Medial Patellofemoral Ligament Repair versus Reconstruction for Chronic Patella Instability

University of Missouri Department of Orthopedic Surgery

Seth L. Sherman, M.D.  Lasun O. Oladeji, M.D.
Joseph M. Rund, BS  Zachary J. DiPaolo, M.D.
John W. Welsh, BA  Taylor E. Ray
Disclosure

I (and/or my co-authors) have something to disclose.

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AAOS Orthopaedic Disclosure Program on the AAOS website at http://www.aaos.org/disclosure
The medial patellofemoral ligament (MPFL) is the primary soft-tissue restraint against lateral patellar displacement.

Surgery to address MPFL incompetence is the current gold standard for recurrent patellofemoral instability.

Controversy remains regarding the role of MPFL repair versus reconstruction in the setting of chronic patella instability.
Purpose and Hypothesis

**Purpose**
- To investigate the outcomes and complication profile of consecutive cohorts undergoing MPFL repair and MPFL reconstruction

**Hypothesis**
- The MPFL reconstruction group would have higher subjective outcome scores and lower complication profile
Methods

- Following IRB approval, retrospective review of prospectively collected data identified a consecutive cohort of patients undergoing soft tissue stabilization for recurrent patella instability.

- Surgery was performed by a single sports fellowship trained surgeon between 2011-2018.

- MPFL repair was performed on patients prior to November of 2015 and MPFL reconstruction from December 2015 to present.
Patients undergoing concomitant bony realignment procedures were included

Pre-surgical and post-surgical patient reported outcomes were collected
- PROMIS, KOOS, IKDC, Marx, Tegner, and SANE scores

Complications requiring re-operation (infection, stiffness, recurrent instability) were recorded

Final follow-up ranged from 6-59.3 months
## Patient Demographics

<table>
<thead>
<tr>
<th></th>
<th>MPFL Repair</th>
<th>MPFL Reconstructions</th>
<th>Total: 130 patients and 144 knees</th>
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</thead>
<tbody>
<tr>
<td>Number of knees</td>
<td>49 (34.03%)</td>
<td>95 (65.97%)</td>
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<tr>
<td>Male, Females</td>
<td>14 M and 31 F (68.9% F)</td>
<td>24 M and 61 F (71.8% F)</td>
<td>(p = 0.732) Total: 38 M (29.2%) and 92 F (70.8%)</td>
</tr>
<tr>
<td>Mean Age</td>
<td>17.2 (range, 10.6-38.6)</td>
<td>23.9 (range, 13.1-50.8)</td>
<td>p = 0.000</td>
</tr>
<tr>
<td>Mean BMI</td>
<td>27.44 +/- 6.87</td>
<td>29.20 +/- 7.25</td>
<td>p = 0.155</td>
</tr>
<tr>
<td>Knees with Bony Realignment</td>
<td>15 (30.6%)</td>
<td>38 (40%)</td>
<td>p = 0.268</td>
</tr>
</tbody>
</table>
Results – Reported Outcomes

- There were no differences in baseline pre-operative scores between groups
  - With the exception of lower KOOS Symptoms score in the MPFL reconstruction group (52.24 +/- 16.94 vs. 68.75 +/- 13.77, p=0.011)

- MPFL repair and reconstruction groups demonstrated significant improvements in all KOOS domains

- MPFL reconstruction group also demonstrated significant improvements from baseline in PROMIS domains, IKDC, Tegner, and SANE scores

- The MPFL repair group had greater PROMIS mental health (55.76 +/- 9.77 vs. 49.81 +/- 8.51, p=0.038) and KOOS quality of life scores (50.00 +/- 11.42 vs. 30.82 +/- 28.05, p=0.033)
Results – Reported Outcomes

**PROs in MPFL Repair Patients**
- PROMIS Physical Health
- PROMIS Mental Health
- PROMIS Pain Interference
- PROMIS Physical Function
- IKDC
- KOOS Pain
- KOOS Symptoms
- KOOS ADL
- KOOS Sport/Rec
- KOOS QOL
- Marx
- Tegner

**PROs in MPFL Reconstruction Patients**
- PROMIS Physical Health
- PROMIS Mental Health
- PROMIS Pain Interference
- PROMIS Physical Function
- IKDC
- KOOS Pain
- KOOS Symptoms
- KOOS ADL
- KOOS Sport/Rec
- KOOS QOL
- Marx
- Tegner
The complication rate in the MPFL repair group was significantly higher in comparison to the reconstruction group (22.45% vs. 10.59%).

Repair group had a significantly higher rate of revision to reconstruction (8 vs. 1, 16.3% vs 1.1%).

Reconstruction group had higher rate of surgery for stiffness (4 vs. 1, 4.2% vs 2.0%).

<table>
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<tr>
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<th>MPFL Repair</th>
<th>MPFL Reconstructions</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complication rate</td>
<td>22.45%</td>
<td>10.59%</td>
<td>0.033</td>
</tr>
<tr>
<td>Rate of revision</td>
<td>16.3% (8 knees)</td>
<td>1.1% (1 knee)</td>
<td>0.0003</td>
</tr>
<tr>
<td>Stiffness rate</td>
<td>4.2% (4 knees)</td>
<td>2.0% (1 knee)</td>
<td>0.500</td>
</tr>
</tbody>
</table>
In the setting of chronic patella instability, both MPFL reconstruction and MPFL repair demonstrated significant improvements in all KOOS domains.

MPFL reconstruction also demonstrated significant improvement in IKDC, PROMIS, Tegner, and SANE scores.

KOOS QOL and PROMIS mental health were better in the MPFL repair group.

There was a significantly higher complication profile in the MPFL repair group, including increased revision rate to reconstruction.
Thank you!

- shermanse@health.missouri.edu
- www.mizzousportsdoc.com

Orthopaedic Surgery
School of Medicine
University of Missouri Health