The painful total ankle replacement: a diagnostic and treatment algorithm

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Introduction

- The last decade has seen a considerable increase in the use of total ankle arthroplasty (TAA) to treat patients with end-stage arthritis of the knee.

- The longevity of the implants is still far from that of total knee and hip arthroplasties.

- The aim of this review is to outline a diagnostic and treatment algorithm for the painful TAA to be used when considering revision surgery.
Some of the most important questions when investigating a patient with a painful total ankle arthroplasty

<table>
<thead>
<tr>
<th>Extended history</th>
<th>Pain</th>
<th>Psychological assessment</th>
<th>Physical examination standing-sitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>- When did the pain start?</td>
<td>- Where is the pain located?</td>
<td>- Psychiatric conditions (depression, alexithimia)</td>
<td>- Inspection (swelling, redness, alignment)</td>
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<tr>
<td>- What exams/tests have been done already?</td>
<td>- When does the pain occur? (weightbearing, night, 24/7)</td>
<td>- Recent life-changing events (divorce, death, unemployment)</td>
<td>- Palpation (trigger points, bones/soft tissues, etc)</td>
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<td>- What implants have been used?</td>
<td>- Type of pain</td>
<td></td>
<td>- Range of movement (active/passive)</td>
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<td>- Comorbidities (diabetes, neuropathies, spine pathologies, inflammatory arthropathies)</td>
<td>- Intensity of pain</td>
<td></td>
<td>- Stability</td>
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<tr>
<td>- Social, recreational, occupational activities</td>
<td>- Duration</td>
<td></td>
<td>- Sensation, strength, pulses (painful neuromas, etc)</td>
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<td></td>
<td>- Aggravating/ameliorating factors</td>
<td></td>
<td>- Chronic regional pain syndrome</td>
</tr>
</tbody>
</table>
Algorithm

Loosening subsidence bone cysts malalignment

Yes
Infection?

Bloodwork aspiration biopsy

No infection
Obtain CT scan for bone stock assessment

One-stage revision Fusion permanent cement spacer

No
Where is the problem?

Extra articular
Intra articular
Not sure

CRPS likely

Yes
CT scan

No

Exclude infection
Bloodwork aspiration biopsy

Can exclude infection?

Diagnosis made?

No
Diagnostic arthroscopy

Yes
Treat accordingly

Two-stage revision Permanent cement spacer Fusion Amputation

Relief
Arthroscopic debridement

No relief

Not sure

Gutter impingement Arthrofibrosis

Exclude infection

Neuritis CRPS Spine Comorbidities Tendons*

Treat accordingly

Local anesthetic diagnostic injection

Lidocaine diagnostic injection: suspect posterior tibial tendon in neutral or flatfoot, peroneal tendons in cavus foot, and FHL if posterior impingement.

Chronic pain management
Conclusion

- The painful TAA is difficult to evaluate, particularly in the hands of less experienced surgeons.

- We present an algorithm to help surgeons make appropriate decisions when managing these difficult problems.
Thank You