

## Assessment of malpractice claims associated with rotator cuff surgery

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### Abstract

Rotator cuff surgery is a commonly performed and may lead to malpractice litigation. Despite this, there is a paucity of data evaluating outcomes of malpractice litigation following rotator cuff surgery.

A retrospective investigation of the VerdictSearch legal claims database following rotator cuff surgery was performed. Plaintiff demographics, reason for litigation, and the effect of surgical complications were assessed as were the proportion of plaintiff rulings and size of payments.

In total, 40 cases were analyzed. Mean age of plaintiffs was 52±11.2 years; 30 (75%) plaintiffs were male. Twenty-six cases (65% of suits) named pain and weakness as a complication of the procedure. In total, 60% (24) resulted in a defendant ruling, 25% (10) in a plaintiff ruling, and 15% (6) in a settlement. Total liabilities of the 40 cases were \$15,365,321 with individual awards ranging from \$75,000 to \$5,000,000. Mean plaintiff award was \$694,032±\$586,835 (range: \$75,000 to \$1,900,000). Mean settlement amount was \$1,404,167±\$1,816,481 (range: \$75,000 to \$5,000,000).

This study is the first examination of legal claims following rotator cuff surgery. Objective symptoms following surgery, such as decreased range of motion and rotator cuff weakness, as well as subjective complaints of pain and suffering were the most common reason for litigation, and when successful, led to indemnity payments averaging under \$1 million each.

### Introduction

Rotator cuff injuries are among some of the most common injuries treated by orthopedic surgeons. In the United States, approximately 4.5 million patients visit the

hospital each year with shoulder pain.<sup>1</sup> These patients arrive with conditions that range from pain syndromes to full-thickness tears, and treatment often requires surgical intervention.<sup>2</sup> Studies have shown that arthroscopic repairs of the rotator cuff are highly effective, even in the patients older than 70 years old.<sup>3,4</sup> However, return to previous activity and intensity occurs in only 70% of patients. Furthermore, patients who are unable to return to activity may be dissatisfied with their surgical result.

All doctors face possibilities of litigation, but recent studies have shown that orthopedic surgeons have an elevated risk, with 14% of orthopedic surgeons experiencing a lawsuit annually compared to the national physician average of 7%.<sup>5,6</sup> Given that complications are unfortunately a reality for orthopedic surgeons, it is useful to analyze the frequency and nature of orthopedic malpractice claims in order to help understand and potentially avoid litigation.

In this study, we sought to analyze litigation following rotator cuff repair. To date, there are no such studies in the United States. We described the most common reasons for malpractice claims and litigation following rotator cuff repair and evaluated factors that led to unfavorable rulings for the surgeon. Finally, we discuss techniques and strategies to help decrease the incidence of malpractice following rotating cuff repairs.

### Materials and Methods

#### Data collection

This study utilized a keyword query of the VerdictSearch (ALM Media Properties, LLC, New York, NY) database for cases between February 1988 to May 2015 (27 years). Of the 180,000 claims indexed in VerdictSearch, 22,074 represent cases of medical malpractice. This database has been previously used and validated in studies of compartment syndrome, primary hip and knee arthroplasty, and spinal surgery.<sup>7-10</sup> The database was queried using the terms *rotator cuff*, *shoulder arthroscopy*, and *shoulder instability*. Only cases whose primary procedure was a rotator cuff repair were included. Patients of all ages were included. Cases were excluded if there was missing or incomplete information. Demographic data collected for each patient included age, occupation, sex, and state in which the lawsuit was filed. Preoperative diagnosis, surgical complications, surgical procedure performed, and the medical specialty of the defendant were also recorded. Litigation outcomes were classified as defendant verdict (medical provider victo-

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ry), plaintiff verdict (medical provider loss), or settlement. In both settlements and plaintiff verdicts, the amount awarded (indemnity payment) was recorded.

