Outcomes Following Surgical Treatment of Hallux Valgus Deformity: A Systematic Literature Review
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Introduction/Purpose: Hallux valgus (HV) deformity is one of the most common chronic disorders. Surgical correction plays a central role in the treatment of painful HV deformity with over 100 different surgical techniques described in the current literature. In this report we performed a systematic literature review on studies that addressed clinical outcomes following surgical treatment of hallux valgus. The objectives of our study were to (1) describe available study characteristics on surgical HV deformity treatment; (2) determine patients’ postoperative satisfaction including postoperative pain and recurrence of HV deformity; (3) determine rate of postoperative complications by surgery type; and (4) analyze the relationship between radiographic HV deformity parameters and postoperative complication rate.

Methods: We reviewed the literature using common data bases. All searches were unlimited. Study demographics were collected and analyzed. Gender distribution was estimated using an inverse-variance weighting method and patient age and follow-up time were summarized using a simple weighted average due to an absence of reporting variance in the majority of studies. A chi-squared Q test, or heterogeneity test, was used to test for differences across surgery types for patient dissatisfaction, deformity recurrence, removal of hardware, reoperation, nonunion, hallux varus, nerve injury, infection, metatarsalgia, and VAS>5. Outcome estimates and 95% confidence intervals (CIs) for each surgery type were pooled across studies using the inverse-variance weighting method. A random effects model was used when study variance was estimated using the DerSimonian-Laird method.

Results: In total, 269 studies with 13,112 patients and 16,594 feet were included. Patients treated by simple buniectomy had the highest dissatisfaction rate with 25.5% (95%CI 17.5-35.6). Deformity recurrence was highest in patients treated by proximal osteotomy with 10.5% (95%CI 5.6-18.7). The highest rate of secondary surgery was in patients treated by simple buniectomy with 6.1% (95%CI 2.4-14.7). In the same patient group the highest rate of hallux varus deformity was observed with 9.1% (95%CI 2.9-24.9). Patients treated by hemi-joint resection had the highest rate of postoperative metatarsalgia with 16.2% (95%CI 11.3-22.8) and persisting pain VAS>5 with 6.5% (95%CI 3.3-12.3).

Conclusion: Patients with buniectomy and hemi-joint resection demonstrated the highest rates of postoperative complications including dissatisfaction, need for secondary surgery, postoperative metatarsalgia, and persisting pain.

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