

Older Patients With Large Rotator Cuff Tears Achieve Equally High Outcomes as Younger Patients

Poster #: 76

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Disclosure Information:

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Objective

The purpose of this study was to evaluate the relationship between patient age and patient-reported outcomes of function, quality-of-life, and satisfaction following arthroscopic rotator cuff repair.

Increasing age has been proposed as a risk factor for failure of rotator cuff repair. Aging has been shown to impact tendon healing²³, ranging from 87.8% healing in patients below the age of 50 to 65.4% healing in patients above the age of 61.²

We looked to explore this idea by comparing patient-reported outcomes between age groups.

Rotator Cuff Healing Index Score (ROHI) Kwon et al.

TABLE 3
Prognostic Factors Associated With Rotator Cuff Healing in the Multivariate Analysis (Stepwise Forward: Conditional)^a

	<i>P</i> Value	OR	95% CI	Points in RoHI
Age >70 y	.003	2.71	1.39-5.27	2
AP tear size >2.5 cm	.033	1.94	1.06-3.58	2
Retraction, cm	<.001			
<1				0
1 to <2	.528	1.64	0.35-7.62	1
2 to <3	.065	4.40	0.91-21.02	2
≥3	.02	12.90	2.48-66.69	4
Infraspinatus fatty infiltration, grade ≥2	.001	2.91	1.58-5.34	3
BMD, ≤ -2.5	.040	1.95	1.03-3.68	2
Level of work activity, high	.036	2.18	1.05-4.50	2

^aAP, anteroposterior; BMD, bone mineral density; OR, odds ratio; RoHI, Rotator Cuff Healing Index.

Methods

- Patients who underwent arthroscopic RCR by a single surgeon between January 2015 and December 2019 were retrospectively reviewed for inclusion in the study.
- Primary outcomes: ASES, SST, EQ5D-5L, VAS scores, and a site-specific questionnaire for patient satisfaction.
- Secondary outcomes: rotator cuff tear sizes- calculated as the total combined tear area of the supraspinatus, infraspinatus, and subscapularis (cm²)
- Patients were separated into four groups by age: under 50 years old, 50-59 years old, 60-69 years old, and 70 years old and above.
- Multivariate analysis of variance (MANOVA) were performed for all parametric data to determine differences between groups, and Kruskal Wallis tests were performed for non-parametric data.

Patient Demographics

A total of 289 patients met eligibility to be included in the study and were evaluated at a minimum two-year follow up: under 50 (n=19), 50-59 (n=71), 60-69 (n=133), 70 and above (n=66).

Table 1: Patient Demographics

Patient Age Groups	Total	<50	50-59	60-69	≥70
Number of Patients	289	19	71	133	66
Mean age, y	63.3 (range 28.4 to 83.8)	43.9	55.9	64.8	73.7
Operative Shoulder, right/left	65.0%/35.0%	57.9%/42.1%	69%/31%	67.7%/32.3%	57.6%/42.4%
Sex, male/female	56.4%/43.6%	47.4%/52.6%	53.5%/46.5%	60.2%/39.8%	55.5%/45.5%

Results

Table 2: Mean patient-reported outcome measures by age group (mean \pm standard deviation)

	<50 (n=19)	50-59 (n=71)	60-69 (n=133)	≥ 70 (n=66)
Pain VAS Score*	0.32 \pm 0.67	0.58 \pm 1.16	0.68 \pm 1.60	0.45 \pm 0.95
ASES	97.95 \pm 3.36	94.36 \pm 9.99	93.27 \pm 15.26	94.01 \pm 9.49
SST	11.84 \pm 0.38	11.13 \pm 1.49	11.05 \pm 2.21	10.45\pm2.17^a
EQ5D5L VAS	86.42 \pm 6.75	80.13\pm19.59^b	86.45 \pm 12.06	82.45 \pm 15.78
EQ5D5L Index	0.89 \pm 0.14	0.86 \pm 0.14	0.88 \pm 0.13	0.88 \pm 0.13

^asignificantly less than <50 group (p=0.044)

^bsignificantly less than <50 group (p=0.025) and 60-69 group (p=0.025)

