Subcutaneous and submuscular transposition due to ulnar nerve entrapment at the elbow – analyses of 43 primary and 44 revision cases

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Aim: To study outcome after subcutaneous and submuscular transposition of the ulnar nerve due to entrapment (UNE) and to identify predictors of revision surgery.

Conclusion:
- Satisfaction rate is 73-86% after revision transposition surgery.
- Co-morbidity, with systemic disease, musculoskeletal conditions and concomitant CTS, leads to higher risk for UNE relapse and revision surgery.

Methods:
Retrospective study of all UNE cases treated with transposition surgery (years 2004-2008) at the Department of Hand Surgery, Skåne University Hospital, Malmö, Sweden. Medical records and electrophysiological evaluations were reviewed and analyzed. Postoperative outcome was graded based on patient-reported/surgeon-evaluated outcome.

Electrophysiologic examination was performed in 47-64% of all transposition cases preoperatively. Primary transposition surgery cases had a tendency to have more severe impact on nerve function (nerve conduction block or axonal degeneration). Revision surgery cases had normal electrophysiological findings or reduced conduction velocity (p=0.10).

Both primary (79%) and revision SMT (76%) cases had high frequency of ulnar nerve subluxation. Satisfactory rate was 79-93% after primary and 73-86% after revision transposition surgery.

Results:
Even distribution of age and gender. 73-95% of all cases had a heavy blue-collar type of work. Revision surgery cases had a higher frequency of concomitant systemic diseases (p<0.001), musculoskeletal conditions (p=0.029) and CTS (p=0.048) compared to primary surgeries.

<table>
<thead>
<tr>
<th></th>
<th>Primary SCT n=43</th>
<th>Revision Transpositions n=44</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>38.0 (24.0-66.0)</td>
<td>46.5 (33.0-78.0)</td>
<td>0.92</td>
</tr>
<tr>
<td>Male</td>
<td>7 (47)</td>
<td>16 (57)</td>
<td>0.20</td>
</tr>
<tr>
<td>Healthy</td>
<td>8 (53)</td>
<td>12 (43)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Musculoskeletal disease</td>
<td>4 (27)</td>
<td>5 (14)</td>
<td>0.029</td>
</tr>
<tr>
<td>CTS concomitant</td>
<td>5 (33)</td>
<td>7 (26)</td>
<td>0.048</td>
</tr>
</tbody>
</table>

It is clinically important to assess ulnar nerve subluxation tendency after primary simple decompression surgery. If present, we suggest to transpose the ulnar nerve in the same surgical session to optimize outcome and minimize need of revision surgery.

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