Surgical correction of Hallux Valgus complicated with adult type Pes planus

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

H.V and Adult type pes planus

- Still unclear correlation
- No relationship
- But...
  - PTTD $\rightarrow$ foot pronation, hindfoot valgus
  - If 1st ray hyper-mobility coexists, H.V can be occurred / aggravated.

- A retrospective study to introduce the availability of

  ‘Surgical correction of Hallux Valgus complicated with adult type pes planus’

with calcaneal medial sliding osteotomy

Materials & Method

• From Jan, 2008 ~ Dec, 2013, Minimum follow-up: 1 year
• 20 feet from 19 patients
• Exclusion criteria
  1) Young age (<18 years old)
  2) Systemic inflammatory ds.
  3) Predisposing trauma → amputation, malunion
• Mean age: 44.50±17.13 (M : F = 4 : 15), Mean follow-up: 19.30±17.02 months
• Main Symptoms
  - Bunion pain, 2nd toe over-riding and 2nd IPK
  - Posteromedial hindfoot pain on weight bearing
• Osteotomy for H.V correction: PCMO + Akin (13), PCMO alone (5), Scarf (2)
• Osteotomy for pes planus correction: Calcaneal medial sliding osteotomy (20)
• Combined Surgeries: 2nd Weil osteotomy (5), MBO (1), S.E.R.I (2), Kidner op (1)
Materials & Method

• Radiologic outcome assessment

1. Hallux Valgus Angle (HVA)
2. Inter-metatarsal ankle (IMA)
3. Distal metatarsal articular angle (DMAA)
   for degree of *H.V. correction*

4. Degree of shortening (Relative method)
5. Tarso-1st metatarsal angle (Meary angle)
6. Calcaneal pitch angle (CPA)
   for degree of *Pes planus correction*

7. Hindfoot alignment angle (HAA)
8. Hindfoot alignment ratio (HAR) on hindfoot alignment images
   for degree of *Hind-foot valgus correction*

• Clinical outcome assessment: AOFAS Hallux scale, Postop complications
## Results

<table>
<thead>
<tr>
<th></th>
<th>Pre-operative</th>
<th>Post-operative</th>
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<tbody>
<tr>
<td><strong>HVA</strong></td>
<td>33.85±8.77°</td>
<td>8.40±5.29°</td>
</tr>
<tr>
<td><strong>IMA</strong></td>
<td>14.80±2.26°</td>
<td>4.20±2.54°</td>
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<tr>
<td><strong>DMAA</strong></td>
<td>12.41±10.06°</td>
<td>25.96±12.35°</td>
</tr>
<tr>
<td><strong>Meary angle</strong></td>
<td>-13.15±5.00°</td>
<td>-10.94±5.07°</td>
</tr>
<tr>
<td><strong>CPA</strong></td>
<td>12.86±3.73°</td>
<td>13.53±5.23°</td>
</tr>
<tr>
<td><strong>HAA</strong></td>
<td>16.17±5.56°</td>
<td>3.09±2.92°</td>
</tr>
<tr>
<td><strong>HAR</strong></td>
<td>0.14±0.06</td>
<td>0.41±0.17</td>
</tr>
<tr>
<td><strong>AOFAS score</strong></td>
<td>61.42±2.63</td>
<td>88.32±9.30</td>
</tr>
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Results

- Summary of operation / postop. care
  - Op. time: 45~60 min
  - Of 20 feet,
    General Anesthesia (12), Spinal Anesthesia (8)
  - Non wt. bearing in the cast for 6 weeks

- Degree of shortening: 2.74±2.44mm

- Post-operative complications
  1) Hallux varus (1) → 0.5°
  2) No infection, nonunion
  3) **No recurrence of hallux valgus**
Case F/52

Lt. bunion pain with posteromedial hindfoot pain on standing
Immediate postop. and POD 1yr 3months
Discussion

- **Postoperative recurrence after hallux valgus correction related to pes planus**
  1) Still unclear
  2) **(Our hypothesis)**
      Hindfoot valgus $\rightarrow$ foot pronation $\rightarrow$ **Increased pressure** on 1st MTP joint
      $\rightarrow$ Contributes to postop. Recurrence

- **Subjects in our study**
  1) H.V angle : $\geq 30^\circ$
  2) I.M angle : $\geq 13^\circ$
  3) HAA : $10^\circ$ $\sim$ $27.7^\circ$
  4) HAR : negative value d/t excessive valgus $\sim 0.2$

  $\rightarrow$ **Surgical Ix. for concurrent correction**
  1) HAA $\geq 10^\circ$, 2) HAR $\leq 0.2$

- **Limitations of our study**
  1) Not compared to the result of **solitary Hallux valgus correction group**
  2) **Retrospective** study design
  3) Short term follow up
Conclusion

• Concurrent correction of hallux valgus and adult type pes planus

with calcaneal medial sliding osteotomy

• An easy way to correct adult type pes planus

• Effective procedure to prevent postoperative recurrence of hallux valgus surgery
References


