Isolated Arthroscopic Lateral Patella Retinaculum Release for Anterior Knee Pain – Is it worth it?

Sultan N Qasim, Kimberly Lammin and Phillip Edge

Abstract
Introduction: ‘Anterior Knee Pain’ is a common presentation in all age groups and aetiology is not fully understood. Arthroscopic Lateral Patellar Retinaculum Release has been a commonly performed procedure to treat anterior knee pain with variable results.

Methods: We performed a retrospective review of all the patients who underwent isolated arthroscopic lateral patellar retinaculum release under a single surgeon between July 2007 and July 2010. Exclusion criteria included significant patellar instability, severe mal alignment, and additional procedures including meniscal repair/excision or medial patella plication. Primary outcome measure was improvement in post procedure Oxford Knee Score. 40 cases in 36 patients were included. The mean age was 58.7 years with male to female ratio of 1:1.5. The mean follow up duration was 20.43 months +/- 10.64.

Results: There was significant improvement in OKS, in particular ability to kneel and climb stairs, associated with a high degree of arthritis in patellofemoral articulation and post-operative physiotherapy. However, OKS components lost this significance with tibiofemoral articulation wear of Outerbridge grade 3 or higher. The procedure had a high mean satisfaction score of 8.2 (range 4 to 10) and 32 of 36 patients would have the procedure again if need be.

Conclusions: Isolated Patella Retinaculum release can be effective for anterior knee pain without significant instability or mal-alignment. It particularly improves patients’ ability to kneel and climb stairs giving a high satisfaction score - grade of wear of patellofemoral cartilage being most important factor. Post-operative physiotherapy further augments the good results. However it has no significant value in the presence of advanced tibiofemoral degeneration irrespective of state of patellofemoral articulation.

Keywords: Anterior Knee Pain, Arthroscopic, Patella, Lateral Release

Abbreviations: OKS - Oxford Knee Score

Introduction
Anterior knee pain or patellofemoral pain is a common clinical presentation especially in females. It is a challenging clinical problem. The specific cause can be difficult to diagnose as the aetiology remains poorly understood and there are various pathologic entities that can result in pain in the anterior aspect of knee.

Multiple surgical options have been used to treat the condition. Lateral retinacular release is one of these options and has been used to treat anterior knee pain with variable results1-3. The aim of this study was to assess isolated patella lateral retinaculum release as a treatment for anterior knee pain.

Materials and Methods
We performed a retrospective review of all the patients who underwent isolated arthroscopic lateral patella retinacular release under a single surgeon between July 2007 and July 2010. Exclusion criteria included significant patellar instability and severe mal-alignment on both radiological and clinical assessment and additional procedures including cartilage debridement, meniscal tear repair/excision or patella stabilization.

Data was collected from case notes (demographics, pre-operative and intra-operative findings and any post-operative complications), archived radiographs and postal questionnaires including pre and post procedure Oxford Knee Score (OKS), as well as patient satisfaction. Patient satisfaction questions included a grading of satisfaction of 1(completely dissatisfied) - 10 (completely satisfied) and whether patient would reconsider the procedure if given the choice again.

Independent factors assessed were age, sex, tight lateral retinaculum, osteoarthritic x-ray changes of all compartments, intraoperative findings of grade of arthritis and lateral subluxation and postoperative physiotherapy. The primary outcome assessed was patient reported outcome measures, including the improvement in post procedure OKS and patient satisfaction scores. SPSS Version 20 was used for analysis.

Preoperative and Postoperative OKS – total and components - were compared using Wilcoxon Signed Rank Test. The Mann Whitney U test was used for nominal data and Kruskal-Wallis
test was used for continuous data for total OKS. Individual OKS components compared were ability to kneel and ability to climb stairs - more representative of patellofemoral joint.

**Results**

59 patients were identified with male to female ratio of 1:1.5. The mean age was 58.7 (range 25 to 77). 40 patients (67%) returned completed forms. Four patients had further surgery; three total knee replacement and one subsequent arthroscopic procedure for meniscal tears. These patients were excluded from the study. Four patients had bilateral procedures. Therefore after the exclusions for further surgery and those who failed to return completed forms 36 patients were included, on whom 40 procedures had been performed. Changes of osteoarthritis - graded according to Kellgren and Lawrence system - on the medial and lateral facets of the patella were noted on preoperative Merchant views (Table 1) and the tibiofemoral compartment as well.

**Table 1 – Pre-Operative Radiographic grades of Patellofemoral change**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Medial Facet</th>
<th>Lateral Facet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
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<tr>
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<td>40</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

All patients had undergone standardized preoperative physiotherapy regimen with no significant benefit. Two had, had intra-articular hyaluronic acid injection with no benefit.

All procedures were performed by a single surgeon (PE) and intraoperative findings of cartilage Outerbridge grade were noted in all compartments. Closed lateral retinacular release was performed with Smiley’s knife from just below lower end up to the upper border of patella.

Mean follow up duration was 20.43 months +/- 10.64. Patients were divided into three groups of follow up durations. 6-12 months had 6, 12-18months had 18 and >18months had 16 cases. The best results were in 12-18 month follow up but no statistically significant difference was found between different groups. There was no significant difference in age and gender distribution amongst different durations of follow up. Also there was no significant difference in age, gender and different durations of follow up between responders and non-responders of the questionnaire. There were no reported postoperative complications.

24(60%) underwent post-operative physiotherapy. The mean OKS improved from 23.05 (range11-40) to 35.30 (range14-48) [p value <0.0001]. Individual components of OKS, particularly ability to climb stairs and ability to kneel, also showed statistically significant improvements (Figure 1, Figure 2).

**Discussion**

Anterior Knee pain or patella pain syndrome is a very common clinical problem faced by orthopaedic surgeons. However the aetiology remains poorly understood. Mori et al identified evidence of degenerative neuropathy in 29 out of 35
The grade of wear of patellofemoral cartilage is the most significant factor in determining this, with post-operative physiotherapy further augmenting the good results.

## Competing Interests
None declared

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## References