Primary transosseous ACL repair in proximal lesions

G.L. Canata, V. Casale

Centre of Sports Traumatology, Koelliker Hospital, Torino
Institute of Sports Medicine, Torino, Italy
I have no financial conflicts to disclose
ACL primary transosseous repair

• Successful in specific cases (both acute or chronic) with a proximal injury location and a good tissue quality

• A renewed interest is rising in the primary healing capacity of the anterior cruciate ligament (ACL), usually when approaching acute lesions. In this prospective study we present an arthroscopic technique for ACL primary repair as a suitable choice for managing both acute and chronic ligament lesions, reporting outcomes.
MATERIAL:

- Patients undergoing a primary arthroscopic ACL transosseous repair with a cortical button fixation for a proximal avulsion tear between 2006-2017

- 47 patients (26 m., 21 f.), mean age 34 ys (r. 13 - 70)

  of which

- 11 patients (acute) underwent the repair within 3 weeks from injury

- 36 patients (chronic) were treated after at least 4 weeks from trauma.

- All the patients practiced sports activity before the trauma.

- Mean follow-up was 6.7 years (r. 1 - 11.5 years).
METHODS:

Clinical evaluation subjective outcomes:

- Tegner Activity Scale
- Knee Injury and Osteoarthritis Outcome Score (KOOS) pre- and postoperatively
- International Knee Documentation Committee (IKDC)

Functional outcomes:

- IKDC objective score
- Anterior stability measured with a KT-1000® arthrometer
- Pre- and postoperative conditions were statistically compared using the Student $t$-test.
RESULTS:

Statistically significant differences were found in pre- and postoperative KOOS scores, and both the subjective and objective IKDC scores (p<0,05)

Four patients underwent an ACL reconstruction for traumatic failure of the repair, of whom 1 patient after a primary acute lesion and 2 patients after a chronic tear repair.

One patient quit sports activity at all.
PATIENTS RESUMING PRE-INJURY ACTIVITY LEVEL: 79%
## RESULTS

### FUNCTIONAL OUTCOMES

**PRE- AND POSTOPERATIVE IKDC AND KT – 1000 OBJECTIVE SCORES**

<table>
<thead>
<tr>
<th>Test</th>
<th>Preoperative</th>
<th>Last Follow-Up</th>
<th>P-Value (Method)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IKDC objective</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-A (normal)</td>
<td>0</td>
<td>47</td>
<td><strong>P &lt; 0.05</strong> (Student t-test)</td>
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<tr>
<td>-B (nearly normal)</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>-C (abnormal)</td>
<td>41 (86%)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>-D (severely abnormal)</td>
<td>6 (13%)</td>
<td>0</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Test</th>
<th>Preoperative</th>
<th>Last Follow-Up</th>
<th>P-Value (Method)</th>
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<tbody>
<tr>
<td>KT-1000</td>
<td></td>
<td></td>
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<tr>
<td>&lt; 3 mm</td>
<td>2 (4%)</td>
<td>47</td>
<td><strong>P &lt; 0.05</strong> (Student t-test)</td>
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<tr>
<td>3-5 mm</td>
<td>39 (83%)</td>
<td>0</td>
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<tr>
<td>&gt; 5 mm</td>
<td>6 (13%)</td>
<td>0</td>
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CONCLUSIONS

• The ACL primary repair is a valid surgical option in specific cases, provided a good quality of ligamentous tissue and a proximal location of the lesion, in both acute and chronic ACL-deficient knees.

• This technique consisting in re-tensioning the ACL through cortical fixation is effective and minimally invasive with excellent results and a failure rate of less than 10%.

• Further research is needed to identify the best surgical indications for this procedure and to reduce the revision incidence.
REFERENCES: