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Recurrent Dislocation Patella Comparative Study of Surgical Procedures

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ABSTRACT
The aim of the treatment in Recurrent Dislocation Patella is to achieve a stable and painless patellofemoral joint with full range of knee movement. Various surgical procedures have been used to treat this condition, the present study compares the merits and demerits of the commonly done operations.
Objectives: *To evaluate the efficacy of the various surgical procedure used in Recurrent Dislocation Patella.*
Materials and Methods: *This prospective study was conducted in the Department of Orthopaedics, Government Medical College Trivandrum,57 knees in 48 patients were included in this study, the objective and functional results in these patients were assessed.*
Result: *Of the 57 knees included in the study 63.15% had excellent to good results, 28,06% had fair to poor results and in 8.77% it was a failure. .*
Conclusion: *Proper selection of surgical methods in patients based on the underlying predisposing factors will give better results.*
Keywords: *Recurrent Dislocation Patella surgical technique.*

Background

Recurrent dislocation of patella is a common condition met with in Orthopaedic practice. This is one of the most casually managed conditions despite the fact that the patellofemoral joint is part of the knee joint which is a major weight bearing joint in the human body.

The spectrum of Patellofemoral malalignment varies from mere occasional subluxation to frequent dislocation of the patella, from the femoral trochlea. The various surgical procedures recommended for this condition aims to realign the patella in the femoral trochlea so that a smooth patella moves within the range normally permitted by the restored muscles and ligaments.

Materials and Methods

This prospective study was conducted in the Department of Orthopaedics, Govt. Medical College, Thiruvananthapuram. A total of 57 knees in 48 patients with recurrent dislocation of patella were treated surgically. Age group was from 9-35 yrs. There were 16 males and 32 females. 33 patients (67.66%) had onset of symptoms between 11-20yrs, with the mean age of 15yrs. The left side was involved in 22 patients (45.88%) and right side in 12 patients (25%). 14 patients (29.66%) had bilateral involvement. Of the total of 62 symptomatic knees, 5 patients with bilateral involvement underwent operation on one side only. Thus a total of 57 patients were operated.

The patients underwent proper clinical and radiological evaluation prior to surgical procedure. During the clinical examination the presence of pre disposing factors like genu valgum, patella alta, hypoplastic lateral femoral condyle, increased Q angle, and generalized joint laxity were looked into. The tenderness in the patellofemoral joint was also noted.

Radiological evaluation included routine antero posterior view with quadriceps relaxed, lateral view in 30^0 flexion and skyline view in 30^0 flexion. The Insall's ratio, the sulcus angle, and the congruence angle were measured in the radiographs.

Depending on the preoperative evaluation and the intra operative finding, the patients underwent open lateral release alone in 33 patients (57.89%), Campbell Goldthwait procedure in 12 patients (21.05%). Hauser's procedure in 7 patients (12.88%) and proximal realignment in 5 patients (8.77%). The last three procedures were always combined with lateral release.

Results

The results were evaluated for prioperative complications, recurrence of dislocation of patella and persistence of knee pain.

Minimum period of follow up was for 6 months. Of the 33 patients in the lateral release group 3 had recurrence of dislocation. Among these, 2 were bilateral. They were asked to undergo proximal realignment, 2 underwent the reoperation, one responded the second surgery, while in the other the symptoms persisted. The 3rd patient who refused surgery was lost for follow up. Post operative knee pain with knee flexion persisted in 10 patients to a lesser degree than in the preoperative phase. All patients had full range of movement in the knee.

In the Campbell Goldthwait group one patient had redislocation, 6 patients had knee pain on flexion and one patient had extension lag of $30^{0.}$ Of the patients who underwent Hauser's procedure, none had recurrences. One patient had 30^0 loss of knee flexion and 2 patients had persistent pain on flexion of knee. In the proximal realignment group, one patient who developed wound infection ended up with stiffness of the knee. Dislocations recurred in one patient, 2 patients had pain in the knee on flexion.

At each review patients were assessed clinically and scoring was done based on the scoring system adopted from Lan Macnab. In this, each patient was given an objective and subjective result. These two were computed to get a final rating wh-ich could be excellent, good, fair, poor and failure. The final rating of all procedures considered together is as per table (1). Excellent to good 63.15%, Fair to poor 28.06% failure 8.77%,. In the lateral release group it was as per table 2- excellent to good 53.6% fair to poor 30.76% failure in 15.3%. Table (3) shows rating of Campbell Goldthwait procedure. Excellent to good 66% fair to poor was 24.9% and 8.3% had failures. In the Hauser's procedure 57.1% had excellent to good results 42.83% had fair to poor results and no failure as per table 4. The results of the proximal realignment group are given in table 5. Excellent to good 66% fair to poor 20% failure in 20%.

Table 1 Final rating of all procedures taken together.

Grade	No	%
Excellent	24	42.1
Good	12	21.05
Fair	8	14.03
Poor	8	14.03
Failure	5	8.77

Table 2. Rating of lateral release

Grade	No	%
Excellent	15	46
Good	3	7.6
Fair	10	30.76
Poor	0	0
Failure	5	15.3

Table 3. Rating of Campbell Goldthwait

Grade	No	%
Excellent	3	25
Good	5	41
Fair	2	16.6
Poor	1	8.3
Failure	1	8.3

Table 4. Rating of Hauser's procedure

Grade	No	%
Excellent	3	42.85
Good	1	14.25
Fair	1	14.25
Poor	2	28.58
Failure	0	0

Table 5. Rating of Proximal Realignment

Grade	No	%
Excellent	1	20
Good	2	40
Fair	0	0
Poor	1	20
Failure	1	20

Discussion

In the series of 57 knees operated, the male, to female ratio was 16:32 (1:2). The age group was 9-35yrs, maximum no. of patient 21 (43.75%) was in the 11-20yrs. 14 patients (29.16%) had bilateral involvement which were comparable to other studies. Mean Q angle in the affected females was 19^0 No patients had an Insall's is ratio of one. In 24 patients (38.72%) it was 0.6. Ten patients (28.83%) had joint a laxity. Seven patients (8.23%) gave a positive family history. Genu valgum was present in 14 patients. In the study 65% patient who underwent Campbell Goldthwait procedure had excellent to good results.

Conclusion

Recurrent dislocation patella is a common condition met with in orthopedic practice with a high incidence in adolescent females. The initial episode is neglected which leads to poor healing of soft tissue constraints and recurrence of dislocation. The various surgical procedures which were under taken in this study has its own merits and demerits. Lateral release as a single procedure in patients with joint laxity has a high failure rate. So judicious selection, of the procedure is mandatory to get a better long term final results.

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