Rotated Insertion Metatarsal Osteotomy with Distal Soft Tissue Procedure for Severe Hallux Valgus Deformity —Novel Procedure of the 1st metatarsal osteotomy—

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Introduction/Purpose: Hallux valgus deformity is recently a common disease involved in the foot and ankle and many procedures are recommended globally. However it is controversial about the operative treatment for severe hallux valgus. Many authors have reported the technical difficulties and various complications. We performed rotated insertion metatarsal osteotomy with the distal soft tissue procedure for severe hallux valgus deformity since January 2008. The purpose of this study is to evaluate the medium-term outcome of this procedure.

Methods: Two hundred thirty-two feet in 173 patients were enrolled in this study and followed them up for a mean of 44.5 months. The mean age at the operation was 64.5 years. Hallux valgus angle (HVA) and intermetatarsal angle (IMA) were measured. This procedure consists of the rotated insertion metatarsal osteotomy and the distal soft tissue procedure. This diaphysial longitudinal metatarsal oblique osteotomy was performed from proximally-medial site of the first metatarsal directed to distally-lateral site through the dorsal exposure. The tip of osteotomized proximal metatarsal was formed at the dorso-distal site to insert in the central intramedullary aspect of osteotomized distal metatarsal. The second triangular cut of one third of dorso-plantar thick was made about 10 to 15 mm length from the lateral tip of osteomized proximal metatarsal. The internal fixation was performed with locking plate with screws. As a result, osteotomized sites were locked each other such as a puzzle.

Results: The mean preoperative HVA and IMA were 43.8 degrees and 20.1 degrees. The mean postoperative HVA and IMA were decreased to 9.0 degrees and 6.1 degrees. AOFAS scores improved from 49.3 to 89.7. All cases were obtained complete union. Postoperative displacement was in 12 feet (5.2%) and followed under-correction (or recurrence). Overcorrection (hallux varus) occurred in 10 feet (4.7%). Wound healing was delayed in 21 feet (9.1%). In general, we found no severe complication and unsatisfactory result.

Conclusion: This procedure provided satisfactory result for severe hallux valgus deformity. Especially the rigid fixation at the site of metatarsal osteotomy was much stronger because of the insertion and locking plate. However the further more outcomes in detail are essential for longer term follow-up.

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