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Case report

Intra-articular dislocation of patella reduced by closed method – A rare case report

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ABSTRACT

Intra-articular dislocation of the patella is a rare injury. Two types of intra-articular dislocations have been described in literature. In horizontal type, the patella has rotated on its horizontal axis. In the second type, the patella rotates on its vertical axis. These dislocations frequently are difficult to reduce by closed methods, and open reduction generally is required. We describe here a case of horizontal intra-articular dislocation of patella in a young 25-year-old male managed successfully by closed reduction.

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1. Introduction

Incidence of traumatic acute patellar dislocation is very common. Sports and dance are the main activities associated with patellar dislocation.¹ There are various types of patellar dislocations which has been described. Lateral patellar dislocation is most common.² Intra-articular dislocation of the patella is rare.³ We report a rare case of horizontal intra-articular dislocation of patella in a 25-year-old patient after trauma. Dislocation was reduced by closed method under sedation in emergency department.

2. Case report

A 25-year-old male was brought to emergency department after sustaining a fall while playing sport. He fell on his left knee and immediately experienced severe pain in injured knee. He was unable to walk or stand on the left leg.

On examination, tense swelling was noted around left knee. Knee joint was locked in 60–70° flexion. Movements of knee joint were restricted.

Radiographs of left knee joint revealed an intra-articular dislocated patella with horizontal type. The articular surface of patella was facing distally (Fig. 1). No other injuries were

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Fig. 1 – Radiographs showing horizontal intraarticular dislocation of patella: lateral, oblique, and AP views.

Fig. 2 – Postreduction radiographs: lateral, oblique, and AP views.

evident on X-ray. In the emergency room, intravenous sedation was given to the patient. Knee joint was infiltrated with 10 ml normal saline and 5 ml local anesthetic agent so that patella became prominent. While extending the knee, pressure was applied on patella directing lateral to medial. During this maneuver, patella got reduced (Fig. 2). Extensor mechanism was intact and active knee extension was possible after reduction but not full range. Left knee was immobilized by cylinder cast. The patient was advised to walk non-weight bearing.

At 1st follow-up after 15 days, the cast was removed. Extensor mechanism was intact. Strength of quadriceps was increased. Apprehension test was positive. MRI was done. MRI

findings showed partial medial patella-femoral ligament tear. Improvement was satisfactory, so conservative treatment plan was decided. Passive and active exercises of knee were started. Full weight bearing mobilization with long knee brace and knee in full extension was started with crutches.

At 2 months follow-up, range of motion was 0–120° with no visible deformity, pain and the patient could walk without crutches. Apprehension test was negative. Slight thigh muscle wasting was present.

After 5 months, there was no history of any recurrent dislocations and no muscle wasting was present. The patient started his sport activity after 5 months.

3. Discussion

Incidence of traumatic extraarticular acute patellar dislocation is very common. Lateral patellar dislocation is most common.² Medial displacement is uncommon. Classification of patellar dislocation⁴ is described in Table 1.

Intra-articular dislocations of the patella are rare and are of two types, horizontal and vertical. The most common type is a horizontal intra-articular dislocation of the patella. Horizontal dislocation has two types. In one type, the articular surface of the patella is directed toward the tibial articular surface. In the other type, the patella also is dislocated horizontally but its inferior pole is detached from the patellar tendon and the articular surface faces proximally.³

These types of injuries are more common in adolescent or young people mostly due to trauma.⁵ Intra-articular patellar dislocation in older age groups has been reported.^{5–7} These dislocations frequently are difficult to reduce by closed methods, and open reduction generally is required, along with repair of the extensor mechanism.³ Amit Chauhan et al.⁸ reported one case in which they reduced intra-articular patellar dislocation by closed method under local anesthesia. There have been reports of successful closed reduction of intra-articular patellar dislocation under general anesthesia.^{7,9}

In our case, a 25-year-old young male fell on left knee while playing sport. Our patient had horizontal type intra-articular patellar dislocation with articular surface of the patella directed toward the tibial articular surface (Fig. 1). Reduction of patella was achieved by manipulation under sedation in emergency room. There was no injury to quadriceps or patellar tendon. Left knee was immobilized by cylinder cast. After 15 days, MRI was done. MRI findings suggest partial medial patella-femoral ligament tear. Exercises were started after 15 days. After 2 months, range of motion was satisfactory with no visible deformity and the patient could walk without crutches. The patient started his sport activity after 5 months.

In young patients with intra-articular patellar dislocation but without any quadriceps or patellar tendon injury, recovery

Table 1 – Shafat's classification of dislocation of patella.⁴

Intra-articular patellar dislocation		Extra-articular patellar dislocation	
A. Horizontal	B. Vertical	A. Medial dislocation	B. Lateral dislocation
A1. Articular surface facing proximally	B1. Articular surface facing medially		
A2. Articular surface facing distally	B2. Articular surface facing laterally		

is good with conservative treatment. Postoperative exercises play important role in recovery.

Conflicts of interest

The authors have none to declare.

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