

may be a good first step in the treatment algorithm, but failure rates are high, and no more than two surgical debridements should be attempted before considering a revision surgery in order to achieve infection eradication.

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QUESTION 2: How should acute reinfection of an oncologic endoprosthesis be treated?

RECOMMENDATION: Acute reinfections in patients with oncologic endoprostheses demand treatment by surgical methods because the long-term administration of antibiotics alone is not sufficient. The most appropriate treatment modality for acute re-infection is debridement, antibiotics and implant retention (DAIR) with exchange of components.

LEVEL OF EVIDENCE: Consensus

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

RATIONALE

Oncology patients represent a high-risk subset of the population. The implantation of endoprostheses in this cohort of patients leads to an increased risk of infection due to their immunocompromised state, previous radiotherapy, poor soft tissues, poor nutritional status or significant comorbidities [1].

Many options have been proposed to prevent infections of an endoprosthesis. However, there are no current appropriate guidelines or recommendations to guide optimal management of an acute endoprosthetic reinfection. There is a paucity of literature regarding the results of these different procedures, though it has been shown that irrigation, debridement and prolonged antibiotic administration have the poorest results in treating late prosthetic infections [2]. Therefore, removal of the infected prosthesis either as one- or two-stage procedure or an amputation may be necessary [2].

Allison et al. reviewed 329 patients who had undergone arthroplasty surgery for definitive oncological treatment [3]. Of those that became infected and were treated with irrigation and debridement without component exchange, there was a 42% success rate at eradicating infection. With single stage exchange, this increased to 70%. Two-stage revision led to a 62% success rate. Conversely, previous literature has associated two-stage revisions as having a higher success rate when compared with one-stage [4-6]. As one would expect, amputation has been shown to carry the highest rate of infection eradication. The risk of amputation due to an infected endoprosthesis has been reported to be between 23.5% and 87% [4,7,8].

Periprosthetic infection can lead to a poor functional outcome as well as an increased morbidity and mortality. Management of infections after reconstructive surgery for bone tumors is a challenge, requiring careful planning, consideration of the patient's prognosis and a potentially aggressive surgical approach.

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