

Complex Decisions in the Management of Congenital Pseudarthrosis of the Tibia: An International Expert Panel Case Discussion

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Introduction

Congenital pseudarthrosis of the tibia or congenital tibial dysplasia, is one of the most challenging conditions in pediatric orthopaedics. In children who present in a pre-fracture state, the initial goal is fracture prevention. Once the tibia has fractured, the goals of treatment pivot to achieving—and maintaining—union. Treatment approaches are varied and may include pseudarthrosis resection, intramedullary (IM) fixation, circular external fixation, internal fixation, vascularized fibular grafting, use of recombinant biologics, guided growth, or a combination of approaches. Unfortunately, the treatment of this condition is often fraught with complications, and it is not unusual for a child to undergo multiple procedures. The goals of this case discussion are to highlight how experts approach these complex cases, to emphasize the key components of decision-making, to demonstrate clinical and technical pearls, and to feature the heterogeneity of this condition and its treatment.

I would like to extend a thank you to the orthopaedic surgeons who generously shared their personal cases with this condition and demonstrated the breadth of challenges and treatment options for CPT. Thank you to Christopher Iobst, Charles Johnston, Kenneth Noonan, Mark Dahl, John Herzenberg, and Philip McClure for showing their cases that included techniques of circular external fixation, intramedullary fixation, salvage, guided growth, internal fixation,

medical management, and use of biologics. They also demonstrated compassion in their care for the patient and family, emphasizing the social and emotional impact of this condition. Also, thank you to our panel of international experts who weighed in on these cases, giving thoughtful and honest answers, generating problem lists, and explaining rationales behind treatment plans. Thank you to In-Ho Choi, Joachim Horn, Christopher Iobst, Charles Johnston, Benjamin Joseph, Kenneth Noonan, and Hitesh Shah. We hope this case-based discussion will lead to greater understanding of the many hurdles that patients, families, and surgeons face with this condition. —Jennifer C. Laine, MD

Click on the link below for the accompanying case:

Case #1. 5-Year-Old Amish Boy with Impending Tibial Fracture: <https://bit.ly/3pOOZoM>

Case #2. 5-Year-Old Honduran Girl with Established Pseudarthrosis: <https://bit.ly/3BrX2u2>

Case #3: 2-Year-Old Girl with Neurofibromatosis and New Onset Fracture: <https://bit.ly/3nEmRSx>

Case #4. 19-Month-Old Girl with Anterolateral Bowing but No Fracture: <https://bit.ly/3Ex4RAf>

Case #5. 10-Year-Old Boy with CPT and Failed External Fixation: <https://bit.ly/3Ex4rKf>