lateral knee dislocations<sup>1,3</sup> form a small subset. There is limited literature regarding the management of such neglected cases. We report here, a case of neglected irreducible postero lateral knee dislocation treated with open reduction and stabilized with cross Steinman pins. Post operatively the patient has done well.*

### Introduction

Knee dislocations are rare injuries and a neglected irreducible knee dislocation<sup>1,3</sup> is an even more rare entity in which postero-lateral knee dislocations are common, as medial femoral condyle button holes through the medial capsule and retinaculum. The delay can in turn lead to the need for a complex definitive surgical treatment and possibility of excessive scar tissue and reduced mobility of injured structures.

Treatment protocols for neglected irreducible knee dislocations are not clearly described. We report a 1 month old neglected case of an irreducible posterolateral knee dislocation, for the treatment executed.

### Case Report

A 20-year-old male sustained an injury to the right knee in a road traffic accident. The patient was treated by a local practitioner in the form of oil

bandages. The patient reported 1 month after his injury with the complaints of deformity and inability to bear weight.

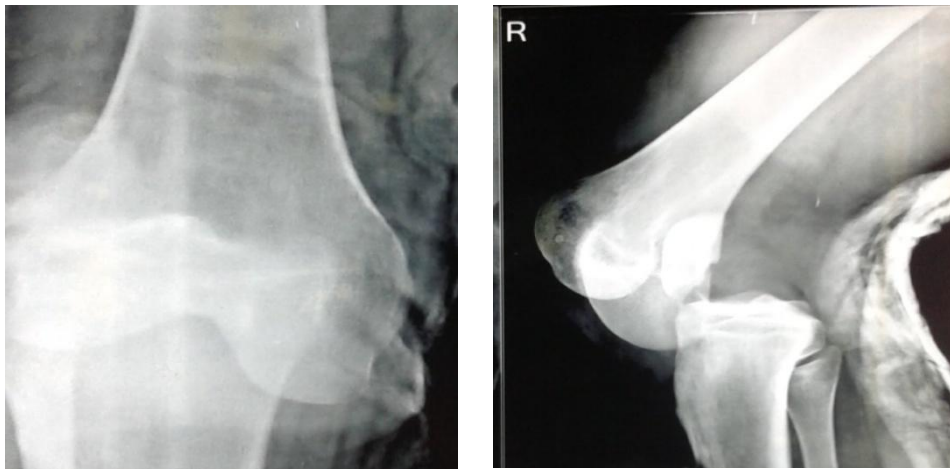
On examination, his knee was locked in 30° of flexion and he could not bear weight on the involved lower limb. In addition to the posterior sag of the involved tibia, there was an associated lateral subluxation of tibia. Typical medial joint line puckering (*dimple sign*) was noticed, which accentuated with every attempt of closed reduction.

Based on these findings, a diagnosis of neglected irreducible postero-lateral knee dislocation was made and confirmed by radiological examination.

There was no distal neurovascular deficit.



**Figure-1:** Clinical picture showing (a) the posterior sag and (b) a typical dimple sign (arrow) of the irreducible posterolateral knee joint over the medial joint line



**Figure-2:** AP and lateral views of the knee joint confirming the postero-lateral knee dislocation

CT angiography and MRI scan evaluation was done. MRI examination of the involved knee joint confirmed the mid-substance tear of MCL, PCL tear and ACL tear. The invagination of the medial capsule and retinaculum by the medial femoral condyle was clearly depicted on MRI.

