

Sandwich Block Arthrodesis for Complete Talus Extrusion: Report of 2 Cases and Bibliography Revision

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Purpose: Our objective was to report an infrequent injury, technique, and results of the reconstruction with structural bone and arthrodesis using a nail, the so-called sandwich block arthrodesis.

Methods: Case 1 is a 34-year-old male who sustained motorcycle accident with total talus extrusion of the left foot. We performed irrigation and debridement, cement spacer, and external fixation. 30 days later we replaced the spacer with structural bone graft and performed a subtalar and tibial-talus arthrodesis using a retrograde nail. At 6 weeks the patient began with partial weight-bearing, and at 8 weeks full weight-bearing. Tibiotalar arthrodesis was visible in radiographs at 12 weeks. Six months later the patient was pain free and returned to work activities. Case 2 is a 32-year-old male with a high-energy trauma due to a jump from 9-m height, with total extrusion of right talus. We performed irrigation and debridement, talus reposition, Kirschner-wire fixation, and external fixation. A wound infection was diagnosed 10 days later; because of that, we removed the talus and put a cement spacer with antibiotic and a sural flap in the same procedure. 45 days later, we removed the cement and put in a structural graft, performing a subtalar and tibial-talus arthrodesis using a retrograde nail. At 6 weeks the patient began with partial weight-bearing, and at 8 weeks full weight-bearing. Tibiotalar arthrodesis was visible in radiographs at 12 weeks. Six months later the patient returned to work activities using a walking stick and with mild pain.

Results: Six months later the patient in case 1 was pain-free and returned to work activities. After 6 months, the patient in case 2 returned to work activities using a walking stick and with mild pain.

Conclusion: Complete talar extrusion without fracture is very unusual, because of the strong ligament support and the deep position in the tibio-peroneal mortise. Only a few cases have been reported in the literature. Some authors recommend talus resection in acute and ankle-subtalar arthrodesis because of the high incidence of infection and avascular necrosis. Other authors recommend talus reposition, with good results. Our results with talus reposition in an acute setting were bad. Simple talectomy is painful and causes shortening, varus deformity, and instability. Due to our experience we recommend talus removal, cement spacer, and external fixation and a few days later perform a sandwich block arthrodesis, with structural bone allograft and fixation with retrograde nail, to keep the limb height without pain. This is a variation from the original technique proposed by Koller, because he used bicortical iliac bone graft and cancellous screws for the fixation.