Two-Stage Total Ankle Arthroplasty Without Total Talus Implant for End-Stage Avascular Necrosis of the Talus: A Case Report

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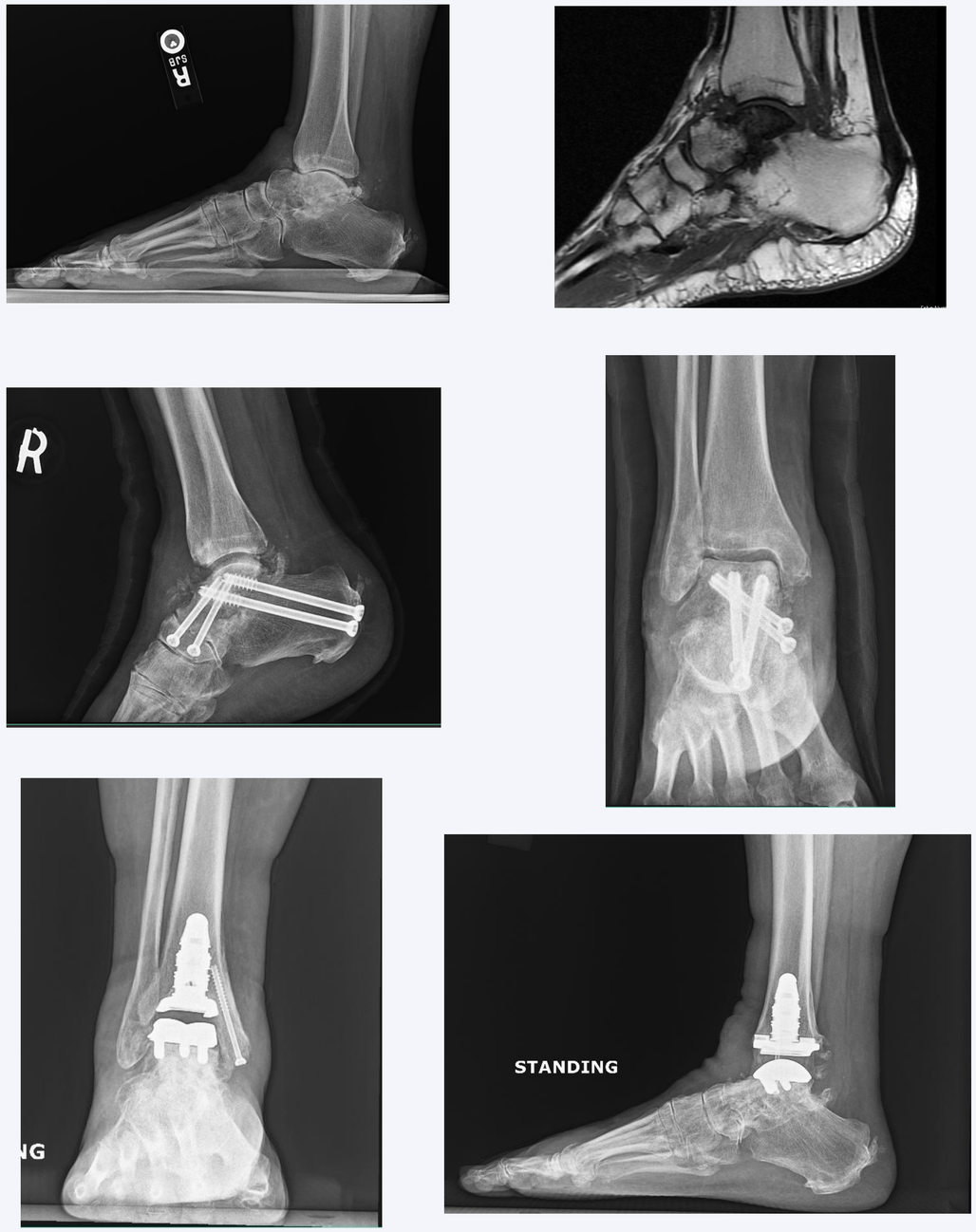
PURPOSE

Avascular necrosis (AVN) of the talus with associated hindfoot and ankle collapse is a challenging pathology to treat. Scant literature is available regarding joint salvage procedures for late-stage AVN without the use of a total talus implant. We present a case utilizing a two-stage approach for talar AVN with the initial procedure consisting of hindfoot arthrodesis for revascularization of the talus, followed by total ankle arthroplasty (TAA) without a concomitant total talus implant.

CASE STUDY

A 68-year-old female with a PMH of HTN, OSA, HLD, presented with chronic right ankle pain after multiple procedures performed by an outside provider for AVN of the talus including subchondroplasty and core decompression. On clinical exam, she had painful ROM to her ankle, subtalar and talonavicular joints with advanced imaging demonstrating hindfoot arthritis and end-stage talar AVN with collapse. The patient did not want to pursue joint destructive procedures to her ankle such as an arthrodesis. We pursued a two-stage total ankle arthroplasty with the index procedure consisting of a subtalar and talonavicular arthrodesis. After confirmation of fusion with a CT scan, the second stage consisted of a total ankle arthroplasty with a long-stemmed tibial implant without the use of a total talus implant due to revascularization of the talus with the index hindfoot fusion. She has had an uneventful post-op course, ambulating in regular shoe gear with no evidence of talar component subsidence.

IMAGING



Figures: Pre-operative ankle radiograph and MRI demonstrating talar AVN, followed by index hindfoot arthrodesis, followed by TAA with prophylactic medial malleolar fixation

DISCUSSION

Historically, AVN of the talus was a contraindication for TAA. More recently, the introduction of total talus implants has allowed for more joint salvage procedures for end-stage talar AVN.

There is minimal literature on the use of TAA in the setting of end-stage talar AVN without a total talus implant. Devalia et. al reported on a case series of talar AVN treated with an index hindfoot fusion for revascularization of the talus, followed by TAA. They found significant improvement in clinical, and patient reported outcomes[1]

In a recent systematic review by Bischoff et. al, total talus arthroplasty demonstrated a complication rate of approximately 9%, but with improved functional and clinical outcomes[2]. We felt not pursuing a total talus implant with the index procedure would leave the option for it in the future if a revision surgery was necessary.

CONCLUSION

Our case presents an alternative option to total talus implants with revascularization of the talus with hindfoot arthrodesis and the use of a standard talar component in the setting of total ankle arthroplasty.

REFERENCES

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