The Use of Cryo-Preserved Umbilical Cord Plus Amniotic Membrane Tissue in the Resection of Tarsal Coalition

DJ Covell MD, MPH, BE Cohen MD, JK Ellington MD, CP Jones MD, WH Davis MD, RB Anderson MD

Ortho Carolina

Foot and Ankle Institute

Charlotte, NC
Disclosure

D. Jeff Covell MD, MPH
*Bruce Cohen MD
*J. Kent Ellington MD
*Carroll Jones MD
*W. Hodges Davis MD
*Robert Anderson MD

*Consultants for AMNIOX® Medical
Background

- Tarsal coalition is a common underlying cause of painful flatfoot deformity in adults and adolescents

- Failure of conservative treatment may require surgical resection in some cases
Background

- Adequate resection leaves a void that can be filled with:
  - Bone wax
  - Fat graft
  - Adjacent muscle or tendon, etc.

- Interposition grafting:
  - Provides physical barrier
  - Deters recurrence
  - Deters bony overgrowth
Goal of study

- To evaluate commercially available umbilical cord plus amniotic membrane tissue as an interposition graft with functional and radiologic outcomes at follow-up
Methods

- Retrospective review of patients with resection of tarsal coalition at our institution who had interposition of umbilical cord plus amniotic membrane tissues at the site of the resection
Methods

• Postoperative data collection included:
  • Pain using VAS scores
  • Foot Function Index scores
  • Radiographic review with CT scan
    • Presence of degenerative changes or significant bony overgrowth was considered a recurrence
  • Assessment of hindfoot ROM was noted on physical exam at last follow-up visit
Table 1

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n = 14</th>
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<tbody>
<tr>
<td>Male</td>
<td>8</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
</tr>
<tr>
<td>Median age</td>
<td>28.5 years</td>
</tr>
<tr>
<td>Calcaenonavicular coalitions</td>
<td>7</td>
</tr>
<tr>
<td>Talonavicular coalitions</td>
<td>7</td>
</tr>
<tr>
<td>Average follow-up</td>
<td>18 months (9-32 months)</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Analogue Pain Assessment</strong></td>
<td>Improved by 89.75%</td>
</tr>
<tr>
<td><strong>Infection/wound complications:</strong></td>
<td>None reported</td>
</tr>
<tr>
<td><strong>Foot Function Index Score:</strong></td>
<td></td>
</tr>
<tr>
<td>Median Postoperative Score</td>
<td>46 (range 30-110)</td>
</tr>
<tr>
<td>Range of motion</td>
<td>Improved in 64% of patients</td>
</tr>
<tr>
<td><strong>Radiologic review</strong></td>
<td></td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>14% (2)</td>
</tr>
<tr>
<td>Recurrence</td>
<td>28% (4)</td>
</tr>
</tbody>
</table>
Conclusion

- Based on radiological and functional outcomes at an average 19 month follow-up, umbilical cord tissue interposition after tarsal coalition resection appears to be a viable treatment option.

- No adverse reactions were found and recurrence rate was noted to be 29%.
References


