Arthroscopic Transosseous versus Transosseous –equivalent Rotator Cuff Repair: A Prospective Cost and Outcome Analysis

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Disclosures

- Adam J. Seidl - Nothing to disclosure
- Nicholas J. Lombardi - Nothing to disclosure
- Mark D. Lazarus - Tornier: IP royalties, Paid consultant, Paid presenter or speaker, Research support, Stock or stock Options
- Eric M. Black - Nothing to Disclose
- Mitchell G. Maltenfort - Nothing to Disclose
- Matthew D. Pepe - Stryker: Paid consultant
Introduction

- The incidence of arthroscopic rotator cuff repair continues to rise.
- Facility reimbursements for rotator cuff repair have decreased.
- Techniques to make the procedure more cost effective are warranted.
Objective #1

- To investigate the cost-savings, surgical time and outcomes associated with arthroscopic anchorless (transosseous – TO) rotator cuff repair when compared to the more commonly performed anchor-based (transosseous-equivalent – TOE) method.
Arthroscopic TO rotator cuff repair can be performed at a lower cost than arthroscopic TOE rotator cuff repair without increasing operative time or compromising short-term outcome.
Twenty-one consecutive patients that underwent a TO rotator cuff repair (RCR) were prospectively enrolled and matched according to tear size and concomitant procedures to patients that underwent a TOE RCR.
The implant cost as well as the case length for both the TO group and TOE group were obtained and compared between the groups.
Outcome measures including VAS, SANE, and SST were evaluated at 3 months and 6 months and compared between the TO and TOE groups.
Cost Analysis:

- The implant cost for the TO group was significantly less than that of the TOE group for all tear sizes and independent of concomitant procedure.
  - Overall, the TOE group implant cost is $858.03 ± 97.52 more expensive than the TO group (p<0.0001).

- Figure 1
Results

Figure 1: Implant cost for TO and TOE procedures grouped by tear size.
Operative time (cut to close time):

- For the TO group, the mean operative time was 82.38 minutes (SD 24.09).
- For the TOE group the mean operative time was 81.71 minutes (SD 17.27).
- Controlling for all other factors, the TOE group operative time was 3.31 minutes shorter, but this difference was NOT significant (p=0.677)
Results - Outcome

Outcome Scores

- There was no significant difference in pre-operative VAS ($p=0.93$), SANE ($p=0.35$), and SST ($p=0.36$) scores when comparing the TO and TOE groups.

- At 6 months both groups showed significant improvement in VAS, SANE, and SST scores.

- There was no significant difference in outcome scores between TO and TOE groups at all time points.
### Results - Outcome

<table>
<thead>
<tr>
<th></th>
<th>BASELINE</th>
<th>3 MONTH</th>
<th>Baseline to 3 month</th>
<th>6 MONTH</th>
<th>Baseline to 6 month</th>
<th>TO vs TOE at all time points</th>
</tr>
</thead>
<tbody>
<tr>
<td>SST</td>
<td>TO</td>
<td>4.76</td>
<td>5.79</td>
<td>p = 0.073</td>
<td>8.53</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>TOE</td>
<td>3.88</td>
<td>5.27</td>
<td></td>
<td>8.46</td>
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<tr>
<td>VAS</td>
<td>TO</td>
<td>5.74</td>
<td>3.23</td>
<td>p &lt; 0.0001</td>
<td>2.60</td>
<td>p &lt; 0.001</td>
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<tr>
<td></td>
<td>TOE</td>
<td>5.75</td>
<td>3.77</td>
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<td>2.03</td>
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<td>SANE</td>
<td>TO</td>
<td>51.4%</td>
<td>56.9%</td>
<td>p = 0.0119</td>
<td>79.0%</td>
<td>p &lt; 0.001</td>
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<td>TOE</td>
<td>44.7%</td>
<td>64.8%</td>
<td></td>
<td>78.9%</td>
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</tbody>
</table>

Table 2: Outcome scores (SST, VAS, SANE) at baseline, 3 months and 6 months for both TO and TOE groups.
Arthroscopic transosseous (TO) rotator cuff repair provides significant cost savings when compared to tear-size matched arthroscopic transosseous-equivalent (TOE) repair.

There was no significant difference in case length observed between groups.
Conclusion

- TO repair provided equivalent outcomes when compared to TOE

- At 6 months both groups showed significant improvement in VAS, SANE, and SST scores.

- There was no significant difference in outcome scores between TO and TOE groups at all time points
The Arthroscopic transosseous (TO) technique should be considered and may have an important role in the future with the evolving health care environment and changes in reimbursement patterns.
Thank you