#### Statistical analysis

For all cases, the proportion of cases reaching settlement and ending in physician loss was calculated along with the corresponding 95% confidence interval. The effects of the age of the plaintiff, sex of the plaintiff, surgical complications, operative site, specialty of the surgeon, hospital defendant named in the suit, delay in diagnosis, and delay in treatment were evaluated using chi-square testing (Microsoft Excel). Effect on the amount of indemnity payment was evaluated for all variables using Student's t-tests and 1-way ANOVAs. Statistical significance was set at P<0.05.

### Results

#### Case characteristics

Fifty-eight cases were examined; 18 cases were excluded due to irrelevance (e.g. primary indication was not a rotator cuff tear), and 40 cases were analyzed in detail

**Table 1. Malpractice suit case characteristics.**

Variable	No. (%) of cases
Mean age in yrs ( $\pm$ SD)	52 $\pm$ 11.2
Age not provided (no.)	2
Sex of plaintiff	
Female	10 (25)
Male	30 (75)
State	
California	11 (27.5)
New York	6 (15)
Virginia	5 (12.5)
Texas	4 (10)
Pennsylvania	3 (7.5)
Ohio	3 (7.5)
New Jersey	2 (5)
Florida	2 (5)
Georgia	2 (5)
Michigan	1 (2.5)
Illinois	1 (2.5)
Profession sued (no. of cases)	
Orthopedic surgery	26 (65)
Nonsurgical	14 (35)
Procedure	
Rotator cuff repair	40 (100)
Complications*	
Pain and weakness	26 (65)
Limited ROM	23 (57.5)
Death	5 (12.5)
Nerve Damage	4 (10)
Other <sup>o</sup>	16 (40)

\*34 patients (66.7%) had multiple complications listed; <sup>o</sup>Infection (6), anoxic brain injury (2), axillary nerve damage, ruptured splenic artery aneurysm, unsterilized instruments, urinary tract infection, ptosis, humeral fracture, early arthritis, greater tuberosity avulsion, shoulder dislocation, coracoclavicular ligament damage, hematoma.

**Table 2. Litigation outcomes.**

Outcome	No. (%) of cases
Defendant ruling	24 (60)
Plaintiff ruling	10 (25)
Settlement	6 (15)
Total	40

**Table 3. Complications following shoulder surgery.**

Complication	Number of lawsuits (%)	Settlement rate (%)	Physician loss rate (%)	Indemnity payment
Pain and weakness	26 (65)	3 (11.5)	8 (30.8)	\$679,909 $\pm$ \$586,992
Limited ROM	23 (57.5)	3 (13)	6 (26)	\$711,556 $\pm$ \$651,193
Surgical site infection	6 (15)	1 (16.7)	1 (16.7)	\$768,091 $\pm$ \$257,259
Death	5 (12.5)	3 (60)	0	\$2,900,000 $\pm$ \$2,969,848
Nerve damage	4 (10)	0	0	\$0
Anoxic brain injury	2 (5)	2 (100)	0	\$3,150,000 $\pm$ \$2,616,295

Number of lawsuits for each complication type following shoulder surgery, listed by frequency of each event in the database. Complications occurring one time only in the database are not included. Standard deviations were not included for complications with only one indemnity payment. ROM, range of motion; SD, standard deviation.

(Table 1). The mean age of the plaintiff was 52 $\pm$ 11.2 years (mean $\pm$ SD; age was not available in 2 cases). The cases had 10 female plaintiffs (25%) and 30 male plaintiffs (75%). Lawsuits occurred across the country, but most commonly in California and New York, with 11 (27.5%) and 6 (15%) respectively (Table 1).

### Litigation outcomes

Overall, 60% of cases (24 cases) resulted in a defendant ruling, 25% (10) in a plaintiff ruling, and 15% (6) in a settlement (Table 2). Total liabilities of the 40 cases were \$15,365,321 with awards ranging from \$75,000 to \$5,000,000. The average amount award to plaintiffs was \$694,032  $\pm$  \$586,835 (mean  $\pm$  STDEV, range \$75,000 to \$1,900,000), and the average settlement amount was \$1,404,167  $\pm$  \$1,816,481 (range \$75,000 to \$5,000,000).

