

## Abstract

We retrospectively investigated the mid-term outcomes of arthroplasty using the AVANTA silicone implant for thumb metacarpophalangeal (MCP) joints with boutonniere deformity in patients with rheumatoid arthritis (RA). This study involved 36 thumbs of 33 RA patients with a mean follow-up period of 5.1 years (range 2.0–13.3). Postoperatively, the mean extension was significantly increased and the mean flexion was significantly decreased ( $p < 0.001$ ,  $p < 0.001$ , respectively), resulting in the mean arc of range of motion (ROM) shifting in the direction of extension after surgery. Implant fracture was observed in 10 thumbs (28%), and 4 of these (11%) underwent revision surgery. The survivorship with implant fracture and revision surgery as endpoints were 73.4% and 91.8% at 5 years, respectively. The preoperative arc of ROM and the postoperative flexion arc of the implant-fracture group were significantly greater than those in the no-implant-fracture group ( $p = 0.039$ ,  $0.034$ , respectively). These results suggest the importance of patient education and careful rehabilitation to prevent excessive flexion. Overall, the AVANTA silicone implant showed a relatively high rate of implant fracture at our institute.