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Percutaneous chevron/akin (PECA) versus open scarf/akin (SA) osteotomy treatment in hallux valgus: a systematic review and meta-analysis of 137 feet

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ABSTRACT

Introduction: The surgical treatment of hallux valgus presents several techniques described in the literature. Recently, the percutaneous technique has appeared as a less invasive option in the correction of the deformity and is increasingly used by surgeons.

Methods: A meta-analysis was performed using studies discovered by the systematic review of articles included in electronic databases (Medline, Scopus, Embase and the Cochrane Library) until June 2018 (Systematic Review Registry PROSPERO: CRD42018096613). A pooling analysis was synthesized from clinical outcomes such as the visual analogue scale of pain (VAS) and AOFAS score, radiographic outcomes and evaluation of complications.

Results: Two studies, including 137 feet with a hallux valgus diagnosis were added to the analysis, comparing open surgery using the Scarf and Akin (SA) technique versus percutaneous Chevron and Akin (PECA). In the synthesis of the results, pain in the perioperative period was lower in the PECA group, with a reduction of 1.68 points in the fixed effect model (95% CI=-2.09 a -1.27, p<0.01, i2=87%, t2=0.60). There were no differences between techniques in the radiographic results or in the risk of complications. The PECA technique demonstrated a longer radioscopy time compared with SA.

Conclusion: Use of the PECA method to correct hallux valgus compared with the open SA technique demonstrated less pain in the perioperative period, a similar potential for radiographic correction and an equal risk of complications, with a longer radioscopy time.

Keywords: Hallux valgus; Minimally invasive surgical procedures; Meta-analysis.