Comparison of Total Ankle Replacement and Ankle Arthrodesis During the Recovery Period
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Introduction/Purpose: Two reliable surgical alternatives exist for end-stage ankle arthritis, ankle arthrodesis and total ankle replacement. Several comparative studies have shown similar clinical results between the two procedures at intermediate-term follow-up (2 to 6 years). Despite this comparative literature, no studies have been dedicated to determining which of the two procedures allows better function and pain during the recovery period (the first 6 months following the procedure). This information is especially beneficial to patients for whom a more difficult and longer recovery is particularly adverse, such as elderly patients or patients with medical comorbidities. It is also unclear if pain or dysfunction during the recovery period correlates with intermediate-term complications such as nonunion or prosthetic loosening.

Methods: This is a single site retrospective case-control study. Patient-Reported Outcomes Measurement Information System (PROMIS) scores have been completed by patients at the orthopedic foot and ankle clinic at each visit since October 2014. Patients who have undergone either a total ankle replacement or an ankle arthrodesis during that timeframe were evaluated to determine their level of pain, function, anxiety and depression at a given interval (from preoperative to 6 months) during their recovery. Data acquisition was via chart review. Exclusion criteria included Charcot neuroarthropathy and inadequate data.

Results: 138 procedures (58 total ankle replacements, 80 ankle arthrodeses) were performed at our institution during the study period. Chart review of patients meeting inclusion criteria is currently being conducted to record PROMIS scores, adjuvant procedures, complications, return to work and post-operative protocol during the first 6 months following the procedure. Data analysis will be undertaken, to detect a minimally important difference between PROMIS scores; with a 95% confidence interval and power of 0.8, the minimal sample size was calculated to be 44 subjects in each group. For patients who developed a complication from surgery (non-union, implant loosening, infection, etc.), scores will be reviewed to determine if abnormal PROMIS scores early on in the recovery period correlate with future complications.

Conclusion: Patient pain and function during the first 6 months following surgery is an important consideration for those contemplating both ankle arthrodesis and replacement as options. Data collected from this study to be completed by Spring 2017 will help to clarify if differences between the two procedures exist.

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