Original Article

Journal of Orthopaedic Education
Volume 3 Number 1, January - June 2017
DOI: http://dx.doi.org/10.21088/joe.2454.7956.3117.7

Results of Arthroscopic Lateral Retinacular Release: A Retrospective Study

Santosh Kumar K.*, Siddarth Mahesh**

Author Affiliation: *Assistant Professor, Department of Orthopedics, Kempegowda Institute of Medical Sciences, Bangalore, Karnataka 560070. **Associate Professor, Department of Orthopedics, Sapthagiri Institute of Medical Sciences, Bangalore, Karnataka 560010.

Reprint Request: Santosh Kumar K., Assistant Professor, Department of Orthopedics, Kempegowda Institute of Medical Sciences, Bangalore, Karnataka 560070.
E-mail: ramspsm@gmail.com

Received: 03 February, 2017, **Accepted on:** 13 February 2017

Abstract

Introduction: Arthroscopic release of the lateral retinaculum of the knee is a common procedure that is indicated for patients who have patellofemoral pain, a tight lateral retinaculum, and lateral patellar tilt and who have failed conservative treatment. *Methodology:* Arthroscopic lateral retinacular release was performed on 105 knees in 79 patients. Radiographic examination of the knee should include anteroposterior, axial view (sunrise view in 30 to 45 degrees of knee flexion), and a 30-degree lateral view. The lateral view is particularly useful, as it demonstrates the shape of the trochlear groove, the patellar height, and the relationship of the patella to the trochlear groove. *Results:* Majority of the patients in our study were females accounting to 43 of the total 79 cases. Majority of the patients in our study had excellent to good results with good functional outcome. 2 patients had poor results with no improvement in pain with respect to grading of functional knee score. *Conclusion:* Patients with grade I and grade II chondromalacia have excellent results with arthroscopic lateral retinacular release.

Keywords: Arthroscopic Release; Lateral Retinaculum; Knee.

Introduction

Chondromalacia has been used to describe patellofemoral pain. The term refers to lesions of the articular cartilage. Patellofemoral pain is one of the more common complaints of young, active adolescents and adults. It can be a challenge for the orthopaedic surgeon to delineate the etiology of a patient's anterior knee pain and an even greater challenge to successfully treat these complaints [1].

Arthroscopic release of the lateral retinaculum of the knee is a common procedure that is indicated for patients who have patellofemoral pain, a tight lateral retinaculum, and lateral patellar tilt and who have failed conservative treatment.

Patients with patellofemoral pain, a tight lateral retinaculum, and lateral patellar tilt should first be treated with a rehabilitation program. Symptoms will improve substantially in many patients with rigorous therapy to strengthen hip external rotators, improve proprioception, improve strength in a balanced manner, and stretch the quadriceps muscles. Taping or bracing the patella and the use of orthotic devices may also provide relief. Only after failure of non-operative treatment should lateral retinacular release is considered [2].

Arthroscopic lateral retinacular release has good results in early cases of patellar maltracking as compared to open release.

Patellofemoral pain can be attributed to trauma, instability, overuse, or a tight lateral retinaculum causing excessive pressure between the patella and the femur. Symptoms often include insidious onset

of anterior knee pain, worse with stair climbing or prolonged sitting.

The nonsurgical interventions such as physical therapy, bracing, icing, painful medications, and activity modification, were aimed at decreasing the strain on the medial retinaculum [3,4].

Methodology

Arthroscopic lateral retinacular release was performed on 105 knees in79 patients.

Inclusion Criterion

1. Patients in the age groupof 18-45years.
2. Patients with evidence of chondromalacia patellae.
3. All cases of chondromalacia patellae not responding to conservative treatment.
4. Radiographic evidence of lateral tilting of patellae with clinical symptoms.

Exclusion Criterion

1. Degenerative joint disease.
2. Associated ligament injuries.

Preoperative Planning

Radiographic examination of the knee should include anteroposterior, axial view (sunrise view in 30 to 45 degrees of knee flexion), and a 30-degree lateral view. The lateral view is particularly useful, as it demonstrates the shape of the trochlear groove, the patellar height, and the relationship of the patella to the trochlear groove. The fourth view is a notch view, which may demonstrate a subtle OCD lesion. The notch view can be replaced by a posteroanterior flexed 45-degree view if osteoarthritis is suspected.

The best radiographic modality to assess patellar tilt is a CT scan. On an axial cut of the knee, a line drawn parallel to the posterior femoral condyles that converges laterally with a line drawn on the lateral patellar facet indicates excessive lateral tilt of the patella and suggests an excessively tight lateral retinaculum. An MRI can also be useful in determining the presence or absence of ligamentous injury and can also help identify articular cartilage pathology.

Results

The majority of the patients were from the age group of 35-45 years which accounts for 43.4% of patients in our study.

Majority of the patients in our study were females accounting to 43 of the total 79 cases.

Majority of the patients in our study had excellent to good results with good functional outcome. 2 patients had poor results with no improvement in pain with respect to grading of functional knee score.

The results in our series was as follows considering the following factors relief of pre-operative pain, instability, complete return to pre-operative activity.

