ISSUE 08

SHARC BITE

AGE CONSIDERATIONS IN ANATOMIC TSA

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Mission Statement

The Shoulder Arthroplasty Research Committee (ShARC) is a forward-looking global collaboration among research-focused surgeons of which the primary goal is to advance patient care. The ShARC Patient Registry is utilized to conduct patient monitoring, inform evidence-based implant design, and allow for the integration of novel technologies into clinical practice. Supported by Arthrex, the ShARC will continue to have tremendous influence on the advancement of shoulder arthroplasty through innovative research and a commitment to improve patient outcomes.

ShARC Bites are developed through registry data analysis and processing of the committee's preferences, cross-referenced with available ShARC and non-ShARC publications, to provide recommendations on current techniques and implants.

Summary Recommendation

Ninety-eight percent of ShARC surgeons would consider performing anatomic total shoulder arthroplasty (aTSA) with a stemless implant in a patient age 70 or older given that they are appropriately indicated with good bone quality, little glenoid deformity, and an intact rotator cuff. Furthermore, most surgeons either did not take patient sex or activity level into account, or were more likely to place a stemless humeral component in male patients and in those whose activities placed greater physical demands on their shoulder.

Background

Data from a large national registry has demonstrated that stemless humeral components are the most widely used when performing aTSA.[1] Stemless implants have been shown to offer several advantages over traditional stemmed implants, including shorter operative time[2,3] and reduced blood loss.[3] ShARC publications have demonstrated that stemless components are easier to revise,[4] more reliably reestablish the center of rotation,[5] and result in less early postoperative pain[6] compared to aTSA using stemmed humeral implants.

One potential concern with stemless TSA is the ability to achieve appropriate fixation in older patients in whom bone quality may be poor. In a study of patients over the age of 70 who received a stemless implant relying on metaphyseal impaction fixation, Baumgarten et al noted no difference in outcome scores compared to patients under 70.[7] Another study looked at the results of using the Arthrex Eclipse™ stemless humeral implant in a cohort of patients over the age of 70 and also reported excellent outcome scores. The authors found similar rates of radiolucent lines compared to younger patients, with only one revision in the older patient cohort due to a subscapularis failure.[8] Furthermore, the authors noted that patients over 70 who underwent aTSA with an Eclipse stemless humeral component had higher outcome scores compared to a younger control group with an average age of 59. A significantly higher percentage of patients over 70 achieved the minimum clinically important difference (MCID) for the ASES and WOOS scores when compared to their younger counterparts.[8]

Comparison of 2-Year Outcomes

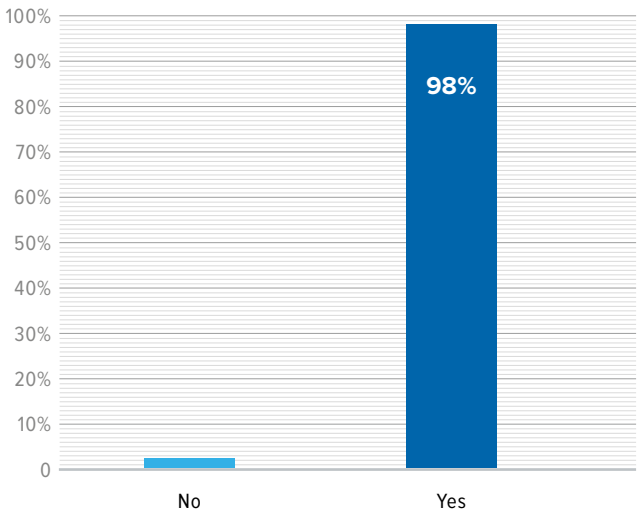
	Study Group: Age > 70 (n = 37)		Matched Controls: Age ≤ 65 (n = 37)		
	Mean	Standard Deviation	Mean	Standard Deviation	*P*
VAS Pain	0.4	0.6	1.4	2.1	.007
ASES	93.5	7.3	82.9	19.5	.003
WOOS	96.4	4.9	83.8	19.8	<.001
Constrant-Murley	88.0	14.5	74.3	17.8	<.001
VR-12 Mental	55.5	6.6	51.7	11.7	.090

Data from Dillon et al.[8]

