

Angular Correction with Chevron-Akin Double Osteotomy in Mild, Moderate, and Severe Hallux Valgus

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Introduction/Purpose: Hallux valgus affects a substantial number of patients requiring foot and ankle orthopaedic surgery. Chevron osteotomy is commonly used in mild hallux valgus for angular correction, and the chevron-Akin double osteotomy is a more powerful tool, with presumed usefulness in moderate and severe deformity. The objective of this study was to use radiographic analysis to determine the average and maximum corrections achievable with the chevron-Akin double osteotomy.

Methods: This retrospective study included a total of 30 patients and a total of 33 feet. Pre- and postoperative hallux valgus angles (HVA) and intermetatarsal angles (IMA) were evaluated using standard weight-bearing AP plain x-rays and the differences pre- to post- were calculated. Patients were grouped based on the severity of preoperative hallux valgus into mild, moderate, and severe pathology. The pre- to post- changes of HVA and IMA, and the postoperative values of each angle, were compared between severity groups by using ANOVA, and means and standard deviation were reported at each level of severity. The rate of correction to normal was noted in each severity group. The study was approved by our institutional review board.

Results: Of the 33 feet, 3 were categorized as mild, 19 as moderate, and 11 as severe. In the mild group, average improvement was 13 in HVA and 6 in IMA; maximum correction achieved was 14 in HVA and 9 in IMA; and 3 of 3 (100%) were corrected to the normal range. In the moderate group, average improvement was 16.5 in HVA and 5.2 in IMA; maximum correction achieved was 29 in HVA and 9 in IMA; and 18 of 19 (95%) were corrected to the normal range. In the severe group, average improvement was 28.5 in HVA and 8.8 in IMA; maximum correction achieved was 43 in HVA and 20 in IMA; and 9 of 11 (82%) were corrected to the normal range.

Conclusion: This study demonstrates that the combined chevron-Akin double osteotomy is capable of both small and large degrees of angular correction in hallux valgus. It shows that the use of the chevron-Akin double osteotomy can be expanded to cases of moderate to severe angular deformity.

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