Strickland’s hypothenar fat pad flap for revision surgery in carpal tunnel syndrome: Prospective study of 34 cases


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The authors do not have conflict of interest.

Introduction

- Revision surgery for failed carpal tunnel release: low incidence (~10%)
- Fibrous adhesions around median nerve.
- Fibrous scar tissue of flexor retinaculum: median nerve trapped
- Simple neurolysis: not enough
- Protect nerve: barrier against adhesions.
- Several surgical options

Surgical technique: median nerve neurolysis with hypothenar fat pad flap

Palm wrist skin incision ulnarily to the scar of the previous.

- The scarred median nerve is adherent to the deep part of the flexor retinaculum (perineural fibrosis of the median nerve)
- The hypothenar fat is raised by subcutaneous dissection in the ulnar direction.
- The hypothenar fat pad flap has been harvested from the ulnar side.

MATERIAL AND METHOD

- Monocentric Prospective Study
- March 2006 - April 2014
- 6 senior surgeons
- Same surgical procedure
- 34 cases: 19 Men, 15 Women
- Mean age: 67 years (36-91)
- Hand injured: dominant Hand = 65%
- Tobacco consumption: 44%
- Type 2 Diabetes: 12%

Results

Follow-up: 24 months (34/34 patients) and 60 months (13/34 patients)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Pre-op</th>
<th>FU 24 months</th>
<th>FU 36 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nerve sensibility</td>
<td>34/34</td>
<td>24/24</td>
<td>13/13</td>
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<tr>
<td>VAS (10)</td>
<td>34/34</td>
<td>24/24</td>
<td>13/13</td>
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<tr>
<td>Grip strength (Jamar®)</td>
<td>Not applicable</td>
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<tr>
<td>SQPD</td>
<td>34/34</td>
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<td>Thelen atrophy</td>
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EVA 0.3 : 85%
DNA4 : 4.6%

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<th>FU 24 months</th>
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<tr>
<td>Nerve sensibility</td>
<td>60/60</td>
<td>57/57</td>
<td>4/4</td>
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FU 60 months : 13 patients
Similar results FU 24 months

EMG FU 24 months : 4 patients
Distal Latency normal
Nerve Conduction Velocity normal

Satisfaction
- Excellent = 13
- Good = 12
- Fair = 9
- MacKinnon-Dellon scale
- 53% = 12
- 54% = 6

Complications
- Peroperative complications: 0
- Infection: 0
- Complex Regional Pain Syndrome: 0
- Hypertrophic scar: 0
- Reoperations: 0

Discussion

The Hypothenar Fat Pad Flap for Management of Recalcitrant Carpal Tunnel Syndrome

Strickland J.W., and al.
(J Hand Surg 1996;21A:840-848)

Multiple transverse branches arising from the ulnar artery in Guyon’s canal to provide a rich plexus to the hypothenar fat pad flap.

The hypothenar fat pad flap is turned across like the page of a book and used to cover the median nerve (arrow).

The hypothenar fat pad flap is rotated to cover the median nerve.

POST OP CARE:
- Early active mobilisation
- After 2 weeks, physiotherapy if necessary.

- Patient Inclusion Criteria:
  - Failed primary carpal tunnel surgery (Open in 87%; and Endoscopic in 19%)
  - Recurrent carpal tunnel syndrome (nordural perineuritis) = 34 patients
  - Neuropathy signs (burning or freezing pain, itching, electric shock sensation) = 24 patients
  - Electromyographic anomalies (Distal Latency and Nerve Conduction Velocity)
  - Multidisciplinary consultation

- 1 reviewer: independent
- Pre- and Post-operative Evaluation:
  - Nerve sensibility and Neuropathy signs
  - VAS (D-10)
  - Grip Strength (Jamar®)
  - SQPD (mm) and tactile hypoesthesia
  - Thelen atrophy
  - Fullbord Score (DNA4/DNA4)

References

- Athlani L., Lecomte F., Charbonnel S., Claise J.M., Stussi J.D., Cassio J.B., Haloua J.P. (1)
- Strickland J.W., and al. (J Hand Surg 1996;21A:840-848)
- DNA4/DNA4
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