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Case Report

Gap non-union of fracture patella: Case report

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ABSTRACT

Introduction: Fractures of the patella contribute almost 1% of all skeletal injuries. We report a case of an 8 cms gap non-union patella fracture in a patient and single staged surgery with functional outcome.
Case Report: A 45 year female patient came with complaints of instability and defect in his right knee since 3 years. On examination we found that gap nonunion of fracture patella. Patellar fracture was approached by anterior approach. V-Y quadriceps-plasty was done to mobilize the proximal fragment. Fracture was fixed with tension band wiring fixation with k- wires. Quadriceps and retinaculum were repaired. Postoperatively physiotherapy was started and follow up of patient was done at 6 weeks, 3 months and 6 months. Improvement of knee range of movement was noticed in follow-up period.
Conclusion: V-Yquadriceps-plasty with TBW and encirclage gives good functional outcome in gap non-union patella fractures.

1. Introduction

Fractures of the patella contribute almost 1% of all skeletal injuries.[1] Management of gap non-union patella fractures are challenging in orthopedics practice. Incidence of these cases ranges between 2.7 and 12.5%.[2,3] Delayed presentation of displaced transverse fracture of patella is commonly seen. Soft tissues contractures at quadriceps, retinaculum, and internal ligaments of the knee joint are commonly associated. Nonunion patella may be well tolerated by low functional demand patients but requires surgical management in active patients.[4–6] The goal is to bring the fracture fragments together and restore the extensor mechanism of knee joint. Treatment options for non union patella fracture include ORIF (Open reduction and internal fixation) with tension band wiring (TBW), cancellous screws, cerclage with or without bone grafting and partial patellectomy.[5–7] We have used one staged V-Y quadricepsplasty and ORIF with TBW in our case and achieved good results.

2. Case Report

A 45 year female patient came to the outpatient department with complaints of instability and defect in his right knee since 3 years. Patient gave past history of trauma to knee joint due to self fall at her house. Patient had not taken treatment for 3 years due to ignorance. On examination, emptiness was noticed in patellar region. A swelling was felt at anterior aspect of right distal third thigh, which was the superior part of the patella on palpation. The lower pole of patella was palpable just above the right tibial tuberosity. There was significant wasting of the quadriceps muscle. Her knee range of movement was from 40° extensor lag to 100° flexion actively. Passive movements of the knee were not affected. She was unable to do active straight leg raise (SLR) test. On palpation we noticed 8 cms gap in between patella fragments, (Figure 1). Informed written consent was taken

