Long-Term Outcome Following Interpositional Arthroplasty of the First Metatarsophalangeal Joint

Presenting Author:
Michael Aynardi, MD

Additional Authors:
Eric J. Dein, BS, Talal A. Zahoor, MBBS, Lara C. Atwater, MD, Lew C. Schon, MD, Stuart D. Miller, MD

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Introduction/Purpose: Surgical treatment for osteoarthritis of the first metatarsophalangeal joint (MTPJ) includes cheilectomy or fusion for advanced arthritis. In addition, procedures to preserve or restore motion have demonstrated promising short-term results. Currently, no studies have described long-term results following interpositional arthroplasty. Our institution has performed interpositional arthroplasty with autograft (joint capsule/extensor hallucis brevis) or allograft (dermal matrix) with anecdotal success for over 15 years. The purpose of this study is to report long-term outcomes following interpositional arthroplasty.

Methods: All patients undergoing interpositional arthroplasty at our institution from 2000-2015 were identified and a retrospective chart review was performed. Long-term follow-up was conducted through a telephone survey to obtain survivorship, satisfaction, and functional scores. Average follow-up was 89.1 months (range, 6 to 179 months). Survivorship of the interpositional arthroplasty procedure was defined as no subsequent surgery on the hallux after the index procedure.
Results: From 2000-2015, 292 interpositional arthroplasties were performed at our institution. The overall failure rate was 1.7% (5/292), which included patients requiring revision surgery (2 patients) or subsequent fusion (3 patients). Autograft interpositional arthroplasty had a failure rate of 2.1% (2/94) and allograft interposition was 1.5% (3/198). Failure and reoperation occurred at an average of 11 months from the index procedure (range, 6-17 months). 88.7% of patients rated their overall satisfaction as excellent or good. Average preoperative VAS score was 8.2 ± 1.5 (range, 6 to 10) and 2.1 ± 1.6 (range, 0 to 7) at latest follow-up, and (79.1%) patients reported tolerance to fashionable shoes. There were no major wound complications. The most common complications were metatarsalgia (8.6%) and cock-up deformity (5.7%).

Conclusion: Interpositional arthroplasty demonstrated excellent long-term survivorship and high patient satisfaction at long-term follow-up.