

Does Age Affect Objective and Subjective Functional Scores after Shoulder Arthroplasty?

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INTRODUCTION:

Anatomical total shoulder arthroplasty (aTSA) has been shown to result in greater range of motion than reverse shoulder arthroplasty (RSA). However, as patients age, it is expected that both overhead range of motion and patient functional needs will decline. We hypothesized that at some age, the functional results of TSA and RSA would be equivalent, due to natural changes of the aging shoulder. To evaluate this hypothesis, we compared how objective and subjective functional scores of aTSA and RSA were affected by age when evaluated as a continuous variable.

METHODS:

We retrospectively reviewed prospectively collected data from 1,059 primary TSAs and 747 primary RSAs performed for osteoarthritis (OA). Patients between 55 and 85 years old were included (mean age aTSA: 68 years old \pm 6.8; mean age RSA: 72 years old \pm 6.6). All procedures were performed using a single platform implant system. Range of motion (forward elevation (FE), abduction, external rotation (ER), internal rotation (IR)), and functional outcome scores were evaluated at a minimum two-year follow up. Both objective and functional outcome scores were compared between aTSA and RSA using age as a continuous variable.

RESULTS:

Postoperative overhead range of motion declined as patient age increased. This trend occurred after the age of 70 for patients treated with aTSA and after 76 for those treated with RSA. Specifically, for forward elevation, postoperative motion was similar between TSA and RSA beginning at age 65 and continuing until 85. TSA maintained greater abduction regardless of patient age. ER and IR remained relatively stable until age 80, with TSA maintaining slightly higher range of motion. As patients aged, postoperative pain was noted to be significantly higher for patients treated with aTSA compared to RSA at all ages. Despite the small differences in motion, outcome scores demonstrated similar performance regardless of age and implant type.

DISCUSSION AND CONCLUSION:

aTSA demonstrates maintained benefits of abduction compared to RSA in patients treated for OA at all ages. However, more functional postoperative FE does diminish overtime and is similar to RSA outcomes after age 65. Despite loss of FE with increasing age, the functional benefits of both prostheses are similar at all ages.