ASES = American Shoulder and Elbow Surgeons Score, SST = Simple Shoulder Test

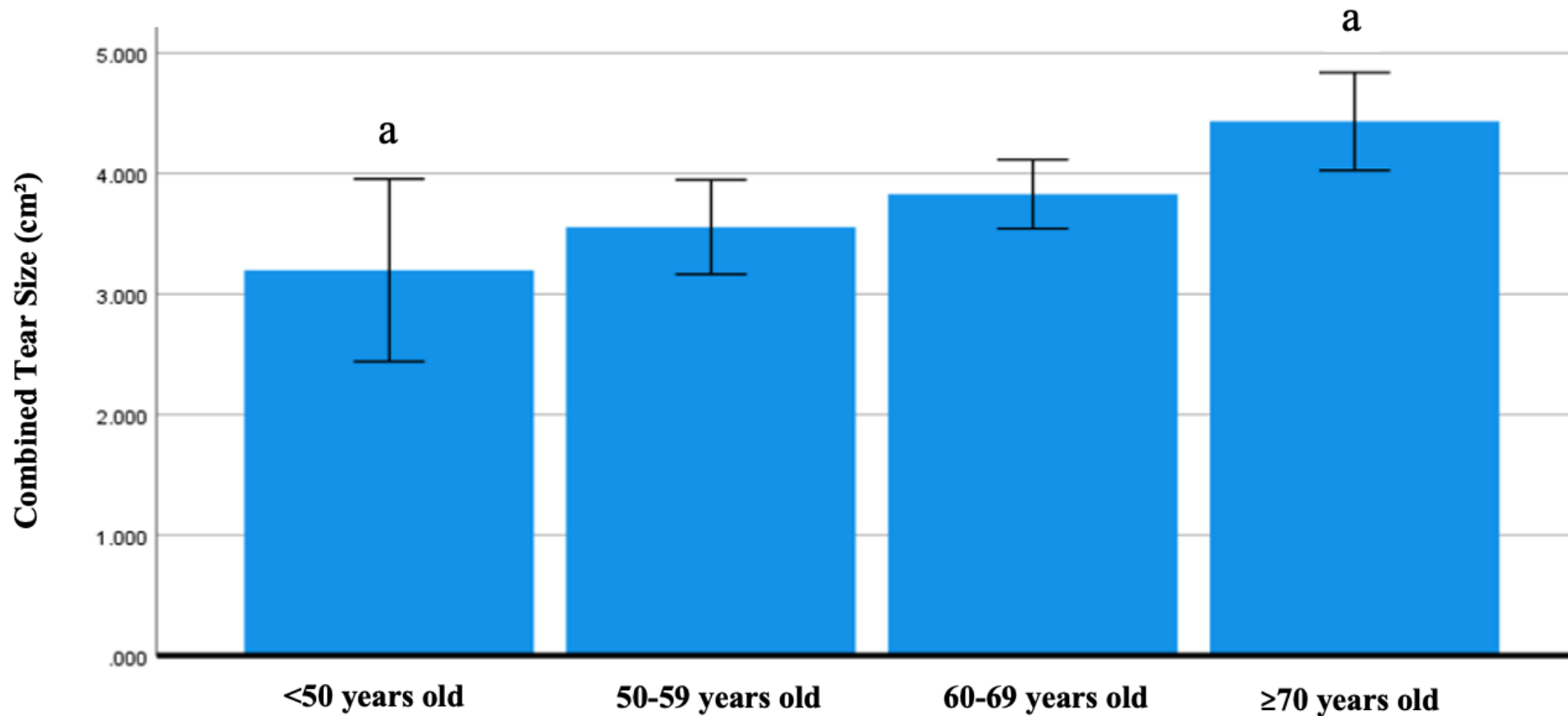
Results – Patient Satisfaction

Table 4: Outcome satisfaction for all patients (n=289) and by age group

	Total % ±SD	<50	50-59	60-69	≥70
Were your expectations of this surgery met? (% Yes)	93.7±1.89	92.10%	94.40%	93.40%	94.10%
Are you satisfied with your outcome? (% Yes)	93.3±1.95	91.10%	94.60%	92.70%	93.60%
Any complications in the first year after shoulder surgery? (% Yes)	10±0.31	1.60%	0.85%	1.13%	0.91%
Do you feel like you made a full recovery? (% Yes)	91±0.29	94.70%	90.10%	90.20%	91.00%
If you could go back in time, would you still have the surgery again? (% Yes)	97±0.17	89.50%	97.20%	97.00%	98.50%

Results – Tear sizes

Figure 1: Combined average tear size per age group



a= Statistically Significant difference (p=0.043)

Results

- Patients under the age of 50 had significantly smaller tear sizes ($3.20 \text{ cm}^2 \pm 3.30$, $p=0.043$) and significantly higher SST scores (11.84 ± 0.375 , $p=0.044$) compared to patients over the age of 70 ($4.43 \text{ cm}^2 \pm 3.53$ and 10.45 ± 2.17 respectively).
 - Despite this, the youngest group seemed to be least satisfied
- There were no significant differences between age groups for ASES scores which averaged 94.01 ± 12.38
- There were no significant differences found for the EQ-5D-5L index and the site-specific pain VAS regardless of age

Results

- No significant differences in site-specific questionnaire scores between age groups
 - all patients averaged 9.4 out of 10 when asked if their surgical expectations were met
 - 9.33 out of 10 for overall outcome satisfaction

Interestingly...

- 98.5% of patients over the age of 70 reported that they would have the surgery again vs 89.5% of patients under the age of 50
- 93.6% of patients over the age of 70 were satisfied with their outcome vs 91.1% of patients under the age of 50

Conclusions

- **Despite having larger tear sizes, patients over the age of 70 achieved similar outcomes and satisfaction with their RCR surgery compared to younger patients**
- Overall, patients scored well on outcomes and were found to be satisfied with their RCR procedure regardless of age
- There were no significant differences in site-specific questionnaires and the majority of PROMs
- Patients were overall very satisfied with the procedure, having few complications, and perceiving a full recovery

Significance

- Despite being considered a risk factor for failure, patients >70 years old reported similar outcomes as younger patients despite having larger tear sizes
 - Limitation of this study- we did not evaluate anatomic healing
- Expectations may be more difficult to achieve in younger vs older patients following rotator cuff repair

References

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Thank you