Treatment of the hook-nail deformity

Vascularized nail flaps

Christian Dumontier
Institut de la main & hôpital saint Antoine, Paris
(with help of P. Valenti)
Hook Nail

Nail deformity due to the curvature of the nail bed after either bone loss or pulp destruction or retraction.
Prevention of hook-nail deformity necessitates the reconstruction of the nail plate supportive structures.
THE ONLY POSSIBLE TREATMENT IS SURGICAL
Many techniques

- Nail flap recession: Dufourmentel
- Nail support with cross-finger flap: Atasoy
- Island flap: Gilbert, Tubiana
- Microvascular reconstruction: Morrison
Bone Reconstruction

- Free bone graft: Tubiana, Gilbert
- Vascularized bone: Gargollo
- Phalangeal osteotomy: Shepard
Nail recession: Dufourmentel 1963

Variation of Foucher
Island flap reconstruction
RESULTS

28 patients

- 1/3 excellent
- 1/3 good
- 1/3 poor

RESULTS ARE FUNCTION OF THE BONE LOSS
MICROSURGICAL NAIL RECONSTRUCTION

1980  W.A MORRISON  wrap-around flap

1980  G. FOUCHER   wrap-around modified

1988  KOSHIBA  
free arterialized nail  flap
MICROSURGICAL NAIL RECONSTRUCTION

1990 NAKAYAMA

arterialized venous nail flap
MICROSURGICAL NAIL RECONSTRUCTION

1996 ENDO
short pedicle_arterialized nail flap

1997 HIRASE
modified twisted-toe flap transfer
PATIENTS

- 1994 - 2000 18 patients
- Age: aver. : 26 y.o. (2 - 60)
- 10 males / 8 females
TIMING OF SURGERY

- Emergency 3 cases
- Secondary 15 cases

Average delay /16 months (6-50)
PATIENTS: 18 CASES

<table>
<thead>
<tr>
<th>Recipient site</th>
<th>thumb</th>
<th>index</th>
<th>middle</th>
<th>ring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Donor site</th>
<th>big toe</th>
<th>2nd toe</th>
<th>3rd toe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>
TYPE OF FREE NAIL TRANSFER

- Vascularized nail flap                     9
- Osteo onychocutaneous nail flap           7
- Arterialized venous nail flap              2
TYPE OF VASCULAR PEDICLE

Long pedicle vasc. nail flap   7
Short pedicle
vascularized nail flap   9
Arterialized venous nail flap  2
VERY DISTAL AMPUTATION
ARTERIALIZED VENOUS NAIL FLAP
RESULTS: 18 cases

- Average follow-up 3 years (1-6)
- 16 nail flaps survived completely
- 1 complete necrosis
- 1 partial necrosis
- 90% of patients satisfied
INDICATIONS

Are function of:

- Bone loss
- Pulp loss
- Finger or thumb
- Local vascularity