Evidence Table

Clinical Area: Subtalar arthroereisis for flexible flatfoot

Study Type: Case series.
Study Aim: To present the results of subtalar arthroereisis using the Kalix endorthesis in the surgical correction of flatfoot in adults caused by posterior tibial tendon dysfunction.

Outcomes
- **Primary:** improvement in American Orthopedic Foot and ankle society (AOFAS) Hindfoot scale.

Design
- **Number of subjects:** N=21 patients
- **Description of study population:** The study included adult patients with flexible flatfoot deformities caused by posterior tibial tendon dysfunction, who underwent surgical treatment between 1999 and 2000, using the Kalix endorthesis. Their age ranged from 20 to 76 years with a mean of 55.8 years, and 71% were women.
- **Inclusion criteria:** Age >18 years, with stage II posterior tibial tendon dysfunction, according to Johnson and Strom who underwent surgical treatment between July 1999 and December 2000.
- **Exclusion criteria:** Overweight, prior surgical treatment of the hindfoot, neuropathic foot and osteoarthritic foot
- **Consecutive patients:** Probably.
- **Intervention:** The surgical repair of the tendon was first performed, and then the Kalix endorthesis implanted, suture closed, and below knee compression cast applied.
- **Source of outcome data:** Patients were followed up with Radiography, the American Orthopedic Foot and ankle society (AOFAS) Hindfoot scale, and patient assessment questionnaire
- **Length of follow-up:** Follow-up duration ranged from 19-36 months with a mean of 23.7 months.
- **Completeness of follow-up:** 90% complete.

Validity
- **Is the study type appropriate for the question(s) being asked?** No, a randomized controlled study would be more appropriate.
- **Were patients similar with respect to baseline characteristics?** For the indication for surgery. Other characteristics were not provided.
- **Was the intervention and other aspects of patient care similar for all patients (or for all patients in a defined subgroup)?** Yes.
- **Was the process of observation likely to affect the outcome?** The study was not blinded, which could bias subjective outcomes.
- **Did an objective observer assess outcomes and were outcome measurements consistent?** The study was conducted by one surgeon in a single center.

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• Was follow-up duration appropriate? Probably.

Conclusions regarding validity of methods:

The study was a case series with no comparison or control group, and potential selection and observation bias. It however had the advantage of defining the inclusion/exclusion criteria and outcomes.

Results:

<table>
<thead>
<tr>
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<th>Preoperative</th>
<th>Postoperative</th>
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<tbody>
<tr>
<td>AOFAS Hindfoot Scale scores</td>
<td>47.2</td>
<td>81.6</td>
</tr>
<tr>
<td>Pain (average score)</td>
<td>16.3</td>
<td>31.6</td>
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<tr>
<td>Foot and ankle function</td>
<td>28.7</td>
<td>41.6</td>
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</table>

Radiographic imaging showed an average reduction in the Moreau-Costa-Bartini angle of 14.3° and average reduction in the talocalcanean deviation, Kite’s angle of 8.7°

Complications

MBA removed* due to postoperative pain  2/19 (10.5 %)

* At 18 months after the procedure

Authors’ Conclusions:

The authors concluded that subtalar arthroereisis using Kalix endorthesis in the sinus tarsi after correction of the deformity and tendon repair, offers an alternative to bone operations in patients with stage II posterior tibial dysfunction.

Reviewer’s Conclusions:

The study was a small case series with no control or comparison group, and potential selection and observation bias. The authors provided data showing some postoperative improvement, but did not perform any statistical analysis.