Excellent results was noted in 33 patients who had no pain as compared to pre-operative pain and were able to get back to their normal activity, including sports . A minimum follow up of 6months was done . Good results were noted in 27 patients in our study. Fair results were noted in 17 patients who had to undergo a longer rehabilitation in the form of isometric quadriceps strengthening exercises for a longer period of time. Poor results was noted in 2 patients who had no improvement in the pre-operative pain and showed detoration in the pain component and difficulty in their routine activities like climbing stairs.

Table 1: Age distribution

Age (Years)	Frequency	Percent (%)
45-35	35	43.4
34-25	23	37.9
24-18	21	21.3
Total	79	100

Table 2: Gender distribution

Gender	Frequency	Percent (%)
Female	43	54
Male	36	46
Total	79	**100**

Table 3: Grading of knee functional score

Results	Frequency	Percent
Excellent	33	62.7
Good	27	27.7
Fair	17	8.7
Poor	2	1.8
Total	79	100.0

Table 4: Severity of chondromalacia

Grade I	Grade II	Grade III	Grade IV
34	26	12	7
47%	29%	15%	9%

Discussion

We have reviewed the literature to establish the role of lateral retinacular release in the management of disorders of the extensor apparatus of the knee. The scientific evidence for intervention is explored and reports on outcome are discussed.

Division of the lateral patellar retinaculum (lateral release) as an open or arthroscopic procedure is commonly performed for disorders of the extensor mechanism of the knee [5]. The concept behind lateral release is that imbalance in the extensor mechanism, because of over-constraint by the lateral retinaculum, is the cause of patellofemoral disorders, particularly pain in the anterior knee [6], patellofemoral instability [7] and chondromalacia of the articular cartilage of the patella [8]. We have examined evidence from published studies on the kinematics of the patellofemoral joint as to how this is affected by lateral release. The clinical effectiveness of lateral release is reviewed and we suggest how it may be applied most effectively in the management of disorders of the patellofemoral joint.

A lateral release tended to improve patients with grade-II to grade-IV [9] chondromalacia, although this did not reach statistical significance.

In summary, anterior knee pain is almost certainly a multifactorial condition. In those patients with increased lateral facet pressure as demonstrated by the Sage sign and with patellar tilting as seen by CT a lateral release including the deep transverse component of the tendon of vastuslateralis may be effective in correcting lateral patellar tilt. The results are less satisfactory in those patients with established grade-III or grade-IV changes in the articular cartilage and in whom patellar instability rather than lateral retinacular tightness is the principal abnormality. The merits of arthroscopic lateral retinacular release include decreased hospital stay, minimal scar,shorter rehabilitation time. Majority of the patients in our study had excellent to good results with good functional outcome. 2 patients had poor results with no improvement in pain with respect to grading of functional knee score.

89% of the patients in our study had excellent to good results which is comparable with other series 81% reported by Turk and Benjamin in their series, 76% reported by Davis and Clarke in their series.

Conclusion

- Post operative rehabilitation with isometric quadriceps strengthening plays a important role in early recovery and to get back to normal activity.
- The time duration for complete recovery is a graded one though with gradual improvement in pain and activity status with a maximum benefit noted at the end of 6-8months post surgery.

References

1. Fulkerson JP, Shea KP. Disorders of patellofemoral alignment. J Bone Joint Surg [Am] 1990; 72-A:1424–9.
2. Ficat P, Hungerford DS. Disorders of the patellofemoral joint. Baltimore: Williams & Wilkins,1977.
3. Larson RL, Cabaud HE, Slocum DB, et al. The patelar compression syndrome: surgical treatment by lateral retinacular release. ClinOrthop 1978; 34: 158–67.
4. Micheli LJ, Stanitski CL. Lateral patellar retinacular release. Am J Sports Med 1981; 9:330–6.
5. Bigos SJ, McBride GG. The isolated lateral retinacular release in the treatment of patellofemoral disorders. ClinOrthop 1984; 186:75–80.
6. Krompinger WJ, Fulkerson JP. Lateral retinacular release for intractable lateral retinacular pain. ClinOrthop 1983; 179:191–3.
7. Bray RC, Roth JH, Jacobsen RP. Arthroscopic lateral

release for anterior knee pain: study comparing patients who are claiming worker's compensation with those who are not. Arthroscopy 1987; 3:237–47.

8. Harwin SF, Stern RE. Subcutaneous lateral retinacular release for chondromalacia patellae: a preliminary report. ClinOrthop 1981; 156:207–10.

9. Marumoto JM, Jordan C, Akins R. A biomechanical comparison of lateral retinacular releases. Am J Sports Med 1995; 23:151–5.

STATEMENT ABOUT OWNERSHIP AND OTHER PARTICULARS

"Journal of Orthopaedic Education" (See Rule 8)

1. Place of Publication	:	Delhi
2. Periodicity of Publication	:	Quarterly
3. Printer's Name	:	**Asharfi Lal**
Nationality	:	Indian
Address	:	3/258-259, Trilok Puri, Delhi-91
4. Publisher's Name	:	**Asharfi Lal**
Nationality	:	Indian
Address	:	3/258-259, Trilok Puri, Delhi-91
5. Editor's Name	:	**Asharfi Lal**
Nationality	:	Indian
Address	:	3/258-259, Trilok Puri, Delhi-91
6. Name & Address of Individuals who own the newspaper and particulars of shareholders holding more than one per cent of the total capital	:	**Asharfi Lal** 3/258-259, Trilok Puri, Delhi-91

I Asharfi Lal, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/-

(Asharfi Lal)