

A Rare Pediatric Case Of Terminal Lower Extremity Hemimelia With Massive Tarsal Coalitions

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Statement of Purpose

This case documents multiple congenital deformities including hemimelia and massive tarsal coalitions in a pediatric patient and the subsequent surgical planning to create a functional realigned foot.

Case Study

- A 14-year-old female with terminal lower extremity hemimelia and no other significant past medical history presented with significant ankle pain and difficulty walking. Radiographs revealed a ball and socket ankle joint, an absent 5th metatarsal, and a complete osseous coalition the talonavicular joint as well as an osseous coalition of all of the facets of the talocalcaneal joint.
- Surgical correction included a triplanar correcting talocalcaneal osteotomy, a calcaneocuboid arthrodesis, osteotomy of the talonavicular coalition and a gastrocnemius recession.
- Radiographic results revealed normalized anterior distal tibial and lateral distal tibial angles, pain free gait and full return to all activities.

Pre-Op



1 month post-op



3 months post-op



Literature Review

- Hemimelia is a condition that involves malformations of the upper and lower extremities^{1,2}
- Terminal lower extremity hemimelia or congenital lateral ray deficiency fibular hemimelia is the most common type of limb deficiency and is part of a spectrum of dysplasia of the entire lower limb²⁻⁴.
- This syndrome is often associated with other anomalies of the lower limb, such as limb shortening, absent lateral rays of the foot, ball and socket ankle joint, tarsal coalition, hypoplasia of the lateral femoral condyle with knee valgus^{2,4,5}
- Congenital lateral ray deficiency in the absence of fibular hemimelia is rare and has been rarely reported in the literature.^{2,3}
- Baek et al. did report ball and socket ankle joints along with tarsal coalitions in the patients with terminal hemimelia of the lower extremity, however, no complete osseous coalition of the talonavicular and subtalar joints.
- To our knowledge, there is no reported cases of terminal lower extremity hemimelia accompanied by a completely fused talocalcaneal joint and a ball and socket ankle joint.
- This case study presents a unique congenital deformity that required diligent surgical planning to provide the best possible outcomes.

References

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