The one-stage Operative treatment for fourth brachymetatarsia with other deformities of hallux and lesser toes

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The one-stage Operative treatment for fourth brachymetatarsia with other deformities of hallux and lessor toes

Yusuke Nakamoto MD

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

63y.o. Female
Bunion pain
Severe left metatarsia

Hallux valgus deformity
HVA 30°  IMA 13°

The fourth metatarsal shortening about 15mm
Method

Osteotomy

Hallux valgus
Modified Mitchell osteotomy
Second and third metatarsals
Modified Helal osteotomy

Bone graft

Length of shortening in the first, second and third metatarsal 5mm
Method

Bone transplantation

Fixation utilized by titanium plate

The lengthening of on fourth metatarsals

10mm

Hardware of internal fixation
titanium plate and screws
Result
post operative Xp
Result

3 yrs. postoperatively

AOFAS score (lesser toe score)

<table>
<thead>
<tr>
<th></th>
<th>pre.</th>
<th>post.</th>
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</thead>
<tbody>
<tr>
<td>HVA</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td>IMA</td>
<td>13</td>
<td>8</td>
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</tbody>
</table>

AOFAS score: 45

HVA: 30

IMA: 13
Discussion

Operative procedure for brachymetatarsia

Callotasis

One-stage lengthening
## Advantage and Disadvantage

<table>
<thead>
<tr>
<th></th>
<th>Callotasis</th>
<th>One-stage lengthening</th>
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</thead>
<tbody>
<tr>
<td><strong>Bone graft</strong></td>
<td>Unnecessary</td>
<td>Necessary</td>
</tr>
<tr>
<td><strong>Bone Lengthening</strong></td>
<td>Longer</td>
<td>Limited</td>
</tr>
<tr>
<td><strong>Tendon Lengthening</strong></td>
<td>Unnecessary</td>
<td>Necessary</td>
</tr>
<tr>
<td><strong>Duration of therapy</strong></td>
<td>Longer</td>
<td>shorter</td>
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Operative procedure for this Case

Fourth brachymetatarsia
Hallux valgus deformity
Second and third metatarsal pain

Modified Mitchell osteotomy
Modified Helal osteotomy of the second and third metatarsals
Shortening in the 1st, 2nd, 3rd metatarsal 5mm
Bone graft from the second and third metatarsal

Bone transplantation of lengthening the fourth metatarsal
Lengthening of 10 mm of on fourth metatarsals with the internal fixation utilized by titanium plate and screws
Conclusion

- We performed one-stage operation with corrections of other deformities for elder patient of the fourth brachymetatarsia.
- This procedure provided a more satisfactory result without severe complications.
- This one-stage operation is so benefit of these patients and possible to obtain good corrections with any other deformity of the affected foot.