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QUESTION 10: How should postoperative cellulitis be treated in patients with total ankle arthroplasty (TAA) in place?

RECOMMENDATION: In the absence of evidence, we recommend that (1) patients with TAA in place who develop postoperative cellulitis be evaluated thoroughly to rule out periprosthetic joint infection of the ankle, and (2) that isolated cellulitis may be treated with antibiotics, elevation and close monitoring. Aspiration can be considered in certain cases, with the potential risk of introducing deep space infection.

LEVEL OF EVIDENCE: Consensus

DELEGATE VOTE: Agree: 92%, Disagree: 0%, Abstain: 8% (Super Majority, Strong Consensus)

RATIONALE

Treatment of postoperative cellulitis in patients with TAA is not well-defined. Schipper et al. suggested a compression wrap protocol over a circumferential fiberglass cast significantly reduces the incidence of wound complications [1]. While the authors demonstrated an overall reduction of wound complications, the differing post-operative immobilization protocols did not result in a significant difference in the proportion of wounds in patients with cellulitis requiring antibiotics (oral or intravenous) (22% vs. 16.7%, p = .60).

To our knowledge, there is no other TAA literature reporting on cellulitis. Brook and Frazier reported on 259 patients with culture-positive cellulitis [2]. Based upon their report in which 63 of 259 (24%) cellulitis cases were located on the leg, the authors concluded that the polymicrobial nature of cellulitis warrants the prescription of broad-spectrum antibiotics.

Meanwhile, in the total hip arthroplasty (THA) population, Rodriguez et al. reported on the use of intravenous and oral antibiotics in 16 patients with incisional cellulitis [3]. They assessed the erythematous eruption by hematological investigations, radiography, radionuclide scanning and blood culture, as well as aspiration from the area and skin biopsy. Following assessment, the best antibiotic course was determined. For two to six days until the erythema resolved, the following antibiotics were given to patients: 11 were given cephalexin, one vancomycin, one ampicillin and gentamicin and one cefuroxime. Following this antibiotic course, cephalexin,

ciprofloxacin or amoxicillin were administered orally for two to six weeks. One patient received only oral ciprofloxacin, with resolution of the erythema occurring within 24 hours. Rodriguez et al. thus concluded that treatment with antibiotics for a minimum of two weeks led to resolution of symptoms and allowed for nonoperative management of the cellulitis.

In a separate case report on a patient undergoing THA, Perlick et al. argued that most cellulitis is caused by *Streptococcus hemolyticus* or *Staphylococcus aureus* [4]. The authors were successful in treating the surgical site cellulitis with the following protocol: dicloxacillin 2 gm × 3 or clindamycin 600 mg × 3 daily. This finding should also be considered when determining an appropriate treatment regimen for patients with post-arthroplasty cellulitis.

REFERENCES

- [1] Schipper ON, Hsu AR, Haddad SL. Reduction in wound complications after total ankle arthroplasty using a compression wrap protocol. *Foot Ankle Int.* 2015;36:1448–1454. doi:10.1177/1071100715597437.
- [2] Brook I, Frazier EH. Clinical features and aerobic and anaerobic microbiological characteristics of cellulitis. *Arch Surg.* 1995;130:786–792.
- [3] Rodriguez JA, Ranawat CS, Maniar RN, Umlas ME. Incisional cellulitis after total hip replacement. *J Bone Joint Surg Br.* 1998;80:876–878.
- [4] Perlick CB, Jensen J, Overgaard S, Søballe K. Incisional cellulitis after total hip arthroplasty—a case report. *Acta Orthop Scand.* 2003;74:622–623. doi:10.1080/00016470310018063.



Authors: Jonathan Kaplan, Steven Raikin

QUESTION 11: Does deep chronic infection after total ankle arthroplasty (TAA) require implant removal?

RECOMMENDATION: Yes. Deep chronic infection after TAA requires implant removal unless otherwise contraindicated.

LEVEL OF EVIDENCE: Strong

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

RATIONALE

While there is substantial evidence in the total hip arthroplasty (THA) and total knee arthroplasty (TKA) literature regarding one-and two-stage revision for infected total joint arthroplasty (TJA), there are very limited studies assessing deep chronic infection in primary TAA

and TAA revisions. The majority of recommendations for the evaluation and treatment of the infected ankle arthroplasty in the current literature are based on those recommendations of THA or TKA [1–3]. Hsu et al. reported on the evaluation and management of the painful