Sex-Based Differences in Postoperative Outcomes for Patients Undergoing Primary Arthroscopic Shoulder Surgery for Complete Rotator Cuff Repair: A Propensity Matched Analysis

Ronak J. Mahatme[1], Peter F. Monahan[2], Michael S. Lee[3], Stephen M. Gillinov[4], Nancy Park[4], Katherine J. Coyner[5], Andrew E. Jimenez[4]
[1]University of Connecticut School of Medicine, Farmington, CT, [2]Penn State College of Medicine, Hershey, PA, [3]Medical College of Wisconsin, Milwaukee, WI, [4]Department of Orthopaedics and Rehabilitation, Yale School of Medicine, New Haven, CT, [5]Department of Orthopaedic Surgery, UConn Musculoskeletal Institute, University of Connecticut, Farmington, CT
mahatme@uchc.edu

Disclosures: Ronak J. Mahatme (N), Peter F. Monahan (N), Michael S. Lee (N), Stephen M. Gillinov (N), Nancy Park (N), Katherine J. Coyner (N), Andrew E. Jimenez (N)

INTRODUCTION: There is a paucity of literature examining sex-based differences in outcomes of arthroscopic shoulder surgery for complete rotator cuff (RC) tears. Previous studies have shown that female patients report greater pain and decreased shoulder function during the first 3 months following complete RC repair while male patients have greater rates of revision rotator cuff repair at 2-year follow-up. The purpose of this study is to evaluate sex-based differences in postoperative outcomes for patients undergoing primary arthroscopic shoulder surgery for complete RC repair using a large national database.

METHODS: A retrospective analysis was conducted using the TriNetX web-based research network (Cambridge, MA, USA). Patients were queried using a combination of International Classification of Disease-10 (ICD-10) and Current Procedural Terminology (CPT) codes. Patients were included in the query if they underwent arthroscopic shoulder surgery with complete RC repair (CPT 29827) with a corresponding diagnosis of complete RC tear (ICD-10 M75.12). Patients with prior RC tears and/or prior arthroscopic shoulder surgery were excluded. Male and female cohorts were propensity-matched for age at initial injury, nicotine dependence (ICD-10 F17), diabetes mellitus (ICD-10 E08-E13), and obesity (ICD-10 E66) within 1 year of their primary complete RC tear diagnosis. Rates of emergency department (ED) visits at 5 and 14 days postoperatively, complications (subluxation/dislocation, pulmonary embolism, deep vein thrombosis or infection) at 1-month postoperatively, and revision arthroscopic rotator cuff repairs at 1-year and 2-years postoperatively were analyzed. Statistical significance was set as $P < .05$.

RESULTS: After querying the database, 138,988 patients were identified of which 76,822 were male (55.3%). Ultimately, 61,192 female patients were propensity-matched to a comparable cohort of 61,192 male patients. Males had significantly greater rates of collective postoperative complications compared to females at 1-month postoperatively (0.85% versus 0.63%; $P < .0001$). Females had significantly greater rates of ED visits compared to males within 14 days postoperatively (2.69% versus 2.45%; $P = 0.0075$). Males had significantly greater rates of revision arthroscopic rotator cuff repair compared to females at 1-year postoperatively (5.04% versus 4.76%; $p = 0.0261$).

DISCUSSION: In this study of sex-based differences in outcomes of primary arthroscopic shoulder surgery for complete RC tears, female patients had higher rates of ED visits in the early postoperative period compared to propensity matched male counterparts. However, within 1 year postoperatively, male patients had higher rates of revision arthroscopic surgery. These significant differences may be used to educate both males and females on reasonable postoperative expectations following complete RC repair.

SIGNIFICANCE/CLINICAL RELEVANCE: Sex-based differences in postoperative outcomes for patients undergoing primary arthroscopic shoulder surgery for complete rotator cuff repair may be used to educate both males and females on reasonable postoperative expectations.

IMAGES AND TABLES:

	Cohort (n)	**Patients w/ ED Visit (n)**	**Risk (%)**	**p-value**
5 Days				
Females	61192	1061	1.734	.4138
Males	61192	1024	1.673	
14 Days				
Females	61192	1648	2.693	**.0075**
Males	61192	1500	2.451	

Table 1. ED Visits within 5 and 14 days post-operatively

	Cohort (n)	**Patients w/ Revision Repair (n)**	**Risk (%)**	**p-value**
1 Year				
Females	61192	2914	4.762	**0.0261**
Males	61192	3082	5.037	
2 Year				
Females	61192	3737	6.107	0.0526
Males	61192	3901	6.375	

Table 2. Revision arthroscopic rotator cuff repairs within 1-year and 2-years post-operatively