Intermediate-term Clinical Outcome of Hemiarthroplasty for Hallux Rigidus
Tran Tran, DPM, Jana Balas, DPM, Lori Drake, DPM, Candace Masso, DPM, Emily Sanphy, DPM, Matthew Engelthaler, DPM Donald Adams, DPM, FACFAS
MetroWest Medical Center, Framingham, MA

INTRODUCTION

An intermediate-term retrospective analysis was performed to investigate the range of motion, radiographic assessment, and patient satisfaction using American Orthopaedic Foot and Ankle Society (AOFAS) Hallux Metatarsophalangeal (HMP) and Intermediate Metatarsal Head (IMH) Scores. The study included 36 patients with MTPJ arthroplasty with hemi implant. The authors defined an intermediate-term as 3-6 year follow up.

LITERATURE REVIEW

Hemi implants have been available since 1952. A long-term follow up study by the first hemi implant inventor himself, Charles O. Townley, reported 95% of 279 patients that underwent metallic hemiarthroplasty had good or excellent clinical results in a follow up ranging from 8 months to 33 years (1). While a long-term study of such caliber is impressive, there could be bias due to the author being the creator of the product. Several studies report short-term follow up of first MTPJ arthroplasty with hema metallic prosthesis for hallux rigidus with results based on subjective and objective outcomes. Salonga et al reported 79 procedures with follow up ranging 1.6 to 4.5 years (2). Roukis et al compared hemaarthroplasty with prosthesis and arthrodeses utilizing radiographic and clinical outcomes. The study reported average follow of 16 years while first MTPJ arthroplasty was performed on 9 feet and patients were followed up at one year postoperatively. The study emphasized the results with slight preference of the hema implant arthroplasty (3). Additionally, Simons et al compared 46 hemiarthroplasty outcomes with an average of the last 3 years with an average follow up of 58.4 months and 39.8 months, respectively (4). All aforementioned studies reported good overall positive clinical findings and corresponding favorable AOFAS scores which emphasizes the hypothesis originally stated.

RESULTS

Fifteen patients (16 limbs) met the inclusion criteria. The age at the time of intermediate-term follow up ranged from 54 to 82, with an average age of 65.6. Range of follow up was between 3 to 6 years, with average follow of 48.7 months (or about 4 years). Eight right limbs and 8 left limbs had the metallic hema implant inserted after a Keller arthroplasty procedure was performed. The average AOFAS score was 83.25 and ACFAS score was 79.63. Table 1 shows the ACFAS Universal Evaluation Scoring System and each component of the assessment. Image 1 demonstrates a patient that fails the hallux purchase test that was assessed in functional portion of the evaluation. Image 2 is an example of a radiograph taken in the office to obtain radiographic measurements. Following the audit, it was found that 26 patients (28 limbs) from February 2010 until February 2013 had a first MTPJ arthroplasty with metallic hema implant. Of these 26 patients, 1 patient was deceased, 3 moved to a different state, 3 patients declined follow up, and 4 were lost to follow up.

CONCLUSION

The intermediate-term outcomes in a first MTPJ arthroplasty with metallic hema implant showed favorable results overall patient satisfaction shown with the AOFAS and ACFAS scores. The first MTPJ arthroplasty with hema implant is a favorable procedure allowing postoperative benefits such as immediate weight bearing and an increase range of motion post-operatively. This investigation provides additional evidence to the current literature in determining the most appropriate treatment for first metatarsophalangeal pathologies.

The strengths of this study includes long term follow-up of 3-6 years with clinical and radiographic evaluation. The limitations of this study include patients in the intermediate-term review inability to retain follow-up. A larger study group would provide a more accurate result of the long term outcome of the implant. The author’s failed to take into consideration any concomitant procedures that were performed such as arthroplasty/arthrodesis of the lesser toes, Web syndromes, or in the case of one patient, a Cotton procedure.

Level of evidence: Level 3

REFERENCES