Metatarsal Epiphyseal Bracket: Management via Central Physiolysis

Barbara Minkowitz¹, Scott J Mubarak, Julia Fekete, Colleen Spingarn², Neil Shah, Jason Rienzo, Ellen Dean Davis ¹Atlantic Health Systems: COSMC, ²Orthopaedics

Metatarsal bracketed epiphysis is an uncommon disorder that results in ossification of the tubular bones because of abnormally located/continuous physeal tissue along the diaphysis. This interferes with normal growth by causing progressive shortening and an angular deformity of the affected bone. This disorder progresses in four stages: (1) lack of ossification along the longitudinal epiphyseal bracket, (2) formation of ossification centers distally, (3) unification of ossification centers along the longitudinal diaphysis, (4) complete closure of the bracket. Preferred management of this condition primarily is surgical treatment and varies depending on the stage. The recommendation of the authors of this video is management via early physiolysis to remove the excess growth plate, which is a surgical technique that has been described by Choo and Mubarak. Because of the rarity of the condition, case reports in the literature are limited. To the knowledge of the authors of this video, no visual demonstrations of the surgical technique have been documented. Management via early physiolysis affords the greatest potential for correction of longitudinal and angular deformity of the bone as the patient grows, allowing for natural growth to counteract the current angulation. This video reviews the case presentation of a skeletally immature, 8-year-old girl with stage III bracketed epiphysis who underwent central physiolysis, using polymethyl methacrylate to block regrowth of the bar.