Wound Complications Following 760 Total Ankle Replacements

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Introduction/Purpose: Wound complications following total ankle replacement (TAR) potentially lead to devastating consequences. The aim of this study is to compare the surgical and demographic differences in those with and without wounds which require operative management. We hypothesize that increased tourniquet and surgical time negatively influences wound healing.

Methods: We retrospectively identified a consecutive series of 760 primary TARs performed between January 1998 and December 2014 whose data was prospectively collected. We then identified patients who required a secondary surgery to treat wound complications (ie operative debridement, split-thickness skin grafting, soft tissue reconstruction). All patients had operative wound debridement. We then compared demographics, surgical characteristics, and functional scores to see if there were any differences between the two groups. Clinical outcomes including secondary procedures and implant failure rate were recorded.

Results: Twenty-seven patients (3.6%) had a total of 50 procedures to treat wound issues. 18 patients had flaps and 13 had split-thickness skin grafts. The mean time to operatively treating the wound was 12.6 weeks after the index TAR. The follow-up time from wound procedure was 28 months. Compared to the control group, patients with major wounds had a significantly longer surgery (215.6 vs. 189.2 min, p=.028) and tourniquet time (150.9 vs. 140 min, p=.0037). The control patients were more likely to have post-traumatic arthritis, whereas those with wound complications were more likely to have osteoarthritis (p=.002). Post-operatively, only the FAOS pain score was worse in patients with wounds (p=.047). There were seven failures in the major wound complication cohort (25.9%), including 2 BKAs.

Conclusion: Ankle wounds which require operative management have high failure rates and may result in devastating outcomes. Given our data, we recommend limiting tourniquet time.