Comparison of Postoperative Outcomes for Medial Meniscal Ramp Lesions between Left without Repair and All-Inside Suture

Kazuhisa Hatayama\textsuperscript{1)}, Masanori Terauchi\textsuperscript{1)}, Ryota Takase\textsuperscript{2)}, Satoshi Nonaka\textsuperscript{2)}, Hiroshi Higuchi\textsuperscript{3)}

\textsuperscript{1)} Dept. of Orthop. Surg., Gunma Central Hospital, JAPAN
\textsuperscript{2)} Dept. of Orthop. Surg., Gunma Graduate School of Medicine, JAPAN
\textsuperscript{3)} Dept. of Orthop. Surg., Asakura Sports Rehabilitation Clinic, JAPAN
Kazuhisa Hatayama, MD, PhD
I have no financial conflicts to disclose.
Longitudinal tears of the medial meniscus posterior horn around the meniscocapsular junction are frequently associated with ACL injuries, termed as “ramp lesion”.
Effect on kinematics

- Anterior and external rotational laxities were significantly increased after sectioning of the posteromedial meniscocapsular junction in an ACLD knee.
- These were not restored after ACLR alone but were restored with ACLR combined with posterior meniscocapsular repair.


However...
There is no clear consensus on the appropriate treatment for ramp lesions.

Purpose

To compare the postoperative outcomes for ramp lesions between left without repair and all-inside suture through the posteromedial portal.
Materials and Methods

- 40 knees with ACL injury and concomitant ramp lesions were enrolled. All knees underwent anatomic double-bundle ACLR using ST.

- 23 knees from Aug. 2011 through Mar. 2015
  Ramp lesions were left without repair (L group)
Materials and Methods

- **17 knees** from Apr. 2015 through Mar. 2017

**All-inside suture** using ACCU-PASS Suture Shuttle 45°® (S&N) through the posteromedial portal *(R group)*
Clinical evaluation

- Postoperative knee stability @ 1y
  - SSD in ATT (Stress XP using Telos SE at 20º)
  - Pivot-shift test

- Healing status of ramp lesions @ 1y (3-T MRI)
  - **Healed** (Completely healed or Partially healed)
  - **Unhealed**

![Pre-op](image1.png) ![Post-op](image2.png)

![Pre-op](image3.png) ![Post-op](image4.png)

Statistical Analysis

The Student’s t-test and the chi-squared test were used.
## Results

<table>
<thead>
<tr>
<th></th>
<th>L group</th>
<th>R group</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSD in ATT (mm)</td>
<td>2.3 ± 1.6</td>
<td>2.1 ± 1.2</td>
<td>NS</td>
</tr>
<tr>
<td>Positive ratio on the pivot-shift test (%)</td>
<td>17.4 (4/23)</td>
<td>17.6 (3/17)</td>
<td>NS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Healing status</th>
<th>L group</th>
<th>R group</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely healed (%)</td>
<td>43.5 (10/23)</td>
<td>88.2 (15/17)</td>
<td>0.004</td>
</tr>
<tr>
<td>Partially healed (%)</td>
<td>26.1 (6/23)</td>
<td>11.8 (2/17)</td>
<td>-</td>
</tr>
<tr>
<td>Unhealed (%)</td>
<td>30.4 (7/23)</td>
<td>0 (0/17)</td>
<td>-</td>
</tr>
<tr>
<td>Healing rate (%)</td>
<td>69.5 (16/23)</td>
<td>100 (17/17)</td>
<td>0.01</td>
</tr>
</tbody>
</table>
### Results

<table>
<thead>
<tr>
<th>SSD in ATT (mm)</th>
<th>Healed knee (33 knees)</th>
<th>Unhealed knee (7 knees)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.9 ± 1.4</td>
<td>3.4 ± 0.6</td>
<td>0.009</td>
</tr>
</tbody>
</table>

✓ Two knees in the L group required medial meniscectomy for a subsequent bucket-handle tear within 5 ys after ACLR.

Preop. MRI  
Postop. MRI  
A/S at 1y after ACLR
Conclusion

✓ The healing rate after all inside suture through the posteromedial portal was 100%, although the healing rate of ramp lesions left without repair was insufficient.

✓ Anterior translation of the knees that ramp lesion was unhealed was significant larger than the knee that it was healed.
References


