Treatment of Moderate Hallux Valgus by Percutaneous, Extra-articular Reverse-L Chevron (PERC) Osteotomy

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Introduction/Purpose: The purpose of this study was to report a single surgeon series of consecutive patients with moderate hallux valgus managed with a Percutaneous Extra-articular Reverse-L Chevron (PERC) osteotomy.

Methods: A total of 38 patients underwent 45 PERC procedures. A medial approach is used just proximal to the flare of the metatarsal head. The osteotomy is performed using a burr, the thickness of which is selected according to the planned correction and shortening. A second dorsolateral approach is then performed and the osteotomy is fixed using a self-drilling, self-tapping 3 mm diameter cannulated and headless compression screw. There were 35 women and three men. The mean age of the patients was 48 years (17 to 69). An additional percutaneous Akin osteotomy was performed in 37 feet and percutaneous lateral capsular release was performed in 22 feet. Clinical and radiological assessments included the type of forefoot, range of movement, the American Orthopedic Foot and Ankle (AOFAS) score, a subjective rating and radiological parameters. The mean follow-up was 59.1 months (45.9 to 75.2). No patients were lost to follow-up.

Results: The mean AOFAS score increased from 62.5 (30 to 80) pre-operatively to 97.1 (75 to 100) post-operatively. A total of 37 patients (97%) were satisfied. At the last follow up there was a statistically significant decrease in the hallux valgus angle, the intermetatarsal angle and the proximal articular set angle. The range of movement of the first metatarsophalangeal joint improved significantly. There was more improvement in the range of movement in patients who had fixation of the osteotomy of the proximal phalanx.

Conclusion: Preliminary results of this percutaneous approach are promising. This technique is reliable and reproducible. The PERC osteotomy procedure is an effective approach for surgical management of moderate hallux valgus which combines the benefits of percutaneous surgery with the versatility of the chevron osteotomy. Its main asset is that it maintains an excellent range of movement; other advantages relate to the procedure being performed on an outpatient basis and the absence of tourniquet use.