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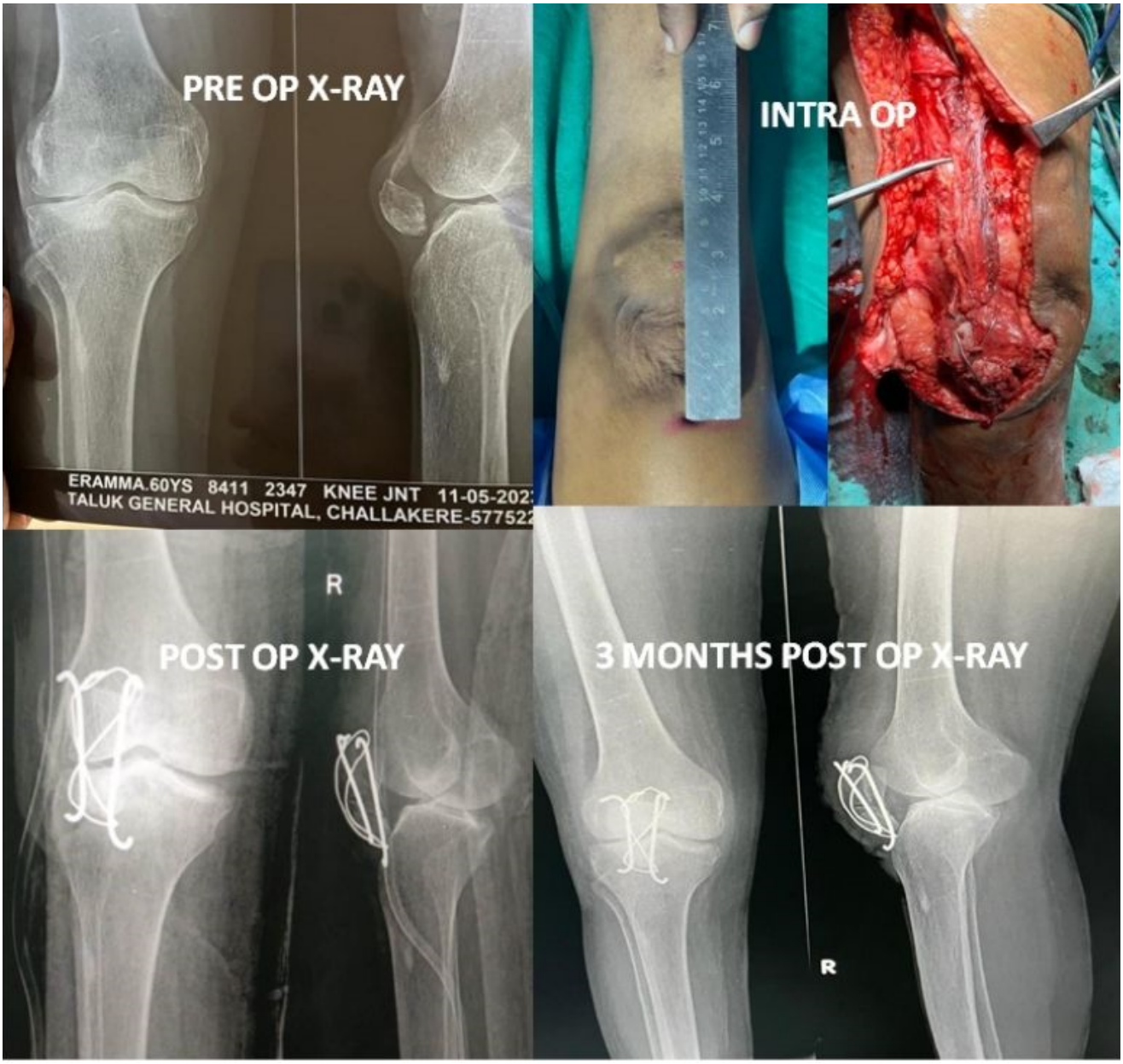

Figure 1: Showing patient preoperative, intra-operative and post-operative x-rays

from patient regarding the procedure and prognosis.

Patellar fracture was approached by anterior approach. Long incision was made at the distal femur for quadriceps plasty. Fracture surfaces were made freshened with curette. V-Y quadricepsplasty was done to mobilize the proximal fragment. Contracted structures were released around knee joint. Fractured surfaces are reduced with sustained traction and fixed with tension band wiring fixation with k- wires. Quadriceps and retinaculum are repaired meticulously with prolene sutures. We were confirmed the movements of knee intraoperatively.

Patient was made to do static quadriceps strengthening exercises and active straight leg rising. After suture removal continuous passive motion for his knee was started. After 6 weeks post operative follow up patient had 5 to 90 degree passive knee range of movement. At 3 months and 6 months follow up of patient had knee passive range of movement of 0 to 110 degrees. (Figure 1)

3. Discussion

Management options for nonunion patella fractures depend on the patient's functional demands.[8–10] Active young

patients depend on the patella's function as a lever for knee extension to supplement the force of the quadriceps and in these patients need surgical intervention.[6] In our case, patient presents with gap non union of fracture because of patient ignorance.

Klassen et al (1997)[2] reported 20 cases of nonunion fracture patella treated with single staged procedure and they found that good results (0 to 109 degrees of flexion) following surgery. Lachiewicz PF et al (2008)[9] noticed good results (5 to 80 degrees of flexion) following single stage surgery. We opted for one staged procedure i.e. proximal fragment is mobilized and fixed with the lower fragment using V-Y plasty and ORIF with TBW and achieved good results.

4. Conclusion

We conclude that quadricepsplasty followed by tension band wiring is a good surgical technique in the treatment of non union patella with quadriceps contracture.

5. Source of Funding

None.

6. Conflict of Interest

None.

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