

Treatment of Habitual Patellar Dislocation in a Skeletally Mature Adult by Three In One Procedure

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Abstract: Introduction-Habitual dislocation of patella (HDP) is a condition where the patella spontaneously dislocates on flexion and relocates on extension of the knee. It is a rare condition and is more common in paediatric age-group than in adults. Many surgical procedures using proximal realignment and distal realignment have been reported in children with satisfactory results. However, HDP in adults with late presentation is rare and treatment plan is yet to be established. Materials and method- A case study of a 28yrs female presenting with HDP for 3 yrs with h/o fall and patellar dislocation 12yrs prior. She was managed with a combination of procedures-Proximal realignment, distal realignment, medial plication, lateral release. Result- Patient had extensor lag of 15 degrees initially but improved with vigorous quadriceps exercise. At 1yr follow up, her kujala knee score is 89 with ROM of 0-90degrees and with no evidence of patellar maltracking or instability. Conclusion- Successful result requires a combination of procedures depending on clinical and intraoperative findings on an individual basis.

Keywords: Habitual dislocation of patella, Proximal realignment, distal realignment, medial plication, lateral release

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I. Introduction

The origin of patellar instability is usually post traumatic. Dislocation results in irreversible injuries due to lateral translation of the patella. Habitual dislocation of the patella is a rare condition among adult, where the patella dislocates with every flexion and relocates to the trochlear groove with every extension without pain and swelling unlike in recurrent dislocation. Various surgical techniques have been reported for the treatment in pediatric population. These techniques are all designed to relocate the patella and regain alignment of the extensor mechanism.^{1,2,3,4} The etiology of patellar instability is usually multi-factorial. Determination of the factor permits an effective elective treatment plan and it has been known that satisfactory or significant treatment results can be obtained with combined procedures not with a single procedure.⁵

II. Material And Method

We report a case of traumatic habitual dislocation of patella in a 28 years old female patient treated with Proximal realignment, distal realignment, medial plication, lateral release.

A 28-year-old woman presented with traumatic habitual dislocation of right patella for 3 years. She had a history of fall 12 years back which was initially treated by local quack and then by doctor who immobilized her knee for 4 weeks. The patient did not have any problem in the next year. Then she developed recurrent dislocation with 3 to 5 episodes each year. For the last 3 years the dislocation has become habitual.

Physical examination did not reveal general joint laxity or malalignment of the lower extremity. Although the patella was in the femoral trochlear groove in extension, it dislocated laterally beyond 30 degrees of knee flexion. The passive lateral patellar tilt test was positive. Radiological examination revealed evidence of lateral patellar dislocation and Q angle was 20 degrees.



Operative Procedure:

With patient in supine position under epidural anesthesia, an anterior midline knee incision was given. The lateral retinaculum was thickened while the medial retinaculum was thinned. The lateral parapatellar tether is released by dividing the fibrous adhesions, which extended along the lateral intermuscular septum. The lateral patellar retinaculum and the synovium were divided and vastus lateralis was detached from the quadriceps tendon, leaving a rim of tendon for suturing[fig 2(a)].

The quadriceps tendon is split longitudinally just adjacent to the vastus medialis. The edges are pulled over the middle of the patella and secured to the distal part of patella, thus bringing the vastus medialis distally and to the midline[fig 2(b)]. The knee is flexed and patellar dislocation is evaluated. Due to unsatisfactory reduction, the lateral half of the patellar tendon is detached and brought medially from below the medial half and reattached to the medial aspect of the tibia[fig 2(c)]. Followed by medial plication.

A long-leg hinged knee brace was applied with the knee in 20° of flexion and partial weight bearing with crutches for four weeks was advised, during which the patient was encouraged to do vigorous static quadriceps strengthening exercises and graduated ROM exercises of her right knee. Full weight bearing was started after four weeks. Initially patient had extensor lag of 15 degrees as she was immobilized in flexion. But after vigorous physiotherapy, patient improved without any extensor lag. At final followup one year postoperatively, the patient was pain-free.



fig 2(a)

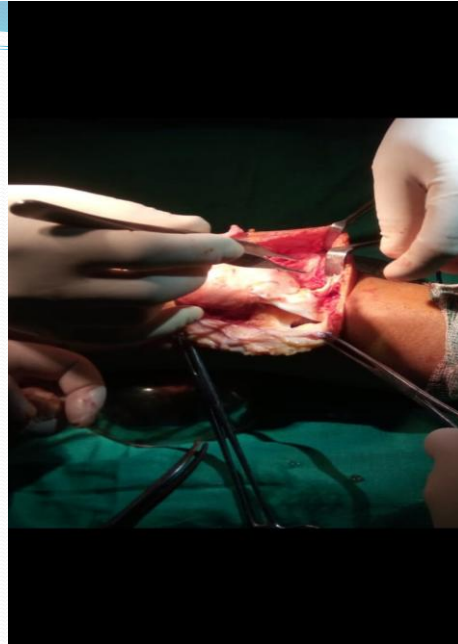


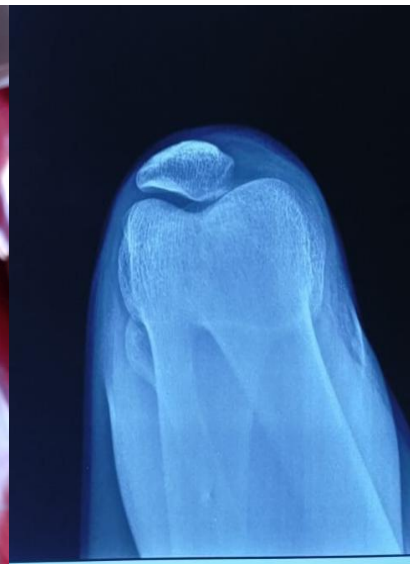
fig 2(b)



fig 2(c)

III. Results

There was no evidence of patellar maltracking or instability on detailed physical examination. Radiographs showed well reduced patella in both lateral, anteroposterior view and skyline view. The patient's kujala knee society score 89 and range of motion was 0° to 90° on the right side.



IV. Discussion

Habitual or recurrent dislocation of the patella is common in children unlike adults. Predisposing factors include ligamentous laxity, contracture of the lateral patellar soft tissues, patella alta, quadriceps contractures, hypoplasia of the lateral femoral condyle and genu valgum.⁶ The soft tissue and bony structures mentioned above give an active and passive stability, which allow the patella to be located within the trochlea during knee movements.^{7,8} Permanent patellar dislocation, either congenital or acquired, is diagnosed at an early age in childhood and numerous surgical techniques have been introduced for its treatment. This is not the same for adult patellar dislocation, where no specific treatment protocols are established. However, it has been known that combined procedures, not one single procedure, can be performed to achieve relatively satisfying treatment results.

When patellar realignment is selected for habitual dislocation of the patella with quadriceps contracture in adults, the gold standard of management has not yet been established. Successful results require combination of these procedures, depending on clinical and intraoperative findings on an individual basis.⁹ In our case, as a result of long term dislocation, the patient had lateral soft tissue contractures, hence we decided to proceed with lateral release as initial procedure. Medial vector augmentation and patellar tendon alignment procedures should be included depending on the degree of quadriceps dysfunction.¹⁰ Many times in neglected dislocations, even after lateral release, the patella may tend to dislocate laterally once knee is flexed. To prevent this, always lateral release is combined with medial augmentation.

V. Conclusion

Combination of procedures addressing the patho-anatomy, which is unique for every individual and careful pre-operative evaluation would give a better treatment algorithm.

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