

## **Is Percutaneous Heel Cord Tenotomy a Necessary Component in the Ponseti Treatment of Idiopathic Clubfoot Deformity?**

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### **INTRODUCTION:**

Addressing equinus during the Ponseti method of treatment of idiopathic clubfoot deformity is left to the treating surgeon's discretion. Additional casts may be applied or a percutaneous heel cord tenotomy may be performed. The purpose of this study is to compare the rate of recurrence and clinical outcomes of clubfeet that undergo a heel cord tenotomy with those that do not.

### **METHODS:**

An Institutional Review Board (IRB) approved retrospective review of our prospective clubfoot registry was performed at a single pediatric hospital. Patients with idiopathic clubfeet who were younger than 3 months of age and treated by the Ponseti method, with a minimum of 2 years of follow up were included. Initial Dimeglio score, number of casts, need for heel cord tenotomy, need for additional procedures, and compliance data were recorded. Outcomes were classified as "good" (plantigrade foot  $\pm$  heel cord tenotomy), "fair" (need for a limited procedure), or "poor" (need for a full posteromedial release).

### **RESULTS:**

Seven-hundred-eighty-seven patients with 1,184 clubfeet were studied. In total, 74% of feet underwent a heel cord tenotomy. Twenty percent of patients who did not undergo an initial heel cord tenotomy returned to the operating room for a late tendo-Achilles lengthening. Our multivariate analysis identified undergoing an initial heel cord tenotomy as an independent variable for predicting the need for additional procedures. It was not found to affect clinical outcomes. The rate of poor or fair outcomes doubles in those patients who do not undergo an initial heel cord tenotomy with a Dimeglio score higher than 13.

**DISCUSSION AND CONCLUSION:** Performing an initial heel cord tenotomy decreases the need for additional procedures by 30%. To reduce poor or fair outcomes, it is recommended to perform a heel cord tenotomy in those patients with an initial Dimeglio score of 13 or higher.