

Minimally Invasive Osteotomy for Hallux Valgus: Assessment of residual forefoot pain

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Abstract

Study Design: Retrospective case series study.

Objective: To clarify residual pain and pertaining underlying mechanisms for patients with hallux valgus (HV), following modified minimally invasive osteotomy of the first metatarsus.

Summary of Background Data: Modified minimally invasive osteotomy of the first metatarsus is a new surgical method of HV treatment. However, there is a paucity of informative evidence on postoperative residue pain in forefoot.

Methods: Consecutive cases with HV undergoing modified minimally invasive osteotomy of the first metatarsus were enrolled in the study, from June 2019 to December 2019. Outcome measures included the hallux valgus angle (HVA), intermetatarsal angle (IMA), length of the first metatarsus, preoperative AOFAS (The American Orthopaedic Foot & Ankle Society) forefoot score and shortened length of the first metatarsus. Six months following surgery, patients were classified into 2 groups, pain and non-pain groups. Mann-Whitney test was used for inter-group differences. Binary logistic regression analysis was used for analyzing independent risk factors for residual pain after surgery with calculated odds ratio (OR) and 95% confidential interval (CI).

Results: A total of 50 consecutive patients were enrolled, including 47 females (94%) and 3 males (3%). The mean age was 57.88±9.49 years (range 34-85 years). There were 11 patients with unilateral deformity (n=5 left feet, n=6 right feet) and 39 cases with bilateral deformity. There was statistical inter-group difference, for postoperative length of the first metatarsus (p=0.003) and the shortened length of the first metatarsus (p<0.001). Binary regression analysis identified shortened length of the first metatarsus (OR, 4.201; 95% CI, 1.291 to 13.663; p=0.017) as independent determinants for residual forefoot pain.

Conclusion: The retrospective cohort study identifies shortened length of the first metatarsus as determinants for residual forefoot pain for patients undergoing modified minimally invasive osteotomy of the first metatarsus of hallux valgus.

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Abstract

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