Resection Arthroplasty on Lessor Toe Deformity

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My disclosure is in the Final AOFAS Mobile App.
I have no potential conflicts with this presentation.
Introduction and Purpose

- With increasing age → Increase lessor toe deformity
- 2nd Hammer toe is often combined with Hallux valgus
- IP fusion is first introduced 100 yrs ago, by Soule, Tx. For symptomatic Lessor toe deformity

- Hammer toe, Claw toe, Mallet toe, Curly toe
- Resection arthroplasty for correction of lessor toe deformity
- To evaluate the results & anything to pay attention
Materials & Method

- From 2000.1 To 2013.1
- 152 toes (116 Pt.) , More than f/u 12 months
- Except 60 toes (42 Pt.) MP resection arthroplasty due to RA or Gouty arthritis
- 92 toes (74 pt.) Mean age 50.9 yrs (22~84)

* Hammer toe 44 toes (33 pts)
* Curly toe 25 toes (14 pts)
* Mallet toe 16 toes (12 pts)
* Claw toe 7 toes (6 pts)

Concomittent Dz.

- Hallux valgus
- Pes Planus
- Cavus

Total

- Hammer toe 48%
- Curly toe 27%
- Mallet toe 17%
- Claw toe 8%
Materials & Method

- PIP 69 toes (75%), DIP 23 toes (25%)

- Co operation
  Flexor tenotomy: 16 toes
  Weil osteotomy: 10 toes
  EDL lengthening: 6 toes
Materials & Method

- AOFAS score Hallux Metatarsophalangeal-Interphalangeal scale
- Subjective satisfaction
  Excellent, Good, Fair, Poor

- Alignment
  - Fore foot Wt bearing AP
    Excellent 0°~5°, Good 6°~10°
    Fair 11°~15°, Poor >15°
  - Fore foot Wt bearing lat
    Excellent 0°~10°, Good 11°~20° Fair 21°~30°, Poor >30°

- Length difference
Result (Clinical)

- **Subjective satisfaction**
  - Excellent 19 (26.8%), Good 42 (59.2%), Fair 10 (14.1%)

- **AOFAS score** 87.4

- **Complication**
  - Floating toe 4 cases
  - Reverse mallet toe 1 case
  - Chronic swelling 1 case
  - Floppy toe 1 case
  - Recurr (Re-operation) 2 case
### Result

<table>
<thead>
<tr>
<th>92 toes</th>
<th>Subjective satisfaction (%)</th>
<th>AOFAS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hammer toe (44)</td>
<td>83.9</td>
<td>86.3</td>
</tr>
<tr>
<td>Claw toe (7)</td>
<td>90.9</td>
<td>86</td>
</tr>
<tr>
<td>Mallet toe (16)</td>
<td>76.9</td>
<td>85.7</td>
</tr>
<tr>
<td>Curly toe (25)</td>
<td>100</td>
<td>91.6</td>
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<table>
<thead>
<tr>
<th>92 toes</th>
<th>Subjective satisfaction (%)</th>
<th>AOFAS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>with concomitant Disease</td>
<td>80.6</td>
<td>86.5</td>
</tr>
<tr>
<td>without concomitant Disease</td>
<td>93.3</td>
<td>88</td>
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<table>
<thead>
<tr>
<th>Alignment</th>
<th>Fore foot Wt bearing</th>
<th>Total (92)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent 0°~5°</td>
<td>45 toes (48.9%)</td>
<td></td>
</tr>
<tr>
<td>Good 6°~10°</td>
<td>26 toes (28.3%)</td>
<td></td>
</tr>
<tr>
<td>Fair 11°~15°</td>
<td>17 toes (18.5%)</td>
<td></td>
</tr>
<tr>
<td>Poor &gt;15°</td>
<td>4 toes (4.3%)</td>
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Alignment | Fore foot Wt bearing lat | Total (92) |
<table>
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<tbody>
<tr>
<td>Excellent 0°~10°</td>
<td>37 toes (40.2%)</td>
<td></td>
</tr>
<tr>
<td>Good 11°~20°</td>
<td>32 toes (34.8%)</td>
<td></td>
</tr>
<tr>
<td>Fair 21°~30°</td>
<td>12 toes (13%)</td>
<td></td>
</tr>
<tr>
<td>Poor &gt;30°</td>
<td>11 toes (12%)</td>
<td></td>
</tr>
</tbody>
</table>
Result (Radiological)

- **Bony ankylosis at last f/u**
  
  4 case
  
  (2 case arthrodesis, 2 case spontaneous union)

- **Length difference**
  
  average 3.1 mm

- **Curly toe (P<0.05)**
  
  AOFAS score, Subjective satisfaction
  
  Kruskal-Wallis H test

- **Without concomitant dz. (P<0.05)**
  
  subjective satisfaction
  
  Mann–Whitney U test
Discussion

- Lessor toe deformity Correction
  - Arthrodesis
  - Smart toe memory clip device
  - Resection arthroplasty

- 92 toes (74 cases) with concomitant op 33 cases --- General ane
  without concomitant op  41 cases--- Local ane
- Op time 10~ 15 min.
- Temporary K-wire fixation for 4 weeks
- Complication
  - Floating toe : taping, co-operation of MPJ
  - Recurrence : reoperation (arthrodesis)
  - Floppy toe: 5.7 mm resection
  - Reverse malle toe : middle phalanectomy
  - Chronic swelling
Conclusion

• Resection arthroplasry
  - Easy
  - Excellent correctability
  - High Pt's satisfaction

• Pay more attention with co-operation

• Curly toe : Excellent result
References


