

Case Report

Orif of lateral Hoffa's fracture with irreducible patella dislocation and incarcerated patella in lateral Hoffa's fragment: rare injury presentation

M. B. Lingayat, Prashant Rajkumar Bansode*, Aditya Vijaykumar Jadhav

Department of Orthopaedics, Government Medical College Hospital, Aurangabad, Maharashtra, India

Received: 09 July 2023

Revised: 09 August 2023

Accepted: 14 August 2023

***Correspondence:**

Dr. Prashant Rajkumar Bansode,

E-mail: bansodeprashant48@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Majority of lateral Hoffa fracture are associated with knee injury. Presenting a case of 30-years-old gentleman who presented with pain, swelling, deformity in knee of right side after road traffic accident. On local examination there was marked swelling with inability to palpate patella, inability to flex knee. On clinical examination, there was patella dislocation as it was not in place and unable to reduce. Radiological investigation showed a lateral Hoffa's fracture with dislocation of patella and patella being incarcerated in Hoffa fragment. Operative and follow up: Patient was operated by open reduction of patella dislocation and CC screw fixation for lateral Hoffa fracture. On six weeks follow up normal ROM achieved. Patient was surgically treated to relocate locked patella fragment in Hoffa's fragment and fix Hoffa's fragment and achieved good range of motion.

Keywords: Hoffa's fracture, Patella dislocation, Incarcerated patella in Hoffa's fragment

INTRODUCTION

The Hoffa fracture is a rare injury and is characterized by a coronal fracture in one or both of the femoral condyles.¹⁻⁷ Although the initial documentation of this fracture dates back to 1869 by Busch, it was not until 1904 that Albert Hoffa described its fracture pattern. Despite its rarity, Hoffa fractures often remain unnoticed during routine assessments of distal femur fractures. Hoffa's fracture is typically observed as a standalone fracture; however, it is infrequently linked to fracture around knee.⁶ In order to identify related injuries in the knee joint with Hoffa's fracture, it is necessary to conduct a thorough clinical examination and radiographic assessment.

We report a very rare case of lateral Hoffa fracture with the patella dislocation following the motor vehicle accident.

CASE REPORT

A 30-year-old gentleman brought to emergency following motor vehicle accident at our tertiary care institute. Patient had blunt trauma to right knee resulting in swelling and pain. Patient had no injuries to head, chest or other organ systems. On local examination patient had marked swelling with inability to palpate patella. Plain X-rays of knee joint were obtained s/o intraarticular lateral femur condyle fracture with patella dislocation. So, CT of right knee was done which concluded femur Lateral condylar Hoffa fracture with patella trapped between its 2 fragments. Closed reduction of patella was not attempted, as it was not palpable. Distal pulsations were palpable and neurological examination of affected limb was within normal limits. Patient was hemodynamically stable. Hoffa's fractures in current case were of Letenneur type 1 fractures. Patient was operated with anterolateral

approach. Patella was incarcerated between lateral Hoffa fracture and patellar dislocation was reduced. There was no patellar tendon rupture or patella fracture. MPFL was intact. Hoffa's fracture was reduced with pointed forceps and fixed with three 4mm cancellous screws from anterior to posterior direction. Procedure went uneventful. Postoperative radiograph showed good reduction of fracture. Knee mobilization exercises were started on post operative day 1. Continuous passive motion exercises and quadriceps strengthening exercises were started immediately. Patient was on regular monthly follow-up and showed bony union at three months following injury.



Figure 1: Preoperative X-ray.



Figure 2: Preoperative 3D CT imaging.

