Minimum 10-year Clinical Follow-up of Anatomic Shoulder Arthroplasty for Primary Glenohumeral Arthritis

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Abstract

Introduction: End-stage glenohumeral arthritis is commonly managed with shoulder arthroplasty, but reports on long term outcomes and failures are uncommon. The purpose of this study is present minimum 10-year clinical outcomes of patients undergoing ream-and-run and anatomic total shoulder arthroplasty for primary glenohumeral arthritis.

Methods: This study analyzed consecutive patients that had undergone a ream-and-run or an anatomic total shoulder arthroplasty (TSA) with minimum 10-year follow-up. The VAS pain score and Simple Shoulder Test (SST) values were obtained preoperatively and at a minimum of 10 years postoperatively. VAS pain and SST scores were collected at 10 years, and the percentage of maximum possible improvement (%MPI) was also calculated.

Results: Of 127 eligible patients, 63 (50%) responded to a 10-year survey. This included 34 patients undergoing ream-and-run arthroplasty and 29 patients undergoing TSA. The ream-and-run patients were significantly younger than the TSA patients (60 ± 7 vs 68 ± 8, p<0.001) and were predominantly male (97% vs 41%, p<0.001). In the ream-and-run group, the mean VAS pain score improved from a pre-operative value of 6.5 ± 1.9 to 0.9 ± 1.3 (p < 0.001), and the mean SST score improved from 5.4 ± 2.4 to 10.3 ± 2.1 at 10-year follow-up (p < 0.001). 28 (82%) achieved an SST improvement above the MCID of 2.6. Four patients (12%) underwent
single-stage exchange to another hemiarthroplasty, while 1 (3%) required a manipulation under anesthesia. In the TSA group, the VAS pain score improved from a pre-operative value of $6.6 \pm 2.2$ to $1.2 \pm 2.3$ ($p < 0.001$), and the SST score improved from $3.8 \pm 2.6$ to $8.9 \pm 2.6$ at 10-year follow-up. ($p < 0.001$). Of the 29 patients who underwent a TSA, 27 (93%) achieved an SST improvement above the MCID of 1.6. No patient in the TSA group required reoperation.  

**Conclusion:** Excellent and durable functional results can be obtained with the ream-and-run arthroplasty and total shoulder arthroplasty for glenohumeral osteoarthritis.