Long-term Follow-up of a Randomized Controlled Trial Comparing Scarf to Chevron Osteotomy in Hallux Valgus Correction

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Abstract

Background: Hallux valgus is one of the most common foot deformities. This long-term follow-up study compared the results of 2 widely used operative treatments for hallux valgus: the scarf and chevron osteotomy.

Methods: Conventional weight bearing anteroposterior (AP) radiographs of the foot were made for evaluating the intermetatarsal angle and hallux valgus angle. For clinical evaluation, the American Orthopaedic Foot & Ankle Society (AOFAS) rating system for the hallux metatarsophalangeal-interphalangeal scale was used together with physical examination of the foot. These data were compared with the results from the original study. The Short Form 36 questionnaire, the Manchester-Oxford Foot Questionnaire (MOXFQ), and a general questionnaire including a visual analog scale (VAS) pain score were used for subjective evaluation. The primary outcome measures were the radiologic recurrence of hallux valgus and reoperation rate of the same toe. Secondary outcome measures were the results from the radiographs and subjective and clinical evaluation. The response rate was 76% at the follow-up of 14 years; in the chevron group, 37 feet were included compared with 36 feet in the scarf group.

Results: Twenty-eight feet in the chevron group and 27 in the scarf group developed recurrence of hallux valgus ($P = .483$). One patient in the scarf group had a reoperation of the same toe compared with none in the chevron group ($P = .314$). Current VAS pain scores and results from the SF-36, MOXFQ, and AOFAS did not significantly differ between groups.

Conclusion: Both techniques showed similar results after 2 years of follow-up. At 14 years of follow-up, neither technique was superior in preventing recurrence.

Level of Evidence: Level II, randomized controlled trial.

Keywords: scarf osteotomy, chevron osteotomy, hallux valgus, recurrence

TMC Summary

- Study Design:
  - 14 year avg follow up of 73 bunion feet undergoing metatarsal osteotomy (37 feet with chevron osteotomy and 36 feet with scarf osteotomy)

- Findings:
  - 73% of the chevron group and 78% of the scarf group had radiographic evidence of deformity recurrence at 14 years

- Interpretation:
  - Correction of the bunion deformity with metatarsal osteotomy without appreciation of metatarsal frontal-plane rotation resulted in an unacceptably high recurrence rate at 14 years