Clinical Outcomes after arthroscopic posterolateral joint capsule stabilization for isolated posterolateral rotational instability of the knee.

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I have no financial conflicts to disclose.

Soshi Uchida, MD., PhD.

I have something to disclose. Detailed disclosure information is available via:

A consultant for Smith & Nephew, ConMed
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ISAKOS meeting program http://www.isakos.com/meetings/2019Congress/
Introduction

• The incidence of Posterolateral corner (PLC) injuries ranges from 5% to 9% of all injuries of the knee.  
  Shon OJ et al. KSRR, 2017
  Pacheco RG et al, JBJS Br, 2011

• Although isolated PLC injury is rare (8-11%), that could be a source of unexplained knee pain and dysfunction.
  Raheem et al. KSSTA, 2007

• The posterolateral capsular ligament has an important role in stabilizing posterolateral rotation.
  Terry GC et al. AJSM, 1996
  Shon OJ et al. KSRR, 2017

• We demonstrated an entirely arthroscopic approach to stabilize the PLC, by stabilizing the posterior lateral joint capsule with lateral meniscus attached to the rim of the lateral tibial plateau.
  Ohnishi and Uchida et al, Arthrosc Tech, 2017
To evaluate clinical outcomes after arthroscopic stabilization of the posterior lateral joint capsule with the lateral meniscus for isolated PLRI of the knee.
Inclusion criteria

- Patients who suffered from knee pain, failed to non-operative therapy.
- **No** significant abnormal signals of the fibular collateral ligament (FCL), popliteofibular ligament (PFL), and popliteus tendon in MRI.
- Diagnosed as PLRI with physical examinations: the dial test, the reverse pivot shift test, the external rotational instability test.
Materials, Clinical outcomes

- **11** cases (M: 4, F: 7)
- Mean age: **21.0** years (range 14 to 43 years)
- Mean follow up period: **24.0** mo. (range 10 to 33 mo.)
- **Patient Reported Outcomes (PRO)**
  - Internal Knee Documentation Committee (IKDC)
  - Knee Injury & Osteoarthritis Outcome (KOOS)
- Outcomes were compared between pre-operative and final follow-up.
16F high competitive Softball player

- Suffered from Right knee pain
- The dial test: positive
- The external rotational instability test: positive

PCL continuity+

high-intensity area @ the meniscocapsular junction
Surgical technique

Drive-through sign

Abraded by a shaver

Soft anchor was placed.

Soft anchors were placed just anterior and posterior to popliteus tendon.
Return to Sports: 81.8% (9/11)

KOOS

* P < 0.05, Wilcoxon

IKDC

*
The proposed technique

Anatomically...

- The popliteus tendon and PFL is the primary stabilizer of external tibial rotation at all knee flexion angles.

- The coronary ligament of the lateral meniscus extends from the popliteal hiatus to the popliteomeniscal fascicle and plays a role as a resistance to tibial posterolateral rotation.

- Our procedure, stabilizing the posterior lateral joint capsule with lateral meniscus, is a more anatomically correct repair that would improve PLRI.

LaPrade et al, CORR, 2002

Terry GC et al, AJSM, 1996
### outcomes of direct comparison literature

**repair vs reconstruction**

<table>
<thead>
<tr>
<th>Author (year)</th>
<th>Mean Lysholm</th>
<th>Mean IKDC</th>
<th>Mean KOOS</th>
<th>Success (ratio)</th>
<th>Failure (ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Levy et al (2010)</strong></td>
<td>85</td>
<td>79</td>
<td>77</td>
<td>6 (60%)</td>
<td>4 (40%)</td>
</tr>
<tr>
<td>Repair</td>
<td>88</td>
<td></td>
<td></td>
<td>17 (94%)</td>
<td>1 (6%)</td>
</tr>
<tr>
<td>Reconstruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stannard et al (2005)</strong></td>
<td>88.2</td>
<td>59.8</td>
<td>63.6</td>
<td>22 (63%)</td>
<td>-</td>
</tr>
<tr>
<td>Repair success group</td>
<td>86.8</td>
<td>63.6</td>
<td>56.1</td>
<td>-</td>
<td>1 (37%)</td>
</tr>
<tr>
<td>Repair failure group</td>
<td>89.6</td>
<td>56.1</td>
<td>64.4</td>
<td>20 (91%)</td>
<td>2 (9%)</td>
</tr>
<tr>
<td>Recon. success group</td>
<td>92.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recon. failure group</td>
<td></td>
<td></td>
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<tr>
<td><strong>Current study</strong></td>
<td>83.9</td>
<td>89.6</td>
<td></td>
<td>10 (91%)</td>
<td>1 (9%)</td>
</tr>
</tbody>
</table>

Failure was defined as needed revision surgery.

☑️ **Our study shows favorable clinical outcome based on patient-reported outcome and success rate.**
Conclusion

Arthroscopic stabilization of the posterior lateral joint capsule with the lateral meniscus is less invasive and could provide favorable clinical outcome for the treatment of isolated PLRI of the knee.
References