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
  $\rightarrow$ 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>
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<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>
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<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>
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<tr>
<td><strong>HAR</strong></td>
<td>0.14±0.06</td>
<td>0.41±0.17</td>
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<tr>
<td><strong>AOFAS score</strong></td>
<td>61.42±2.63</td>
<td>88.32±9.30</td>
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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 → foot pronation → **Increased pressure** on 1st MTP joint
    → Contributes to postop. Recurrence

- Subjects in our study
  1) H.V angle : ≥ 30°
  2) I.M angle : ≥ 13°
  3) HAA : 10° ~ 27.7°
  4) HAR : negative value d/t excessive valgus ~ 0.2
    → **Surgical ix. for concurrent correction**
      1) HAA ≥ 10°
      2) HAR ≤ 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


