

# Minimally Invasive Method in Treatment of Idiopathic Congenital Vertical Talus: Recurrence is Uncommon

Jason L Cummings<sup>1</sup>, Pooya Hosseinzadeh

<sup>1</sup>Orthopaedic Surgery, Washington University in St. Louis School of Medicine

**INTRODUCTION:** Historically, treatment for Congenital Vertical Talus (CVT) has included open reduction of the talonavicular joint and extensive soft tissue release. In 2006, a new minimally invasive method consisting of serial manipulation and casting followed by percutaneous fixation of the talonavicular joint and percutaneous Achilles tenotomy was introduced. While the early results of this new technique are promising, more research is needed to verify that the talonavicular correction is maintained with time.

**METHODS:** We conducted a retrospective chart review of all patients with idiopathic CVT who underwent minimally invasive correction by a single surgeon at a tertiary care institution. Radiographic evaluation of the preoperative, immediate postoperative, 1-year postoperative, and latest follow-up appointments were performed (figures 1 and 2). Complications and clinical outcomes were recorded. Radiographic recurrence of the deformity was defined as Lateral Talar Axis-First Metatarsal Base Angle (TAMBA) greater than 30 degrees. Statistical analysis was performed on the maintenance of radiographic correction and factors associated with recurrence.

**RESULTS:** Forty-seven feet in 35 patients were included in the study with average follow up of 45 months. The average preoperative lateral TAMBA was  $74 \pm 18$  compared with  $12 \pm 8$  after initial surgical intervention. Additionally, radiographic correction of all other measured angles was achieved in every child following the initial surgery (table 1). Radiographic recurrence of talonavicular deformity was seen in 4 feet (9%). No cases of recurrence required a second corrective surgery during the follow-up period. There was a significant association between patient age at the time of treatment and recurrence of talonavicular deformity with patients older than 12 months being more likely to experience recurrence ( $p=0.041$ ) (table 2).

**DISCUSSION AND CONCLUSION:** In this large series of children with idiopathic congenital vertical talus, we found that correction of talonavicular deformity can be achieved and maintained in a large majority of these patients who undergo treatment with the minimally invasive technique first described by Dobbs in 2006. Recurrence of talonavicular deformity and other complications such as persistent radiographic pes planus are uncommon. Treatment with this technique should be initiated as soon as a diagnosis of CVT is confirmed and the patient is medically stable to decrease the likelihood of experiencing recurrence of talonavicular deformity.

