Complications After Percutaneous Osteotomies of the Calcaneus

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INTRODUCTION: Open hindfoot surgery is associated with a relatively high rate of complications, including neurovascular injuries and wound healing problems compared with percutaneous techniques. However, there is a sparsity of literature describing the outcomes of these percutaneous techniques given their relatively recent adoption. The present study aims to assess the rate of postoperative complications for three commonly performed percutaneous calcaneal osteotomies.

METHODS: One hundred and eighteen patients (unilateral feet) were treated with one of three common percutaneous calcaneal osteotomies (Figs. 1-4). Sixty-five patients (55.1%) were treated with a medializing calcaneal osteotomy for hindfoot valgus, 32 patients with a Zadek Osteotomy (27.1%) for insertional Achilles tendinopathy, and 21 patients (17.8%) with a modified Dwyer osteotomy for hindfoot varus. Fisher's exact test was used to assess for associations between categorical variables.

RESULTS: The mean age was 46.2 years and there was a mean follow up of 16.1 months. The overall rate of postoperative complications was 3.4% (N=4), and no significant differences were found between the different osteotomy types. Complications included two cases (1.7%) of transient neuritis, one case of prolonged wound drainage (0.8%), and one non-union (0.8%). None of the complications were associated with any recorded preoperative comorbidity.

DISCUSSION AND CONCLUSION: Percutaneous calcaneal osteotomies are a safe alternative method for the treatment of conditions involving the hindfoot. The rate of postoperative complications may be less when compared to the reported rates of open hindfoot correction and should be considered in patients with a traditionally high risk of developing a postoperative complication.

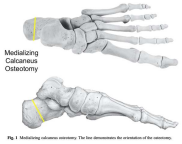

Fig. 1 Medializing calcaneus osteotomy. The line demonstrates the orientation of the osteotomy.

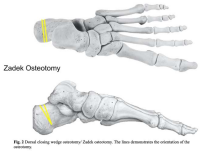

Fig. 2 Dorsal closing wedge osteotomy/ Zadek osteotomy. The lines demonstrates the orientation of the osteotomy

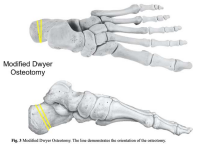

Fig. 3 Modified Dwyer Osteotomy. The line demonstrates the orientation of the osteotomy.

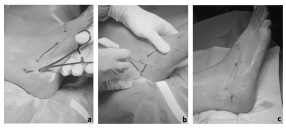

Fig. 4 a. Intraoperative image of the MIS approach for the calcaneal osteotomy. b. Intraoperative image of the osteotomy performed with a 3x20 mm cutting burr wedge (Wright Medical, Memphis, TN). c. Intraoperative image of the surgical area after closure.