A 69-year-old man underwent primary total ankle replacement using an “Alvine Total Ankle Prosthesis” in 1998, secondary to post-traumatic arthritis. Ultimately, failure of the initial implant occurred with subsidence of both metallic components and varus angulation of the talar component resulting in gross lateral ankle instability. Various treatment options were reviewed including functional bracing, customized component exchange, conversion to an alternate total ankle replacement or tibio-talo-calcaneal arthrodesis.

Purpose

Failure of total ankle replacement requiring revision is a known complication.1-9 Ultimate revision options include component exchange, customized component exchange, conversion to an alternate total ankle replacement, ankle arthrodesis and amputation. The use of customized components is beneficial in severe cases because it allows for simultaneous correction of significant malalignment and bone loss.6 We present a case of a failed “Alvine Total Ankle Prosthesis” revised with custom stemmed tibia and talar components with adjunctive lateral ankle stabilization for associated unstable varus ankle deformity. Currently, limited published data is available regarding the use of custom stemmed tibia and talar components, for revision total ankle replacement.1

Case Study

The patient failed functional bracing, was determined to not be a candidate for conversion to an alternate total ankle replacement and refused fibula-talar-calcaneal arthrodesis. Thus, we determined that custom stemmed tibia and talar components with modified Evans lateral ankle stabilization was most appropriate. A specific CT scan imaging sequence of the entire hindfoot and ankle was undertaken to closely monitor the durability of this approach. At 16-months follow-up, the patient has a well-aligned, pain free ankle with acceptable range of motion and stability. Given the limited published data on custom stemmed tibia and talar components for revision total ankle replacement, annual surveillance will be undertaken to closely monitor the durability of this approach.

Analysis and Discussion

The patient experienced an uneventful post-operative course. At 16-months follow-up, the patient has a well-aligned, pain free ankle with acceptable range of motion and stability. Given the limited published data on custom stemmed tibia and talar components for revision total ankle replacement, annual surveillance will be undertaken to closely monitor the durability of this approach.

References