### Surgical complications

Orthopedic surgeons were the most common defendants (26 cases, 65%), followed by nonsurgical providers (14 cases, 35%). Sixty-five percent of lawsuits (26 cases) named pain and weakness as one of the complications of the procedure (Table 3). Physician loss rate was 30.8% when pain and weakness were named as chief complaint, and 11.5% led to settlements. Average indemnity payment was \$679,909  $\pm$  \$586,992. Limited range of motion (ROM) was listed in 57.5% of cases (23). Of these cases, 13% of cases led to settlement and 26% of cases resulted in physician losses. Average indemnity payment was \$711,556  $\pm$  \$651,193.

Fifteen percent (6 cases) of cases involved surgical site infections, leading to one settlement and one plaintiff victory. Average indemnity payment following a successful suit after a surgical site infection was \$768,091  $\pm$  \$257,259. Nerve damage and death were each listed in 10%. Twenty-six patients (65%) had multiple complications listed (Table 1).

## Discussion and Conclusions

This study was a retrospective investigation of the VerdictSearch legal claims database following rotator cuff surgery, which found that 35% of malpractice lawsuits following rotator cuff surgery led to payment to the plaintiff, via settlement or trial. Payments for these complaints averaged under \$1 million per case.

Orthopedic surgeons are virtually guaranteed to experience malpractice litigation at some point in their careers, and face litigation rates of around 14% per year—double the rate of the average physician.<sup>6</sup> Though litigation is widespread, litigation outcomes have not been widely studied. Previous studies have examined malpractice litigation following a variety of orthopedic procedures, including hip and knee arthroplasty, and spine surgery, but this is the first paper to examine litigation following shoulder surgery.<sup>7-14</sup> By examining the outcomes of malpractice litigation following rotator cuff surgery, this data may can inform physicians of trends in awards and settlements.

There are many strategies to help reduce the number of malpractice claims. Implementing surgeon incentives of malpractice premium refunds to decrease risk through a structured multi-modal education program have been described previously.<sup>7</sup> Studies proving the efficacy of such a program could promote wide-spread adoption of such programs. Additionally, a more thorough consent and patient education process, detailing the risks, benefits, and alternatives to each patient prior to elective surgery are crucial. Though this investigation did not assess the effect of the consent process in these cases, setting more realistic expectations of function and pain/weakness can strengthen the doctor-patient relationship, reduce the likelihood of litigation, and promote a trend towards transparency. The expectation of rehabilitation following sur-

gery should be discussed. Thorough documentation of this process in combination with a focus on patient education, rehabilitation, and expectation management may be helpful for preventing lawsuits or successful litigations.

As with any retrospective database analysis there are potential limitations. VerdictSearch is not a comprehensive malpractice database and therefore cannot assess the prevalence of all shoulder surgery litigation. The cases are submitted by the case attorneys to be reviewed by database editorial staff, but without the review of a medical doctor. Therefore, the level of medical detail for each case is variable based on court reports. Nevertheless, VerdictSearch has been used in numerous previous studies and is a useful tool to analyze the impact of malpractice in orthopedic surgery.<sup>7-10</sup> As this is the first study looking at outcomes of litigation following shoulder surgery, it provides an initial look at the current medicolegal landscape. However, further additional research is needed to better understand the scope of the problem. Studies examining larger numbers of cases could elucidate significant trends. Though these data stemmed from a large database, it may not accurately represent litigation following all shoulder surgery nationwide, as many cases are settled or dropped before even coming before a judge.

Although many factors related to medical malpractice are complex, uncontrollable, and warrant further investigation, efforts to optimize effective patient communication are likely beneficial. Increased transparency and a more in-depth consent

process may help empower the patient and enhance the surgeon-patient relationship. The consent process should include the possibility of continued shoulder pain, loss of motion, and weakness even after rotator cuff surgery. Management of patients' expectations through effective communication may help reduce the risk of litigation following rotator cuff surgery.

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