Repair for Posterior Lateral Meniscus Radial/Flap Tears Combined with ACL Reconstruction
Arthroscopic Evaluations at Two-Year Post-Operation

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I have no financial conflicts to disclosure.
Radial/flap tears of the posterior lateral meniscus (LM)

• 10% with ACL injury\(^1\)
• Biomechanical studies
  – Repair can normalize the contact pressure\(^2,3\)
• Clinical studies
  – Successful clinical outcomes\(^4\) and short-term (8 mos) MRI results\(^5\)
• How much meniscal function remains by repair in a clinical setting? – Unknown.
in vivo functions of the meniscus

• Clinical findings
  – Pain, ROM, Lachman test
• X-ray
  – Lateral joint space
• MRI
  – Coronal extrusion
• Arthroscopy
in vivo functions of the meniscus

- Clinical findings
- X-ray
- MRI
- Arthroscopy

Equivalent results to intact LM.
- JOSKAS 2018

Purpose
To evaluate the mid-term arthroscopic evaluations after repair of radial/flap tears of the posterior LM combined with ACLR.
Patients data

- Primary ACLR (>2y f/u, 2008~2016)
  - Group LM: Repair radial/flap tears of the LM
  - Group C (control): Intact LM

<table>
<thead>
<tr>
<th></th>
<th>LM</th>
<th>C</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>29.0(14-51)</td>
<td>27.0(13-61)</td>
<td>N.S.</td>
</tr>
<tr>
<td>Male/female</td>
<td>13/17</td>
<td>22/44</td>
<td>N.S.</td>
</tr>
<tr>
<td>Time from injury to</td>
<td>125.7(27-1124)</td>
<td>123.5(26-1086)</td>
<td>N.S.</td>
</tr>
<tr>
<td>surgery (d)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time from initial surgery to 2\textsuperscript{nd}-look surgery (y)</td>
<td>2.3(1.7-6.1)</td>
<td>2.9(1.3-6.3)</td>
<td>0.03</td>
</tr>
</tbody>
</table>
Surgical procedure

Anatomical ACLR

- BTB
- HS

LM repair

- Inside-out
- All-inside suture repair

Evaluations

• Healing rate after repair (Group LM)

• Changes of chondral status
  – Lateral femoral condyle (LFC) and lateral tibial plateau (LTP)
    • ICRS grading
Results: Healing rate

<table>
<thead>
<tr>
<th>Complete Healing</th>
<th>Partial Healing</th>
<th>Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 (60%)</td>
<td>9 (30%)</td>
<td>3 (10%)</td>
</tr>
</tbody>
</table>
Results: Chondral status @ LFC

Group LM

Initial Grade: 30
- Improved: 6/30 (20%)
- No change: 22/30 (73.3%)
- Worsened: 2/30 (6.7%)

Group C

Initial Grade: 66
- Improved: 7/66 (10.6%)
- No change: 55/66 (83.3%)
- Worsened: 4/66 (6.1%)

ICRS grading

N.S.

Initial
2nd-look
Results: Chondral status @ LTP

Group LM

Initial Grade

2nd-look Grade

Improved: 3/30 (10%)
No change: 9/30 (30%)
Worsened: 18/30 (60%)

Group C

Initial Grade

2nd-look Grade

Improved: 4/66 (6.1%)
No change: 48/66 (72.7%)
Worsened: 14/66 (21.2%)

ICRS grading

P = 0.0011
Discussion: in vivo functions

- Clinical findings
- X-ray
- MRI
- Arthroscopy
  - High healing rate (÷ previous reports\textsuperscript{5,6})
  - Worsened chondral damage at LTP

\textcolor{red}{\rightarrow} Side-to-side repair could not fully restore normal function?
Conclusions

• Meniscal healing was obtained in 90% by side-to-side repair.
• Chondral lesions of the lateral tibial plateau deteriorated at 2 years postoperatively.

References