

Congenital Vertical Talus Deformity in Children with Distal Arthrogryposis: Good Clinical Outcomes Despite High Rate of Residual Radiographic Deformity

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INTRODUCTION: Patients with a diagnosis of arthrogryposis often suffer from various orthopaedic conditions, one of which is congenital vertical talus (CVT). While the treatment for CVT has evolved over time, patients with underlying neurological symptoms such as arthrogryposis have consistently proven more resistant to all forms of historical treatment. This is the first study of this specific subset of syndromic patients to evaluate the long-term outcomes of CVT correction using the minimally invasive Dobbs method.

METHODS: All patients with vertical talus who received treatment at our institution between January 2006 and June 2021 were identified. From this list, all patients who did not have a formal diagnosis of distal arthrogryposis were excluded. Radiographs (figures 1 and 2) and clinical notes of the remaining patients were then retrospectively reviewed at the following time periods: preoperative, 2-weeks postoperative, 1-year postoperative, and most recent. Patient-Reported Outcome Measurement Information System (PROMIS) scores were reviewed in all eligible patients. An alpha of 0.05 was used for all statistical analysis.

RESULTS:

Twelve patients (19 feet) met all inclusion criteria and were included in the final analysis. Initial correction of all four measured radiographic angles was achieved in all 19 feet. By the time of the most recent visit, the average lateral TAMBA of the entire cohort increased from 13.73 ± 9.75 degrees 2-weeks postoperatively to 28.75 ± 23.73 degrees ($p=.0076$). Radiographic recurrence of the talonavicular deformity was seen in 9 feet (47.4%) (table 2), 4 (21.1%) of which required additional unplanned surgery. The average PROMIS scores of the entire cohort in the pain interference, mobility, and peer relationship domains were 48.97 ± 9.56 , 47.9 ± 11.60 , and 52.87 ± 8.31 , respectively.

DISCUSSION AND CONCLUSION: Despite a higher radiographic recurrence rate of talonavicular deformity in this specific subset of syndromic patients, these patients still report PROMIS scores near population average in the pain interference, mobility, and peer relationships domains. We believe that the minimally invasive Dobbs method should be recommended as the first-line treatment method in these patients.

