

Abstract No

Title: Functional limb reconstruction after calcanectomy for Ewing sarcoma using a composite of an allograft and a pedicled vascularised osteocutaneous fibula graft.

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Background: Primary malignant bone tumours of the calcaneus are very rare. Amputation usually remains the preferred surgical treatment as wide margins are difficult to maintain and reconstruction options after calcanectomy are limited.

Purpose: We present our experience with two cases of Ewing sarcoma of the calcaneus treated with limb sparing calcanectomy and reconstruction with a composite of an allograft and a vascularised osteocutaneous fibula graft.

Materials and Methods: Two patients (age 6 & 16 years) with Ewing sarcoma of the calcaneus were treated with wide calcanectomy through a combined medial/lateral incision in August 2012 and October 2013 at our institution. Both patients underwent pre- and post-operative chemotherapy. While a femoral head allograft was fitted to replace the removed calcaneus in the first case, a calcaneus allograft was used in the second. In both cases, the allograft was fixed to the talus and cuboid with Accutrak screws, with the aim to obtain a solid arthrodesis. Reconstruction was completed with a distally pedicled osteocutaneous fibula flap, including 5-6cm of vascularized fibula fitted into the allograft and a skin island filling the skin & soft tissue defect.

Results: Both girls were able to begin progressive weight bearing after 3-7 months and now remain fully functional in their daily activities with no evidence of disease at a minimum 2 years post operatively. Sequential X-rays and CT-scans document progressive consolidation and progressive remodeling over time.

Conclusions: Limb sparing calcanectomy was feasible with reconstruction using a composite of an allograft and a vascularised osteocutaneous fibula graft.