Clinical Outcomes of the Distal Metatarsal Osteotomy using Bio-compression Screw for Advanced Hallux Rigidus

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My disclosure is in the Final Program Book and in the AOFAS database

I have no potential conflicts with this presentation
Various osteotomy techniques for Advanced Hallux Rigidus

- Oblique osteotomy
- Modified chevron osteotomy
- Dorsal close wedge osteotomy
**Demographics**

- 32 cases (30 patients) of advanced hallux rigidus treated with **distal metatarsal wedge osteotomy using bio-compression screw**
- Coughlin & Shurnas class > grade 2
- Followed up for more than 2 years after op.
- Performed by one surgeon

- Age: mean 46.2yr
- Follow up: mean 2.8yr
- Sex (M/F): 12 / 20

- **Coughlin-Shurnas class.**
  - grade II: 10 cases
  - grade III: 18 cases
  - grade IV: 4 cases
Surgical procedure

Dorsal close wedge osteotomy
Temporary fixation (k-wire)
Surgical procedure

Multiple drilling & screw fixation

3mm bio-compression screw
Clinical & Functional results

- AOFAS hallux rating score: 48.5 → 88.3 points
- Patient’s satisfaction score: 94.6 points
- ROM of 1\\textsuperscript{st} MTP joint: Dorsiflexion 9.5° → 33.5°
- Period to return to running exercise: 3.8 months

Radiological results

- Interval of 1\\textsuperscript{st} MTP Joint space: 1.2mm → 3.5mm
- Period to union of osteotomy site: 10.4 weeks
- No case of subsequent fusion or additional op.
- No complication associated with bio-screw
Case

M / 52, Right big toe pain & LOM (3yr ago)

Preop.

Postop.
Conclusion

- Restoration of the first MTP joint motion
- Reliable pain relief
- Needlessness of hardware removal
- Joint preservation method

Distal metatarsal dorsal wedge osteotomy using bio-compression screw

→ One of effective treatment methods for advanced hallux rigidus
< References >