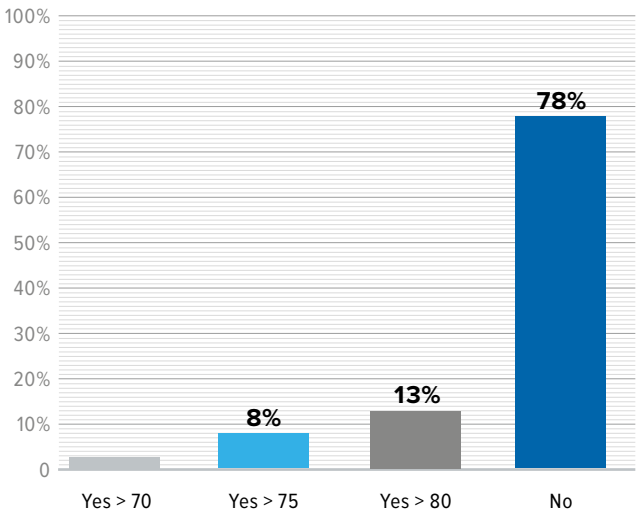
Recently there has been increased utilization of reverse TSA in patients with glenohumeral osteoarthritis and an intact rotator cuff.[9] However, aTSA may better facilitate the return to recreational sporting activities in this population, which is often an important consideration in older patients. A recent meta-analysis demonstrated that 79.2% of patients returned to golf after shoulder arthroplasty, with 75.6% returning to swimming. However, the authors noted a lower rate of return to sports with reverse TSA.[10]

ShARC Survey Data

Would you consider performing aTSA with a stemless humeral component in a patient age 70 or older provided there was good bone quality, little glenoid deformity, and a healthy rotator cuff?

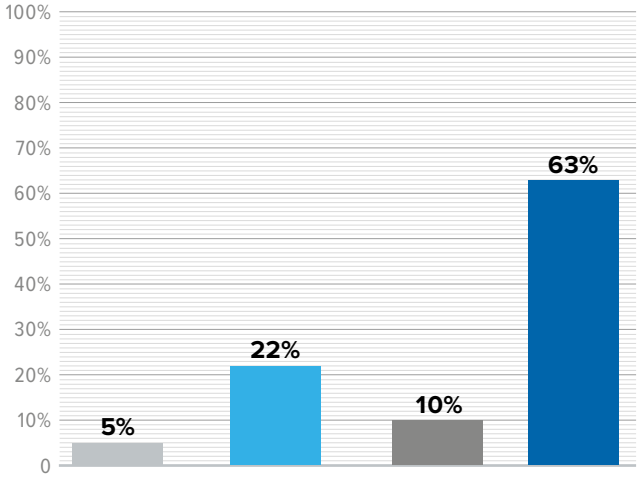


Do you have a relative age cutoff for not preforming a stemless aTSA?



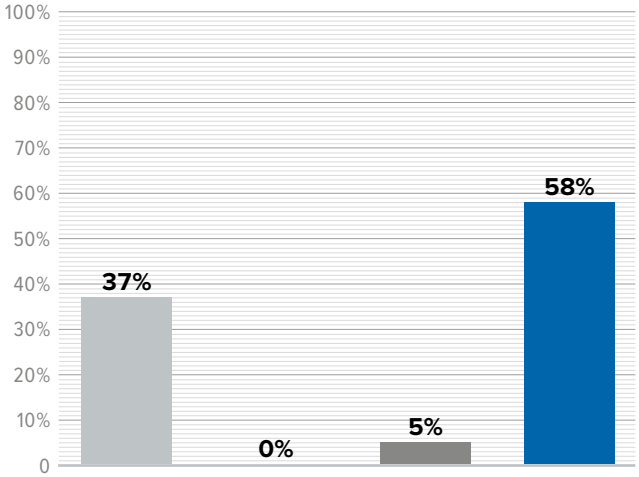
Nearly all ShARC surgeons surveyed would consider performing aTSA with a stemless humeral component in a patient over the age of 70 provided there was good bone quality, little glenoid deformity, and a healthy rotator cuff. Furthermore, 78% of those surveyed did not have an age cutoff when considering stemless aTSA.

Does the sex of the patient matter when deciding to perform aTSA with a stemless humeral component in a patient age 70 or older?



- More likely in a **female** over age 70 **(5%)**
- More likely in a **male** over age 70 **(22%)**
- Would not implant in a patient over age 70, regardless of sex **(10%)**
- The sex of the patient does not matter **(63%)**

Does the activity level of the patient matter when deciding to perform aTSA with a stemless humeral component in a patient age 70 or older?



- More likely in a patient over age 70 and **more active (37%)**
- More likely in a patient over age 70 and **less active (0%)**
- Would not implant in a patient over age 70, regardless of activity level **(5%)**
- The activity level of the patient does not matter **(58%)**

When looking at specific patient characteristics, over 60% of those surveyed did not take sex into account when deciding whether to place a stemless humeral component in a patient over 70, with an additional 22% of respondents being more likely to place a stemless implant in a male patient. When considering activity level, the overwhelming majority (95%) of surgeons either did not take activity level into account or were more likely to use a stemless aTSA in more active patients over 70 years of age.

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