Rotated Insertion Metatarsal Osteotomy with Distal Soft Tissue Procedure for Severe Hallux Valgus Deformity

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My disclosure is in the Final AOFAS Program Book.
I have no potential conflicts with this presentation.
Hypothesis

Rotated Insertion Metatarsal Osteotomy with Distal Soft Tissue Procedure (January 2005-)

- Over 100 cases
- Over 16 months follow-up after postope.
- Better correction compare to other methods
- Additional arthroplasty of sesamoid complex
- Less complication & excellent satisfaction

Our new trial (Rotated Insertion Metatarsal Osteotomy)
Preliminary presentation 2010 AOFAS Summer Meeting in Washington DC
Indication

Hallux valgus angle (HVA) \( \geq 40^\circ \)
Intermetatarsal angle (IMA) \( \geq 15^\circ \)
*no severe instability of the 1st TM j.
*no DJD of the 1st MTP & the 1st TM j.

Contraindication

neuromuscular or vascular disorder, arthropathy
connective tissue disorder

Materials & Methods

Hallux valgus angle (HVA)
Intermetatarsal angle (IMA)
1st Metatarsal Gradient (1st MG)
AOFAS Hallux Scale

D-P view on W.B. HVA
Lateral view on W.B. IMA 1st MG
103 feet of 75 cases
66 female  9 male

Average age:  63.1 y.o.(35-73)

Adjunctive procedure:  60 toes of  49 feet
hammer toe  : 14 toes
lesser metatarsal osteotomy  : 37 feet
Tailar’s Bunion 34 feet  :  9 feet

Avg. follow-up period:  16.8 months
Rotated Insertion Metatarsal Osteotomy with distal soft tissue procedure

- Single dorsal skin incision
- Lateral release adductor hallucis tendon, lateral capsule, sup. & deep intermetatarsal ligament
- Arthroplasty of sesamoid complex (n=84)
- Medial exostectomy
- Tendon transfer (add. hallucis to capsule)
- Rotated Insertion metatarsal osteotomy
Rotated Insertion Metatarsal Osteotomy

**Materials & Methods**

**Left 1st metatarsal**

- **FIXATION**
  - Two lag screws
  - Locking Plate & Screws

- Remove one-third of triangular bone fragment at the proximal aspect

- Lateral shift (Abduction)
- Rotation (Supination)
Rotated Insertion Metatarsal Osteotomy

- Lateral shift
- Rotation (Supination)
- Insertion

Insertion
Lateral shift
Rotation (Supination)
Results

HVA 45.7° (±9.6°)
10.6° (±7.0°)

IMA 19.7° (±3.1°)
6.3° (±3.1°)

1st MG 21.1° (±3.5°)
22.5° (±3.5°)

AOFAS 48.7pts (±14.2)
88.1pts (±5.3)
Results

Case 1  66 y.o. female
- HVA: 46°
- IMA: 18°

- Bunionette
- 2nd hammer toe
- Oblique osteotomy
- Condyllectomy

Case 2  63 y.o. female
- HVA: 58°
- IMA: 16°

- HVA: 11°
- IMA: 6°
- HVA: 14°
- IMA: 8°
Results

Complication

- 1st Metatarsal Ext. 5 feet (4.9%)
  inadequate postoperative care
  (all cases fixed by only two screws)
  all followed under-correction & recurrence

- Superficial skin problem 8 feet (7.8%)

- Hallux varus 4 feet (3.9%)

- Recurrence 5 feet (4.9%)

- No severe complication & unsatisfactory results
Rotated insertion metatarsal osteotomy with distal soft tissue procedure works so much for severe hallux valgus.

The fixation at the site of the metatarsal osteotomy was much stronger because of the bony insertion as a puzzle and the locking plate.

However this series are even the mid-term results, the further more outcomes in detail are essential.