INTERMEDIATE OUTCOMES OF HYDROGEL IMPLANT FOR HALLUX RIGIDUS

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Intermediate Outcomes of Hydrogel Implant for Hallux Rigidus

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Intermediate Outcomes of Hydrogel Implant for Hallux Rigidus

- Incidence of Hallux rigidus – 2-10%; Most common arthritis of foot\(^1\)
- Options: Debridement, cheilectomy, arthroplasty and fusion\(^2,3\)
- Fusion = reliable, but no motion
- Arthroplasty = motion, but unreliable results/complications\(^3,4\)
- Polyvinyl Alcohol Hydrogel
  - Synthetic material
  - Biomechanical properties similar to cartilage
- RCT – non-inferiority study comparing Cartiva to 1\(^{st}\) MTP = promising results\(^5\)
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- Polyvinyl Alcohol Hydrogel
  - Synthetic material
  - Biomechanical properties similar to cartilage

- RCT – non-inferiority study comparing polyvinyl alcohol hydrogel to 1st MTP = promising results

\(^5\)
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Methods

- Patients enrolled in the aforementioned RCT, who received the hydrogel implant with at least 5 year follow up were contacted
- Patients were examined, radiographs obtained
- Outcomes scores → SF-36, FAAM, Visual analog scale (VAS) for pain, satisfaction questions.
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Results

- 29 patients identified, with 27 available for follow-up
- Average follow-up 5.3 years
- 96.2% of implants were retained at follow-up
- 92.6% (25/27) would undergo the procedure again
- Radiographs of 23 of 27 patients were reviewed
  - No changes in implant position
  - One patient converted to 1st MTP fusion
  - 2 patients with proximal phalanx cyst
  - 8 patients with osteophyte development
# Intermediate Outcomes of Hydrogel Implant for Hallux Rigidus

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Baseline</th>
<th>Follow-up (5 yr)</th>
</tr>
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<tbody>
<tr>
<td>Active MTP dorsiflexion</td>
<td>12.8 degrees</td>
<td>18.5 degrees (11.4-25.6)</td>
</tr>
<tr>
<td>Peak dorsiflexion</td>
<td>22.9 degrees</td>
<td>28.4 degrees (19.8-37)</td>
</tr>
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# Intermediate Outcomes of Hydrogel Implant for Hallux Rigidus

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Mean Pre-op n=25</th>
<th>5.3 years Post-op n=25</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAS Pain</td>
<td>64.1</td>
<td>5.5</td>
</tr>
<tr>
<td>FAAM ADL</td>
<td>61.4</td>
<td>95.8</td>
</tr>
<tr>
<td>FAAM Sports</td>
<td>39.1</td>
<td>89.6</td>
</tr>
<tr>
<td>SF-36 Physical</td>
<td>39.5</td>
<td>51.8</td>
</tr>
<tr>
<td>SF-36 Mental</td>
<td>55.6</td>
<td>54.1</td>
</tr>
</tbody>
</table>
Intermediate Outcomes of Hydrogel Implant for Hallux Rigidus
## Intermediate Outcomes of Hydrogel Implant for Hallux Rigidus

<table>
<thead>
<tr>
<th>Overall Well-being Improved?</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>66.7%</td>
</tr>
<tr>
<td>Agree</td>
<td>29.6%</td>
</tr>
<tr>
<td>Neutral</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall level of Function</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>67%</td>
</tr>
<tr>
<td>Nearly Normal</td>
<td>33.3%</td>
</tr>
<tr>
<td>Abnormal</td>
<td>3.7%</td>
</tr>
</tbody>
</table>
Conclusions

- Polyvinyl alcohol hydrogel implant continues to function well 5 years
- Patients are satisfied and report a high level of function
- Low revision rate – only one patient converted to fusion (4%)
- Viable option for treatment of 1st MTP arthritis
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