Long Term Outcomes Of Patients Following Syme’s Amputation

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Disclosures

• Elissa S. Finkler MD, Daniel A. Marchwiany MD, and Michael Pinzur MD have no disclosures
• Adam P. Schiff- Disclosures: Stryker, Sonoma, RTI
Introduction

• Syme’s amputation includes disarticulation of ankle and designed as alternative to transtibial amputation
• Compared to transtibial amputation, Syme’s amputation creates more comfortable and functional stump
• Syme’s creates a prosthetic socket that acts as a suspension for prosthesis
Purpose

• Report information on long term follow-up of patients post Syme’s amputation
• Evaluate indications, functional assessment, need for further surgery, and ability to ambulate in a cohort of patient greater than 2 years post Syme’s procedure
• Use of objective data rather than opinion and controversy to allow surgeons and patients to make a more informed decision when choosing appropriate treatment
Methods

• Retrospective chart review to identify patients over the last 13 years who underwent single stage Syme’s amputation by a single surgeon (MP)
• Living patients asked to complete a Short Musculoskeletal Functional Assessment (SMFA) questionnaire
• Two sided t tests calculated for independent means using SAS software using $\alpha = 0.05$
Results

- 51 patients identified; 33 underwent procedure for diabetic midfoot infection and 18 for non-diabetic indications including 11 crush injury, 3 non-diabetic infections, 3 non-correctable acquired deformities, 1 neoplasm.
- Demographics of population shown in Table 1. Mean follow-up 6.8 years for diabetics and 9.3 years for non-diabetics.
- Of 33 living patients, 11 completed the SMFA, with results shown in Table 2.
- No significant differences between diabetic and non-diabetic outcomes.
Table 1- Demographics of Population

<table>
<thead>
<tr>
<th></th>
<th>Diabetics (N=33)</th>
<th>Non-Diabetics (N=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at Procedure (range)</td>
<td>62.1 yrs. (36-81 yrs.)</td>
<td>37.7 yrs. (21-65 yrs.)</td>
</tr>
<tr>
<td>Mean years of follow-up (range)</td>
<td>6.8 yrs. (4.0-11.6 yrs.)</td>
<td>9.3 yrs. (2.2-24.9 yrs.)</td>
</tr>
<tr>
<td>Deceased at time of Review (%)</td>
<td>17/33 (51.5%)</td>
<td>1/18 (5.5%)</td>
</tr>
<tr>
<td>Mean time to death post Syme’s amputation</td>
<td>4.9 years</td>
<td>0.2 years</td>
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<tr>
<td>Conversion to transtibial amputation (%)</td>
<td>4/33 (12.1%)</td>
<td>1/18 (5.5%)</td>
</tr>
</tbody>
</table>
### Table 2- SMFA Indicies for Population

<table>
<thead>
<tr>
<th></th>
<th>Group (N=11)</th>
<th>Diabetics (N=6)</th>
<th>Non-Diabetics (N=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Mobility Score</td>
<td>26.8 (20.8)</td>
<td>34.7 (19.9)</td>
<td>17.2 (19.4)</td>
</tr>
<tr>
<td>(SD)</td>
<td></td>
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<tr>
<td>Functional Index</td>
<td>22.9 (19.7)</td>
<td>29.9 (26.1)</td>
<td>14.7 (17.6)</td>
</tr>
<tr>
<td>(SD)</td>
<td></td>
<td></td>
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<tr>
<td>Bothersome Index</td>
<td>24.2 (22.7)</td>
<td>30.6 (24.0)</td>
<td>16.7 (20.8)</td>
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<tr>
<td>(SD)</td>
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Discussion

• Published experiences with complications and conversion to higher level amputation inconsistent in literature
• Current study provides patient characteristics, follow-up on subsequent procedure, and reports functional and mobility assessments using validated SMFA questionnaire
• Current investigation refutes notion of high complication rates and high conversion rates to transtibial amputation
Discussion Continued

- Syme’s amputees report favorable functional, mobility, and bothersome indices
- Limitations of present study include retrospective nature, small number of patients, no follow-up gait analyses or personal assessment of patient population
Conclusion

• Objective information derived in study confirms that patient post Syme’s amputation have low complication rates and low conversion rates to transtibial amputation.

• Diabetic vs non-diabetic indication does not influence functional outcome results.

• SMFA results confirm that Syme’s amputees achieve excellent levels of functional independence.
References