Fixation of Osteochondritis dissecans (OCD) Using ActivaPin™s and Arthroscopic Pin Applicator

Esa Partio
M.D., Ph.D.
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## Summary Table

<table>
<thead>
<tr>
<th>Patient no.:</th>
<th>16</th>
<th>Exitus:</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient initials:</td>
<td>SSu</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Smoking:</th>
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<th>Sex:</th>
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<tbody>
<tr>
<td>Use of alcohol:</td>
<td>No use</td>
<td>Age:</td>
<td>15 years</td>
</tr>
<tr>
<td>Other disease:</td>
<td>No</td>
<td>Height:</td>
<td>170 cm</td>
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<tr>
<td>Contin. medication</td>
<td>No</td>
<td>Weight:</td>
<td>75 kg</td>
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</tbody>
</table>

### Operator:

- **Esa Partio**
- **DG no.:** M93.2
- **DG:** OCD genu I dx
- **Operation:**
- **Operation no.:** NGF35
- **Injury date:** -
- **Operation date:** 25.3.2009
- **Operation time:** 20 min
- **Hospital stay:** 1 day
- **Sick leave:** 45 days
- **Bloodless field during operation:** Yes
- **Prophylactic antibiotics:** No

### Implant 1:

- **Implant performed:** ActivePin
- **LOT:** REF B-AP-2030
- **Drilling:** K-wire

### Implant 2:

- **Implant performed:** ActivePin
- **LOT:** REF B-AP-2030
- **Drilling:** K-wire

### Table:

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<th></th>
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<th>3 weeks</th>
<th>3 months</th>
<th>6 months</th>
<th>1 year</th>
<th>Call 3 Years</th>
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<tbody>
<tr>
<td>Operator:</td>
<td>Esa Partio</td>
<td>Esa partio</td>
<td>Esa partio</td>
<td>Esa Partio</td>
<td>-</td>
<td>Esa Partio</td>
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<tr>
<td>Obj. result:</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Moderate</td>
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<td>Good</td>
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<tr>
<td>Subj. result:</td>
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<td>Moderate</td>
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<td>Exact</td>
<td>Exact</td>
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<td>-</td>
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<td>Def. &lt;10 deg</td>
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<td>Like before</td>
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<td>-</td>
<td>Changed activities</td>
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<td>No</td>
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<td>-</td>
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<td>Infection:</td>
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<td>No</td>
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<td>No</td>
<td>No</td>
<td>-</td>
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<tr>
<td>Radiol. final posit.:</td>
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<td>Stable</td>
<td>Stable</td>
<td>Stable</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Extra notices:
- After 6 months the posterior side of the knee was a little painful during sport activities. Control MRI was performed. MRI finding showed good progress in healing of the OCD and fluid accumulation around the popliteal ligament at the posterior side of the knee explaining the pain feeling during the sport activities.
1 Case Description

Patient was a 15 years old normal weight sports active male, with diagnosed Osteochondritis dissecans (OCD) in the right knee. In clinical examination in addition to OCD pain was noted around the popliteal tendon at the posterior side of the knee. MRI investigation was carried out in order to confirm the diagnosis.

Figure 1  Preoperative MRI of the knee with one OCD lesion on the lateral femoral condyle.

MRI investigation revealed OCD lesion at the lateral femoral condyle and slight fluid accumulation around the popliteal tendon. Operative treatment of the OCD lesion was decided.
2 Surgical Procedure

Both ActivaPin™ 2.0 x 30 mm implants were fully inserted with ActivaPin™ Arthroscopic Pin Applicator and mallet. Drill holes were drilled slightly non parallel to achieve good stability to the fixation.

Figure 2  Drilling

Figure 3  Insertion of the pin
As a postoperative regimen free mobilization with partial weight bearing was applied for three weeks.

3 Results

At 2 months postoperatively X-ray investigation was carried out to evaluate the stability of the OCD lesion. The X-ray evaluation at 2 months postoperatively revealed a stable OCD fragment.

Figure 4  Pins were fully inserted under the cartilage surface

Figure 5  2-month postoperative X-ray.
At 6 months MRI investigation was carried out in order to evaluate the healing of the OCD lesion.

Figure 6  Left: Angled direction of the pins, Right: AP-view

Figure 7  Close up of the healed bone bridge medially from the pin.

Six months postoperatively early signs of healing of the OCD lesion was noted around the pin channels in the MRI investigation. Fluid accumulation around the popliteal ligament was also slightly increased comparing to the preoperative MRI. After healing of the OCD the patient returned to sport activities. However, still 3 years after the operation pain at the posterior side of the knee limited the sport activities.
4 Conclusion

Result of the operation was good and patient was able to continue his semi-professional sport activities. Operation was easy to make and insertion feel of the both pins was smooth and pins slid in steadily with good friction. Grooved surface enables stable fixations even with small fragments. Instrument’s ability to sink implant’s proximal head slightly under the cartilage level secures fixation and allows tissue growth over the implant closing the channel to the joint. The pain at the posterior side of the knee noted at 3 year follow up most likely is caused by the irritation of the popliteal ligament. Further investigations are needed in solving this problem.

5 Contact Information Concerning the Case

Esa Partio, M.D., Ph.D.

6 Suggested Reading