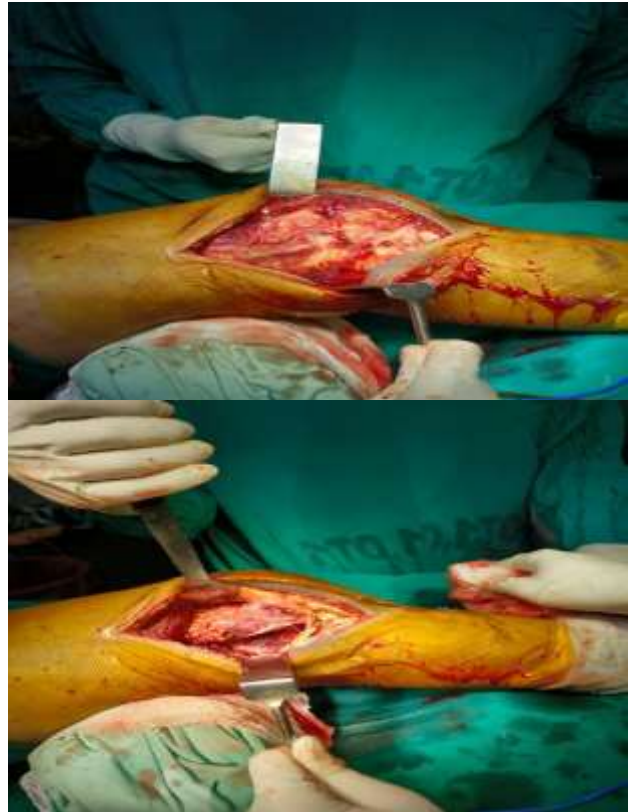


Figure 3: Intraoperative image showing dislocated patella with intact retinaculum.



Figure 4: Post operative x-ray.



Figure 5: Clinical outcome (Follow-up at 3 months).

DISCUSSION

This is very rare type of injury where Hoffa's fracture is associated with vertical dislocation of patella. Very few cases worldwide are reported.¹ Injury mechanism is not clear yet, however some literature suggests that vertical dislocation of patella results from direct blow from medial or lateral side and coronal fracture may be due to element of abduction. Valgus force may have contributed to this type of injury.⁶ Closed reduction of vertical patellar dislocations, even in isolated cases, can be challenging. When the dislocation is accompanied by a fracture, closed reduction becomes nearly impossible, and attempts at reduction may increase the risk of chondral injuries to the patella.¹ Therefore, we have done open reduction without attempting closed reduction to minimize cartilage damage and ensure optimal management of associated bone and soft tissue injuries. In our case, MPFL was not torn surprisingly and retinaculum was also not damaged. So dislocated patella was relocated to its anatomical position and Hoffa's fracture was fixed. We achieved good functional outcome and early return to activity without any recurrent dislocation.

CONCLUSION

It's important for clinicians to be aware of rare injuries like the Hoffa fracture associated with ipsilateral patella dislocation in young men. The limited literature on managing this injury combination underscores the need for increased awareness, and this report offers an effective treatment approach.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Soraganvi PC, Gowda BN, Rajagopalakrishnan R, Gavaskar AS. Irreducible, incarcerated vertical dislocation of patella into a Hoffa fracture. Indian J Orthop. 2014;48:525-8.
2. Vaishya R, Singh AP, Dar IT, Singh AP, Mittal V. Hoffa fracture with ipsilateral patellar dislocation resulting from household trauma. Can J Surg. 2009;52(1):E3.
3. Shetty GM, Wang JH, Kim SK, Park JH, Park JW, Kim JG et al. Incarcerated patellar tendon in Hoffa fracture: an unusual cause of irreducible knee dislocation. Knee Surg Sports Traumatol Arthroscopy. 2008;16:378-81.
4. ElMaraghy AW, Berry GK, Kreder HJ. Irreducible lateral patellar dislocation with vertical axis rotation: case report and review of the literature. J Trauma Acute Care Surg. 2002;53(1):131-2.
5. Chauhan A. Irreducible, incarcerated vertical dislocation of the patella into a Hoffa fracture. Indian J Orthop. 2015;49(3):369.
6. Pathak S, Salunke A, Karn S, Ratna HV, Thivari PS, Sharma S et al. Hoffa's fracture with associated injuries around the knee joint: an approach to a rare injury. Cureus. 2020;12(4).
7. Kumar R, Malhotra R. The Hoffa fracture: three case reports. J Orthop Surg. 2001;9(2):47-51.

Cite this article as: Lingayat MB, Bansode PR, Jadhav AV. Orif of lateral Hoffa's fracture with irreducible patella dislocation and incarcerated patella in lateral Hoffa's fragment: rare injury presentation. Int J Res Orthop 2023;9:1086-8.