Salvage Arthrodesis of the Hindfoot After Failed Total Ankle Replacement

**Foot & Ankle Category:** Hindfoot

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**Introduction**
Total ankle replacement (TAR) has regained interest in the treatment of symptomatic end-stage ankle arthritis. However, longevity is limited and in case of failure ankle arthrodesis might be warranted. There is only few data available in literature regarding salvage arthrodesis after failed total ankle replacement. We present the short and midterm results in a series of patients that have been treated due to either septic or aseptic failure of total ankle replacement. The specific focus is put on technical influence regarding clinical outcome, union rate and complication.

**Methods**
From November 2002 until October 2010 nineteen patients underwent salvage ankle arthrodesis after failed total ankle replacement. All patients were retrospectively reviewed. Clinical outcome was assessed using the Foot Function Index, AOFAS hindfoot- and SF-36-scoring systems. In addition, all patients underwent radiographic assessment including conventional radiography and CT scans as well.

**Results**
Fourteen females and five males with a mean age of 60 years (range 26 – 79) participated in the study. The follow-up interval averaged 29 months (range 10 – 77). Fourteen patients showed aseptic loosening, while five revealed septic loosening of TAR. The following techniques were used to achieve hindfoot fusion: Screw fixation (N=5); intramedullary rod (N=7); blade plate (N=3); anterior double plating (N=4). All except one fusions were made using either an auto- or an allograft. Complete union as confirmed by CT was achieved in 14 (74 %) patients after a mean time of 51 weeks (range 12 to 106). At final follow-up the SF-36 score reached an average value of 43 points (range 7 to 80 points). The foot function index (best score = 0%) reached 58% (range 22 to 74) for pain and 69% (range 42 to 98) for function. Six revision surgeries were necessary in a drug-addicted patient with low compliance. At final follow-up a fibrous union was achieved. Another two patients needed a second revision arthrodesis and one finally achieved complete union while the other was treated with a ring fixator because of an infection. The complication rate requiring further surgeries (hardware removal not included) was 26 % (i.e. five patients). All patients who had undergone anterior double plating arthrodesis had no complications and were clinically satisfied and showed complete union after a mean time of 15 weeks (12 to 20).
Conclusion
Salvage hindfoot arthrodesis after failed total ankle replacement has a high revision rate and surgeons should be aware of a possibly prolonged time until union when compared with primary ankle arthrodesis. Comparing the different salvage procedures best radiographic and clinical results were achieved in patients who underwent anterior double plating arthrodesis using either an allo- and/or an autograft.