Joint Preservation in the Surgical Treatment of Hallux Valgus in Rheumatoid Arthritis

Presenting:
Stephen L. Tocci, MD
Dallas, Texas

Additional Authors:
Daniel Charlick, MD
James W. Brodsky, MD

MTP joint-preserving surgeries in patients with rheumatoid arthritis historically have been judged less successful because of presumed high rates of recurrent deformity and progressive joint destruction by the ongoing inflammatory process. There is only one report in the literature regarding joint-preserving surgery for hallux valgus in rheumatoid patients, and which concluded that the risks and results warranted only joint-sacrifice using 1st MTP arthrodesis. In this study, it is demonstrated that with a well-preserved or even moderately preserved hallux MTP joint, hallux valgus in RA can be successfully treated with the same kind of bunion surgeries used for HV in non-rheumatoid patients.

BACKGROUND
The most common surgery advocated for the treatment of hallux valgus in patients with rheumatoid arthritis (RA) has been first metatarsophalangeal joint (MTP-1) arthrodesis, especially among US surgeons. The second most common, more predominantly in Europe, has been Keller-type resection. Both procedures sacrifice the joint. Bunion surgeries, which preserve the MTP-1 joint, have been proscribed because of presumed high rates of recurrent deformity and presumed subsequent, progressive joint destruction by the ongoing inflammatory process of the rheumatoid arthritis. This preliminary retrospective study was undertaken to evaluate the early and mid-term radiographic results of joint-preserving surgery for hallux valgus in rheumatoid arthritis.

MATERIALS AND METHODS
Twenty patients underwent MTP-1 preserving surgery on 28 feet for hallux valgus associated with rheumatoid arthritis. Twelve feet had concomitant reconstruction of the lesser MTP joints and hammertoes. All 28 underwent a modified McBride joint realignment procedure and concomitant first metatarsal osteotomy. Seventeen additionally had 1st proximal phalanx Akin-type osteotomy. Patients with minimum 1-year follow-up were included. Radiographic measurements of the hallux valgus angle (HVA) and the 1-2 intermetatarsal angle (IMA) were evaluated based on standing radiographs, using the measurement technique of Coughlin and Freund1. Radiographs were assessed for progression of joint destruction as measured by joint space narrowing of the MTP-1, according to a 4-level grading system (0=none, 1= mild, 2= moderate, 3= severe). Rates of revision surgery, and complications were compiled. Statistical significance was calculated using the Student t-test.

RESULTS
The average follow-up was 31.9 months (12-72.5 months). The hallux valgus angle (HVA) decreased from 37° (27°-52°) to 16.8°(0°-30°) at the most recent postoperative follow-up (p=0.000000000003). The reduction in the 1-2 Intermetatarsal angle (IMA) was from 13.8° (5°-21°) to 4.6° (-1°-12°) (p=0.0000000000004). Preoperatively, the MTP-1 joint space narrowing was described as none in 7 joints, mild in15 joints, and moderate in 6 joints. At the most recent follow-up, the MTP-1 arthritis was described as none in 1, mild in 14, and moderate in 13 joints. One patient developed hallux varus requiring MTP fusion. Three patients developed recurrent hallux valgus, of which one subsequently underwent revision bunion correction and one underwent MTP fusion.
CONCLUSIONS
To the best of our knowledge, there is only one report, of 8 patients, in the literature regarding joint-preserving bunion surgery for hallux valgus in rheumatoid patients. It concluded that the outcomes were too poor to recommend bunion surgery in RA, and that 1st MTP arthrodesis remained the best, if not only option. In this preliminary study, it is demonstrated that with a well-preserved or even moderately-preserved hallux MTP joint, hallux valgus in RA can be successfully treated, at least in the mid-term, with joint-preserving bunion surgeries. The success of this procedure may be attributable in large part, to the wide-spread use of the disease-modifying pharmacologic agents for rheumatic disease. Further research, including prospective studies are underway to determine the longer-term efficacy and durability of joint-preserving surgery for hallux valgus in rheumatoid arthritis.
