Bilateral Post-Axial Polydactyly in Monozygotic Twins
A Case Report and Results of Operative Treatment

Background/Patient Demographics
Although polydactyly in twins has been noted in conjunction with clinical syndromes, this condition is rarely seen in otherwise healthy monozygotic twins. The authors present a unique case of normal male monozygotic twins with bilateral post-axial polydactyly with Y-shaped metatarsals who underwent successful resection of the excess digits. A retrospective chart, radiographic and photographic review of male Hispanic 13-year-old monozygotic twins was performed. Objective and subjective clinical data was collected through 11 months of follow-up.

Diagnosis: Monozygotic Twins with Bilateral Post-Axial Polydactyly with Y Shaped Metatarsals

Literature Review
Polydactyly is a congenital disorder characterized by supernumerary digits of either the hands, feet, or both. These supernumerary digits run a spectrum from complete fully formed rays to hypoplastic soft tissue digits. The simplest divides polydactyly into three categories: pre-axial or tibial (hallux side), central (middle digits), and post-axial or fibular (lateral digit). Post-axial is the most common (79%), followed by pre-axial (15%) and finally central (6%). A morphological classification system was developed by Venn-Watson based on the presentation of the metatarsal: normal metatarsal with distal phalanx duplication, Y metatarsal, V metatarsal, wide metatarsal head, and complete duplication. Polydactyly appears to have no sex predilection, but does display racial predilection with rates ranging from 0.3 to 13.9 per 1000 black births and 0.3 to 1.3 per 1000 white births.

Treatment
Following evaluation of supernumerary digits, a single stage resection of the most lateral digit was performed bilaterally through racket-type incisions. Procedures included removal of duplicated distal metatarsal flush with diaphyseal shaft as well as soft tissue reconstruction.

Follow-Up
Patients tolerated procedures well and were allowed to weight-bear to tolerance immediately. Incisions healed without incident and patients relate decrease in painful irritation with shoe gear as well as satisfaction with cosmesis.

Discussion
Polydactyly, although one of the more common congenital conditions of the foot and ankle, is still rare with a reported incidence between 0.3 and 13.9 cases per 1000 live births. Polydactyly as an isolated deformity presents an autosomal dominant inheritance pattern with variable expression, but is rarely reported in otherwise healthy monozygotic twins.

In treating polydactyly it is essential to review radiographs to define bony anatomy and review orientation of the physis. Selection of the digit to be excised is determined by the development of the digit, as well determining anatomy and review orientation of the physis. Selection of the digit to be excised is determined by the development of the digit, as well determining anatomy and review orientation of the physis. Selection of the digit to be excised is determined by the development of the digit, as well determining anatomy and review orientation of the physis. Selection of the digit to be excised is determined by the development of the digit, as well determining anatomy and review orientation of the physis. Selection of the digit to be excised is determined by the development of the digit, as well determining anatomy and review orientation of the physis. Selection of the digit to be excised is determined by the development of the digit, as well determining anatomy and review orientation of the physis.

With careful evaluation and surgical planning resection of the supernumerary digit can yield excellent function and cosmesis.

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