

Abstract Number: 18271

New method for the radiographic evaluation of metatarsal rotation in hallux valgus

Rui dos Santos Barroco¹, Bruno Rodrigues de Miranda¹, Leticia Zaccaria Prates de Oliveira¹, Mahmoud Beerens Abdul Ghani Abdul Ghani¹, Antonio Candido de Paula Neto¹, Douglas Hideki Ikeuti¹

1. Faculdade de Medicina do ABC, Santo André, SP, Brazil.

ABSTRACT

Introduction: Hallux valgus involves, in addition to I/II intermetatarsal angle deviation, a rotational deformity of the first metatarsal bone and its sesamoids in relation to the ground. The correction of the rotation is the objective of new and recently developed surgical techniques.

Objective: To describe a radiographic method that can help predict changes resulting from metatarsal rotational correction and facilitate surgical planning.

Methods: We acquired radiographs in a weight-bearing anteroposterior position in patients with flexible hallux valgus while asking the patient to actively extend the toes. We compared the weight-bearing radiographs with and without the toe extension maneuver. In addition to radiography, we performed computed tomography (CT) of the nonweight-bearing active toe extension maneuver using a support platform. To measure the changes, we used the classification of Coughlin and Smith et al.

Results: We observed clinical and radiographic correction, both angular and rotational, by measuring the intermetatarsal angle and sesamoid position. The changes were confirmed by CT, which showed improvement in the intermetatarsal angle, sesamoid position and metatarsophalangeal range.

Discussion: The toe extension maneuver was described as a peroneus longus tendon activation test by Klemola et al., who used it to demonstrate rotational clinical correction of hallux valgus. Here, we described a radiographic method based on this principle to observe the correction power of and factors involved in metatarsal derotation using a preoperative radiographic technique.

Conclusion: The method clearly demonstrated the capacity for the correction of preoperative hallux derotation in various planes, thus helping to predict the clinical, angular and rotational outcomes of surgical treatment.

Keywords: Hallux valgus; Radiography; Surgery.