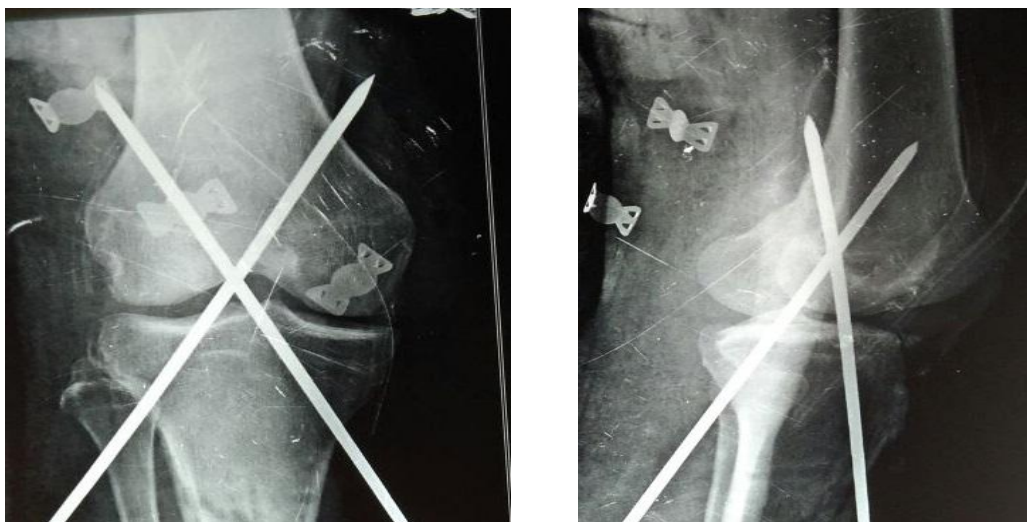
The anterior midline approach was used for open reduction. The medial femoral condyle was lying just underneath the subcutaneous tissue as it had buttonholed through the medial retinaculum and capsule.

Per operative findings – Mid substance tear of medial collateral ligament, torn ACL and PCL with a large amount of fibrous tissue inside the joint. We had to carefully dissect this tissue from the intact medial meniscus.

After removing all the invaginated tissue, the knee joint was reduced and stabilized with cross Steinman pins. The medial collateral ligament was repaired. The wound was washed and closed in layers and the knee was immobilized.



**Figure-3:** Intra-OP clinical pictures



**Figure-4:** Post-OP AP & LAT view X-rays showing completely reduced knee

### Discussion

Knee dislocations are uncommon injuries but can produce some serious neurovascular injuries which might even require amputation. Most of these injuries could be reduced under sedation by closed methods but a few of them are irreducible and require urgent surgical intervention. Posterolateral knee dislocations are usual culprits in such situations.

Literature on these injuries are limited. The mechanism of injury in such irreducible posterolateral knee dislocation is usually

abduction and external rotation forces applied to a flexed knee. In spite of an extensive search of the literature, we were able to find only a few reports of neglected knee dislocations.

Due to rarity of the situation and lack of enough literature, the treatment options for a neglected knee dislocation are confusing. The treatment options ranged from open reduction with ligamentous reconstruction to arthrodesis or arthroplasty.

Richter *et al.*<sup>8</sup> reported a case of chronic posterior dislocation of knee which was managed by

arthrolysis, PCL reconstruction, and a special hinged external fixation device. In their case, a repeat PCL reconstruction with an Achilles tendon allograft was done due to autograft degeneration after initial surgery. At the final follow-up of 1 year, the patient had painless motion of 50° with mild residual posterior subluxation.

Watanabe *et al.*<sup>9</sup> reported a case of chronic knee fracture dislocation combined with popliteal vessel and peroneal nerve injuries treated successfully by the Ilizarov external fixator, tibial plateau osteosynthesis and patellar tendon reconstruction. However, the case being a fracture dislocation, they achieved a stable knee without any cruciate ligament reconstruction. At the final follow-up of 1 year, the patient had painless flexion of 110° with an extensor lag of 15° and a mild residual posterior subluxation.

Objectives of our treatment were to achieve a painless and stable knee joint. After counseling the patient and keeping in mind the demands of his daily activities, open reduction and arthrodesis was planned as patient wanted to return to his work early and did not want to take a chance for repeat procedures. Considering the principles of management in bicruciate ligament injuries, age, functional demands, and relative high incidence of knee stiffness even in simultaneous ACL and PCL reconstruction, we did an open reduction and arthrodesis

Complete wound healing required a period of 4 weeks without any wound complications. It is very well documented in the literature that the probability of medial skin necrosis increases as the time interval between the injury and open reduction increases

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