OBJECTIVE

- Osteochondritis Desicans (OCD) of the capitellum is an uncommon condition seen in immature athletes who undergo repetitive compression of the radiocapitellar joint.
- Exact etiology is unclear; repetitive microtrauma and ischemia believed to play important role.
- Management is guided by stability of the lesion and status of articular cartilage.
- Stable lesions usually treated conservatively; surgery indicated for unstable lesions, mechanical symptoms, loose body, or stable lesions having failed conservative treatment.
- Multiple surgical techniques have been described including debridement with or without microfracture, fragment fixation, and osteochondral autograft transfer (OATS).
- No consensus of optimal surgical technique.
- Objective of this paper is to compare clinical results and functional outcomes in patients with OCD lesions of the capitellum treated with either osteochondral autograft transplantation (OATS) or debridement with or without microfracture.

METHODS

- Systematic review and literature search of multiple medical databases was performed using PRISMA guidelines.
- Methodological quality of individual studies was assessed by two review authors using the Cochrane Collaboration’s “Risk of Bias” tool.
- Case reports were excluded; only case series of more than five patients and higher level of evidence were included.
- Only studies discussing debridement with or without microfracture and/or OATS were analyzed.
- All study, subject, and surgery parameters were collected.
- Data was analyzed using statistical software.
- Odds ratios (OR) were calculated when possible.
- Data were compared using Pearson Chi-Square and independent sample T tests when applicable.

RESULTS

- 15 studies meeting our criteria were included involving 368 patients (326 males and 42 females).
- 197 patients in Debridement group, 171 in OATS group.
- Mean age was 16.9 ± 4.1 for the debridement group and 14.6 ± 1.2 for the OATS group.
- Mean follow up was 29.0 ± 24.3 months for debridement group and 38.0 ± 12.8 months for OATS group.
- Patients that underwent an OATS had a 12% increase in post-op arc range of motion (ROM) compared to only a 4% increase in patients undergoing a debridement (p<0.001).
- Patients undergoing OATS compared to debridement are more likely to return to at least their pre-injury level of sports, OR 5.6 (p<0.002).

CONCLUSIONS

- Post-operative ROM was significantly improved in patients undergoing an OATS procedure versus a debridement for OCD lesions of the capitellum.
- Patients with an OATS were 5.7 times more likely to return to at least their pre-injury level of sports compared to patients undergoing a debridement.

REFERENCES

1. MUSC Department of Orthopaedics, 2 University of Virginia Department of Orthopaedics.

Figure 1. Flowchart summarizing literature search screening method

Table 1. OATS versus Debridement: ROM and Return to Sports

<table>
<thead>
<tr>
<th></th>
<th>Pre-Op ROM</th>
<th>Post-Op ROM</th>
<th>Percentage Increase in ROM</th>
<th>Return To Sports</th>
</tr>
</thead>
<tbody>
<tr>
<td>OATS</td>
<td>113.1 ± 10.7</td>
<td>128.8 ± 8.6</td>
<td>12.0 %</td>
<td>97.0 %</td>
</tr>
<tr>
<td>Debridement</td>
<td>127.0 ± 13.7</td>
<td>132.4 ± 3.9</td>
<td>4.0 %</td>
<td>85.0 %</td>
</tr>
</tbody>
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Figure 2. Preoperative anteroposterior X-ray and coronal T2-weighted MRI of 11 year old competitive gymnast with large left elbow OCD lesion

Figure 3. Intraoperative photos of osteochondral autograft plug transfer for OCD lesion depicted in Figure 2


