

Impact of Initial Rotator Cuff Repair on Patient Decision-Making and Incidence of Contralateral Surgery: A Minimum 10-Year Follow-Up Study

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INTRODUCTION: The presence of a symptomatic rotator cuff tear in one shoulder raises concern for concurrent or future risk of the development of similar pathology in the contralateral shoulder. A common clinical question is what is the long-term likelihood of getting surgery on the contralateral shoulder following rotator cuff repair on the first. The purpose of this study was to evaluate the incidence of symptoms and surgical intervention on the contralateral shoulder with a minimum of 10-year follow-up, and did the outcomes of the first rotator cuff repair (RCR) influence patient decision-making for undergoing surgery on the contralateral shoulder.

METHODS: Adult patients who underwent RCR by a single surgeon with a minimum of 10-year follow-up between 2007 and 2014 were retrospectively contacted for study participation. Patients with worker's compensation status, confounding neurologic pain symptoms, or had their initial RCR with a different surgeon were excluded. Outcomes included the incidence of contralateral rotator cuff debridement or repair, biceps surgery, distal clavicle excision, subacromial decompression (SAD), capsular release/manipulation (CRM), and synovectomy with a minimum of 10 years since the initial surgery, as well as American Shoulder and Elbow Surgeons (ASES) score, Simple Shoulder Test (SST), and a site-specific questionnaire for patient satisfaction and decision-making regarding the contralateral shoulder. Surgical characteristics including tear size, tendon involvement, and concomitant procedures were recorded from operative notes. Patients were grouped into either the Unilateral group (ipsilateral RCR), or Contralateral group (underwent contralateral RCR during the follow-up period). Descriptive statistics were calculated using JMP Pro 18.0.1.

RESULTS: Outcomes for each group are reported in Tables 1 and 2. In total, 94 eligible patients enrolled in the study and were evaluated at least 10 years postoperatively. Of the 94 patients, 32 (34.0%) underwent RCR on the contralateral shoulder with a minimum of 10-years since their initial RCR. The average time between initial and contralateral RCR was 3.9±2.7 years. 87.5% (n=28) of patients in this group reported their initial RCR positively influenced their decision to undergo RCR on the contralateral shoulder. Assuming patients who had surgery were symptomatic, 62.8% (59/94) developed symptoms in their contralateral shoulder. Among the 62 patients in the unilateral RCR group, 40.3% (25/62) reported contralateral symptoms, and of these, 10 sought medical evaluation, receiving diagnoses such as rotator cuff tear (n=4), shoulder impingement (n=2), osteoarthritis (n=3), acromioclavicular joint disease (n=1), and cervical spine osteoarthritis (n=1). Notably, 8 of these 10 were recommended surgery and reported they were "more likely" to undergo a second RCR based on their prior surgical experience. Among those who underwent a second RCR (n=32), the vast majority (87.5%, 28/32) reported that their initial surgery positively influenced their decision.

Only one patient in the Unilateral group required additional intervention on the ipsilateral shoulder during the follow-up window, which was a closed reduction following a traumatic dislocation. Additionally, two patients in the Unilateral group underwent contralateral shoulder surgeries that were not RCR, specifically SAD, acromioplasty and debridement of low-grade tears. Three patients in the Contralateral group required additional surgery, including two additional revision RCRs to the primary shoulder and one reverse shoulder arthroplasty to the primary shoulder.

DISCUSSION AND CONCLUSION: At a minimum of 10 years follow-up, approximately one third of patients who had RCR on one shoulder underwent RCR on the contralateral shoulder, with most patients being positively influenced by their initial experience. Furthermore, 40% of subjects with unilateral repairs reported contralateral shoulder symptoms at a minimum follow-up.

Table 1. Patient outcomes by group (SD = standard deviation)

	Unilateral Group, n=62		Contralateral Group, n=32			
	Mean	SD	Primary RCR		Second RCR	
			Mean	SD	Mean	SD
Follow-up Time	10.31	0.38	11.25	1.74	7.39	3.18
Satisfaction	9.49	0.91	8.87	2.06	9.43	0.94
Pre-op Pain	7.80	1.97	7.97	1.40	7.90	1.70
Post-op Pain	2.37	3.10	1.87	2.91	2.18	3.30
Surgical ASES	90.49	15.57	85.97	20.77	89.01	16.38
Non-surgical ASES	89.57	17.06	-	-	-	-
SST Surgical	10.41	2.22	10.13	2.66	10.52	2.59
RC Tear Size (Supra), cm	3.03	2.56	3.55	3.20	3.88	3.43

Table 2. Need for additional surgical intervention by group

Unilateral Group, n=3	Contralateral Group, n=3
Closed reduction following traumatic dislocation to ipsilateral shoulder (1)	Revision RCR to primary shoulder (2)
SAD + acromioplasty + debridement of partial tear w/out RCR to contralateral shoulder (2)	RSA to primary shoulder (1)