Shoulder Arthroplasty in Patients Younger than 50 Using Contemporary ImplantsIs Associated with Promising Low Revision Rates

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Introduction. The indications and accessibility of shoulder arthroplasty (SA) continue to expand with favorable long-term outcomes. However, when critically evaluating the literature, this data is not as applicable to younger patients who are typically far more active and present with different needs in the near term and with respect to implant longevity. The purpose of this study was to determine the survivorship, complication and revision rates of shoulder arthroplasty when performed in patients younger than 50 years of age.

Methods. Adult patients who underwent SA between 2010 and 2020 when they were under the age of 50 and had been followed for a minimum of 2 years were identified within our institutional Total Joint Registry database. There were 149 primary SAs in 139 patients with a mean age of 41 years. These included 51 hemiarthroplasties (HA), 80 anatomic total shoulder arthroplasties (aTSA), and 18 reverse total shoulder arthroplasties (rTSA). 78 shoulders (55%) had undergone at least one prior procedure on their shoulder before arthroplasty. The mean follow up was 6 years, and 31 patients had been followed for over 10 years.

Results. The overall reoperation rate was 17% (n = 26). Revision SA alone had been performed in 13% (n = 20) of shoulders while 3% (n = 5) had undergone one arthroscopic procedure after arthroplasty and one had undergone subscapularis repair at an outside institution. The revision rate was 22% for HA (n=11), and 11% for aTSA (n=9), whereas at most recent follow-up no rTSAs had been revised. The mean time to revision was 5.5 years for HA and 6.4 years for aTSA. Deep infection occurred in 5 shoulders (3%), but 2 of those shoulders represented the second stage of two-stage reimplantation due to known infection at the time of their index SA.

Conclusion. Shoulder arthroplasty for patients under 50 can lead to acceptable mid-term implant survivorship, despite this cohort likely presenting with increased demands. Long term follow-up of these patients is critical, but survivorship is encouraging. Although the number of shoulders that received rTSA was somewhat limited, not a single rTSA was revised, which is also encouraging for the young patients who may benefit the most from rTSA.

Reoperations n, (%)	HA	aTSA	rTSA	Total
	n=51	n=80	n=18	n=149
Any Surgery	11 (22)	14 (18)	1 (6)	26 (17)
Revision	11 (22)	9 (11)	-	20 (13)
Open Subscapularis Repair	-	1 (1)	-	1 (1)
Arthroscopic Biopsy	-	1 (1)	1 (6)	2 (1)
Arthroscopic Contracture Release	-	3 (4)	-	3 (2)