Return to Sport Following Medial Patellofemoral Ligament Reconstruction

Darby A. Houck, BA
Rishi Baweja, BA
Tracy Didinger, MD
Michelle L. Wolcott, MD
Armando F. Vidal, MD
Jonathan T. Bravman, MD

Division of Sports Medicine and Shoulder Surgery
Department of Orthopedics
University of Colorado
Disclosures

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It is well accepted that reconstruction of the medial patellofemoral ligament (MPFL) results in lower rates of recurrent patellar instability and improved subjective outcomes vs. nonoperative treatments [Ambrozic, 2016; Lippacher, 2014; Schneider, 2016; Howells, 2012].

However, there is little in the literature regarding return to preinjury/preoperative activities following MPFL reconstruction. Thus, we currently do not have adequate information to provide patients regarding the likelihood of returning to play or the level of play typically achieved after such a reconstruction.
Purpose

- To examine the ability of patients to return to sport (RTS), their post-op activity levels and determine reasons patients do not resume preoperative activities following MPFL reconstruction surgery.
Methods

Retrospective Case Series

**INCLUSION CRITERIA**

- Patients, ages 13-80 years old, treated surgically for patellar instability by the CU Sports Medicine practice who have undergone primary MPFL reconstruction with minimum 1 year of follow-up were included.

**EXCLUSION CRITERIA**

- Patients under 13 years old
- Patients who have undergone previous knee surgeries prior to MPFL reconstruction
- Patients who underwent concomitant cartilaginous and/or ligamentous repairs along with MPFL reconstruction
At a minimum one year follow-up, patients completed a survey including preoperative and postoperative patient-reported outcomes:

- SF-12 Physical (SF-12 P) and Mental (SF-12 M), Norwich Patellar Instability (NPI), and Tegner activity level.

The following data was extracted from each chart:

- Age at surgery, gender, surgery-side, concomitant procedures, graft tendon type and graft processing method.

Statistical analysis:

- Student’s t-tests and multivariate analyses were used to determine predictors of worse patient-reported outcomes at time of follow-up.
Thirty-eight patients (44 knees) completed the survey.

<table>
<thead>
<tr>
<th>Demographics</th>
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<tbody>
<tr>
<td>Female, (%)</td>
<td>71.1</td>
</tr>
<tr>
<td>Mean age, years</td>
<td>23.3 ± 7.6</td>
</tr>
<tr>
<td>Mean follow-up, years</td>
<td>3.3 ± 2.0</td>
</tr>
</tbody>
</table>
# Results

- Improvements were achieved in the mean NPI, SF-12 M (p < 0.0001) and SF-12 P (p = 0.03).
- Tegner increased from $2.3 \pm 2.0$ to $5.7 \pm 2.4$ postoperatively (p < 0.0001), however, the postoperative Tegner was lower than pre-injury ($7.1 \pm 2.1$; p = 0.005).

<table>
<thead>
<tr>
<th>Tegner Scores</th>
<th>Mean ± SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-injury</td>
<td>7.1 ± 2.1</td>
<td>0.005</td>
</tr>
<tr>
<td>Preoperative</td>
<td>2.3 ± 2.0</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Postoperative</td>
<td>5.7 ± 2.4</td>
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Of the 93.2% who played a sport, 41.5% did RTS and had significantly higher Tegner (p = 0.008) compared to patients who did not.

Consequently, 54.2% changed their primary sport/activity.

<table>
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<tr>
<th>Reasons for not RTS</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Fear of re-injury, %</td>
<td>37.2</td>
</tr>
<tr>
<td>Knee dysfunction, %</td>
<td>23.3</td>
</tr>
<tr>
<td>Other life factors, %</td>
<td>23.3</td>
</tr>
<tr>
<td>Lack of interest, %</td>
<td>16.3</td>
</tr>
</tbody>
</table>
For every year increase in age, the mean Tegner improvement decreased significantly (p=0.03).

Knees (27.3%) with tibial tubercle osteotomy (TTO) had significantly worse postoperative Tegner (p=0.03) compared to knees without.

No associations were found between graft type or processing with any outcome.

There were no recurrent dislocations, 2 (4.5%) subjective sensations of subluxation and 1 (2.3%) patellar subluxation requiring MPFL repair. Eight (18.2%) knees had a subsequent procedure.
Following MPFL reconstruction, approximately 42% of patients RTS at lower activity levels compared to pre-injury level, especially in older patients and patients who undergo concomitant TTO.

Subjective outcomes of MPFL reconstruction are not influenced by graft type or processing method.

Many patients do not RTS due to fear of re-injury, knee dysfunction or other life factors not related to the successful result of their MPFL reconstruction.


Thank You

- Jonathan.Bravman@UCDenver.edu