Endoscopic resection of different types and sites of talocalcaneal coalition.

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Introduction

- TCC is the most common type of tarsal coalition that causes hindfoot pain with incidence between 1% and 6%.\textsuperscript{1,2,3} 

- CT remains the standard in diagnosis and classification.\textsuperscript{4,1} 

- Open surgery has many disadvantages, such as risk of wound dehiscence, delayed wound healing\textsuperscript{5}, incisional neuroma formation\textsuperscript{6}, inadequate exposure of the posteromedial aspect.
Purpose and hypothesis

Purpose: to describe the technique of endoscopic resection of TCC by using 2 posterior portals and to report the outcomes of endoscopic resection of different types and sites of TCC.

We assume; by using 2 posterior portals, with retraction of the flexor hallucis longus (FHL), it would be possible to approach and visualize the medial aspect of the subtalar joint.
Methods

- The cases of 20 feet with TCC for which non-operative treatment had failed. Treated by endoscopic resection using 2 posterior portals.
- The patients were divided into groups according to the site of the coalition (middle facet or posterior facet) and according to type (fibrous, cartilage, or bony).
- The mean follow-up period was 26 months (range, 6-36).
Methods

- In prone position; use PL & PM portals.
- Identify the posterior joint lines of the ankle and subtalar joints.
- Excise the os trigonum or Stieda process (if present)
- Release of the FHL retinaculum.
- Retract the FHL tendon using a nylon tape from the PM portal
Methods

- Shave the PM corner of the subtalar joint to make working room.
- Switch the portals. The scope rests over the FHL, protecting the neurovascular bundle, and the shaver directs laterally.
The portals were switched again to confirm that the very anterior end of the coalition.

- shave off subarticular bone more than the articular surface by 2 mm (cartilage lipping) and then use a radiofrequency blade over the subarticular bone to prevent recurrence.
### Results

<table>
<thead>
<tr>
<th>Items</th>
<th>Studied groups</th>
<th>Fib (5)</th>
<th>Cart (6)</th>
<th>Bony (8)</th>
<th>Mixed (1)</th>
<th>Significant test</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-operative</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AOFAS mean +SD</td>
<td></td>
<td>42.2±1.7</td>
<td>46.5±1.6</td>
<td>52.6±2.1</td>
<td>48</td>
<td>F=32</td>
<td>&lt;0.05*</td>
</tr>
<tr>
<td><strong>Post-operative</strong></td>
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<td></td>
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<tr>
<td>AOFAS mean +SD</td>
<td></td>
<td>96.8±1.6</td>
<td>90.6±1</td>
<td>85.7±1.4</td>
<td>87</td>
<td>F=69</td>
<td>&lt;0.05*</td>
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</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>Items</th>
<th>Studied groups</th>
<th>Middle (13)</th>
<th>posterior (7)</th>
<th>Significant test</th>
<th>p.value</th>
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<tbody>
<tr>
<td><strong>Pre-operative</strong></td>
<td>AOFAS</td>
<td>48.2±5.2</td>
<td>47.7±3.9</td>
<td>t=0.03</td>
<td>0.9</td>
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<td>mean ±SD</td>
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<tr>
<td><strong>Post-operative</strong></td>
<td>AOFAS</td>
<td>88.8±4.7</td>
<td>90.4±4.9</td>
<td>t=0.8</td>
<td>0.8</td>
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<tr>
<td>mean ±SD</td>
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</tbody>
</table>
Discussion

- Preoperative assessment of the morphology of coalition and the subtalar joint plays an important role in selecting which patients would be expected to benefit more from resection.

- Resection of TCC only in cases with calcaneovalgus is not recommended by the authors, because it may lead to more deformity; it should be combined with other techniques for deformity correction.
Conclusion

- Endoscopic resection of TCC was an effective and useful method for the treatment of talocalcaneal coalition.
- It provided excellent outcomes with no recurrence in these short term results.
- Resection of the fibrous type had better outcomes than resection of cartilage and bony types.
- Endoscopic resection of a posterior coalition had better outcomes than resection of a middle-facet coalition.


