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QUESTION 5: What are the indications and contraindications for irrigation and debridement and retention of prosthesis (DAIR) in patients with infected total ankle arthroplasty (TAA)?

RECOMMENDATION: DAIR with polyethylene exchange may be indicated in early postoperative infection (< four weeks) or acute hematogenous infection (< four weeks of symptoms) in patients with infected TAA, although recurrent infection has been seen. Sufficient clinical evidence is lacking.

LEVEL OF EVIDENCE: Consensus

DELEGATE VOTE: Agree: 100%, Disagree: 0%, Abstain: 0% (Unanimous, Strongest Consensus)

RATIONALE

Periprosthetic joint infection (PJI) is a serious complication after TAA. Deep infection of TAA can be limb-threatening; hence, prompt treatment is required to minimize the potentially devastating effects of infection. Currently reported infection rates after TAA range from 1.1 to 8.5%, with reports indicating that newer anatomic designs have lower overall infection rates [1-6].

The current indications for DAIR in infected TAA include early postoperative infection and acute hematogenous infection. Myerson et al. retrospectively reviewed 572 TAAs over a 10-year period and found 19 cases of PJI (3.3%), including 15 chronic infections, three early postoperative infections, and one acute hematogenous infection [7]. The three early postoperative infections and one acute hematogenous infection were treated with initial irrigation and debridement with polyethylene liner exchange. All four cases resulted in recurrent infections that were treated with successful revision TAA, tibialocalcaneal fusion and antibiotic cement spacer with an average retention time of six months. Only one case had an initial negative culture. The authors postulated that the inability to eradicate bacteria could be secondary to the ankle's unique anatomy with difficult access to regions such as the posterior gutters to perform a complete debridement. Additionally, Patton et al. reviewed 966 TAA over a 17-year period and found 29 cases of infected TAA (3.2%) [8]. They treated acute infections with polyethylene exchange in two cases and debridement alone in three cases. All five cases were apparently treated successfully with no evidence of subsequent failure.

There is paucity in the current literature regarding the management of PJI of TAA. Indications for DAIR are limited to early postoperative infection and acute hematogenous infection, and most guide-

lines are derived from the knee and hip studies. There are mixed results even in this selected group of patients, as all four patients with early infection from one study suffered persistent infection following DAIR, raising questions regarding the efficacy of this procedure. It is unclear at this point whether the failures stem from inadequate debridement due to the unique anatomy of the ankle or whether the natural history of ankle infection is inherently different than that of the hip and knee. Larger and additional studies are needed to provide a higher level of recommendation at this point.

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