Management of Massive Periprosthetic Tibial Osteolysis Following Total Ankle Replacement with Geometric Metal Reinforced Polymethylmethacrylate Cement Augmentation

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LITERATURE REVIEW

Historically, impaction bone grafting has been proposed to manage contained defects, while ambiguity remains regarding management of massive periprosthetic osteolytic defects with cortical breach following TAR.4-8

CASE STUDY

An 80-year-old man 10-years status-post primary TAR responded to a surveillance program conducted by the senior author (TSR). Prior radiographs demonstrated early tibial periprosthetic cystic changes that progressed before he was lost to follow-up (Figure 1). Updated radiographs and CT demonstrated a massive periprosthetic osteolytic defect breaching the anterior, medial and posterior cortices, as well as, progressive talar component subsidence (Figure 2).

RESULTS

Revision TAR was performed by maintaining the stable original tibial component, while revising the UHMWPE insert and talar component. Periprosthetic tibial cysts were debrided (Figure 3) and filled with geometric metal reinforced polymethylmethacrylate (PMMA) cement augmentation (Figure 4). Pathologic findings included an abundance of granular histiocytes consistent with a particulate-mediated inflammatory response due to UHMWPE wear debris. At 17-months follow-up he continues to do well with planned annual surveillance (Figure 5).

REFERENCE