Surgical Complications of Ankle Joint Arthrodesis and Ankle Arthroplasty Procedures

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KEYWORDS

• Total ankle arthroplasty • Ankle arthrodesis • Complications • Infection

KEY POINTS

- Complications are a very real risk when dealing with total ankle arthroplasty (TAA) and ankle arthrodesis (AA) that the physician must be ready to handle before undertaking the initial surgery.
- The most common complications in TAA are deep infection and implant failure when looking at the short-term and long-term.
- The most common complications in AA are nonunion and wound healing complications.
- Recent literature has shown a decrease in complications after TAA and AA surgeries.

INTRODUCTION

When looking at all surgeries, one of the most important things that must always be considered are the complications. Surgeons must be prepared to handle the complications of the surgery before under taking it. When looking at total ankle arthroplasty (TAA) and ankle arthrodesis (AA), we are looking at very serious complications that could lead to limb loss. The two surgeries have some very similar complications along with some that are very different. The most common minor complication seen in both surgeries is wound healing complications ranging from 1% to 6%[1–3] (**Fig. 1**). The most common major complication for AA is nonunion of the fusion site.[2–4] This complication is usually seen in about 2% to 10% of ankle fusion surgery but is possibly decreased with new techniques in AA surgery.[4] When looking at TAA, the most common major complication is deep infection, ranging in about 3% to 10% of surgeries when looking at the short-term.[5] When looking at the long-term, the most common major

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Fig. 1. Postoperative wound complication after TAA.

complication of TAA is implant failure in 5% to 15%.[6] It has been noted that with new advances in both surgeries, there has been a decrease in complication rates over the past 10 years.[2,7,8] Although, with both surgeries, especially TAA, a learning curve is noted with higher risk of complications for surgeons with less experience.[2] The most common complications seen with TAA are implant failure, aseptic loosening/subsidence, osteolysis, polyethylene liner fracture, hardware pain, nerve injury, malalignment, heterotopic ossification, wound problems, infection, perioperative fractures, deep vein thrombosis (DVT), adjacent joint arthritis, and amputation[1] (**Fig. 2**). The most common complications seen with AA are hardware pain, hardware failure, nonunion, malunion, wound problems, nerve injury, infection, perioperative fractures, DVT, adjacent joint arthritis, and amputation[1] (**Fig. 3**). The key to handling the complications of both surgeries is early recognition and treatment.

PATIENT EVALUATION OVERVIEW

With all situations in medicine, the most important aspect of evaluating patients is a thorough history and physical examination. This comprehensive approach point is especially true for examining patients postoperatively when looking for complications. This evaluation begins at the first postoperative visit when looking for signs and symptoms for infection including systemic symptoms and local symptoms. As the postoperative course continues, the physician must continue to keep a close eye out for any