CASE STUDY I:
Revision Total Ankle Replacement Using the INBONE™ II Total Ankle After Failed Salto Talaris Prosthesis

Patient History
The patient presented as a 50-year-old male with a BMI of 42, high blood pressure, and asthma. In 2010 he had a Salto Talaris (Integra) total ankle replacement performed at an outside facility. He did well for 5 years, and in the 6th year, he began to have chronic pain. He pointed to the ankle as the source of pain, which he rated as 9 out of 10. He described it as a sharp, throbbing pain that he experienced with nearly every step. He blamed his painful ankle for additional weight gain. He reported no interference with activities of daily living, but the pain was interfering with his quality of life. He had failed treatment with anti-inflammatory medication and did not wish to wear a brace.

Examination
On examination, the ankle was without deformity, but it was swollen circumferentially without bruising or erythema. The incision from his previous surgery had healed well. He was very tender over the ankle joint with palpation. He only had a 10 degree motion arc. The subtalar joint was not tender and ranged well. His original tendons were intact. He had 5/5 strength in all directions. He had a marked gastrocnemius contracture.
Imaging and Diagnosis

AP and lateral standing x-rays showed an ankle prosthesis (Figure 1A, 1B) with classic signs of aseptic mechanical loosening of the tibial tray and mild osteolysis surrounding the implant. The talar component did not appear loose, but it was malpositioned too far anteriorly on the talus. The subtalar joint appeared to be free of disease.

Case Assessment

The patient had significant ankle pain and dysfunction. He had failed medicinal management and did not want bracing. Therefore, surgical treatment was warranted. The patient was counseled on the nature of his condition. We discussed ankle arthrodesis and revision total ankle replacement and discussed the merits and risks of each. The patient chose a total ankle revision arthroplasty. We chose to perform this with the Wright Medical INBONE™ II Total Ankle Replacement System.
Surgical Treatment

A standard anterior surgical approach at the previous incision site was utilized and extended proximally and distally about 1 cm. We cut down through dense scar tissue to the tibial bone. A full thickness flap was elevated off the front of the ankle. With the prosthesis fully exposed, fine chisel osteotomes were used to chisel around the failed implant. Curved osteotomes were then used to interface between the bone and the implant and gently shoe-horn out the prosthesis (Figure 2).
A fracture of the tibia was generated during implant removal (Figure 3). The leg was placed into the INBONE foot holder, securing the heel with pins and the calf and forefoot with Ace bandages for stability. Alignment rods were aligned into the center of the ankle in both the AP and lateral x-ray views. We peck-drilled across the tibial-talar joint with the 6mm drill using AP and lateral views to ensure the drill aligned with both the AP and ML guides. The cutting block was lined up to the ankle with great care to minimize further boney resection (Figure 4).
Several millimeters of bone were taken off both the tibia and talus to freshen up the cuts and to ensure proper position (Figure 5A, 5B). The intramedullary canal was reamed under x-ray guidance to prepare the tibial canal for the INBONE stems.

We sized the tibia with the sizing tool, and the appropriate size tibial tray was impacted into place (Figure 6).
A three-piece tibial stem was assembled and inserted sequentially into the intramedullary canal. A bone reduction forceps clamp was used to secure the fracture during tibial component placement (Figure 7).

The talar trial component was placed with the poly trial piece. It was ranged until the optimal position was found, then it was secured to bone with K-wires. Following the surgical technique, we drilled the anterior pegs for the talus, put the central guidewire, and drilled for the central stem. The talar component was impacted into place (Figure 8A, 8B).
The tibia fracture was secured with a small anterior plate and screws (Figure 9A, 9B). Final x-rays were taken.

**Postoperative Care***

The patient was placed into a well-padded plaster splint before leaving the operating room. The patient was ordered no weightbearing until seen in the office at 2 weeks postoperative. At 2 weeks postop, the sutures were removed. The patient was placed in a below-the-knee walker boot. Early motion was begun, but weightbearing was delayed for a full 6 weeks until the fracture was healed. At 6 weeks the fracture was deemed to be healing well. The implant alignment was good and appeared to be stable. The patient was allowed to begin a progressive return-to-function program over the next 6 weeks.

**6 Months Postoperative**

At 6 months postoperative, the patient was doing well tolerating weightbearing and walking without assistance devices. He was not taking pain medication. The implant appeared to be stable and in good alignment (Figure 10A, 10B). The tibial fracture was healed.

*Postoperative care is the responsibility of the medical professional.*