Spine Publish Ahead of Print
DOI: 10.1097/BRS.0000000000000878

Reason for Lawsuit in Spinal Cord Injury Affects Final Outcome

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The manuscript submitted does not contain information about medical device(s)/drug(s). No funds were received in support of this work. Relevant financial activities outside the submitted work: board membership, consultancy, payment for lectures.

ABSTRACT

Study Design: Retrospective cohort study

Objective: To review past cases and analyze them to determine if reason for lawsuit led to a defense vs. plaintiff verdict when patients sustain spinal cord injury. Secondary objectives included analyzing demographic factors and monetary awards for plaintiff verdicts and settlements.

Summary of Background Data: Evaluating malpractice cases could provide valuable information for the physician who has been sued by a patient. Previous studies about litigation

and spine have been focused on medical tort reform, not on the reasons for litigation and lawsuit outcome.

Methods: A large national medico-legal research service for civil and criminal court called VerdictSearch was queried for "spinal cord injury" between the years 2000-2010. Reason for lawsuit separated into two groups, error in diagnosis (n=48) and error in treatment (n=25). The anatomical region, outcome, cost, and job for sued healthcare workers recorded for each lawsuit.

Results: Compared with physicians who were sued for errors in diagnosis, those sued for an error of treatment had a RR of 2.69 [95% CI 1.40, 5.16] to receive a defense verdict, p=0.003. There were no significant differences demographic information, including age, sex, occupation type, and level of injury. Among specialties, surgeons had the highest number of suits. The median value for each anatomic area was highest in thoracic spine ($1.90M), followed by cervical spine ($1.80M), and lumbar spine (0.750M), although there were no statistical differences between the three areas (p=0.301). The median monetary award for a plaintiff verdict was higher than for a settlement ($2.90M, IQR: 1.50-12.5M versus $1.45M, IQR: 1.00-2.90M, p=0.008).

Conclusions: Physicians are more likely to successfully defend a lawsuit for an error in treatment than for an error in diagnosis. The key to increase the success of defending a lawsuit in regards to SCI is to avoid delayed and incorrect diagnosis.

Key Words: Spinal cord injury, lawsuit, malpractice, defense, plaintiff, settlement, verdict, error in diagnose, error in treatment, monetary award.

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Level of Evidence: N/A

MINI ABSTRACT

When a patient sues a physician, the decision to settle or go to trial is difficult. We reviewed a database of legal cases involving spinal cord injury. Physicians sued for an error in diagnosis are less likely to defend a lawsuit than for an error in treatment.

KEY POINTS

1. Physicians sued for an error in diagnosis are less likely to successfully defend a lawsuit than if they are sued for an error in treatment.
2. Litigation for spinal cord injury is expensive. The median plaintiff verdict in our series was $2.90 million and the mean settlement was $1.45 million.
3. Patients with spinal cord injury sue many different medical and surgical specialties.
4. Demographic factors do no appear to affect the final outcome of the lawsuit.
5. A key to winning a lawsuit is to avoid delayed and incorrect diagnosis

Introduction

Spinal cord injury (SCI) has a significant worldwide health and social impact, with an incidence of 10.4–59 spinal cord injured individuals per million inhabitants per year in countries

across the world.[1] The economic impact for treatment and rehabilitation of each individual with SCI is estimated to be 5.6 million U.S. dollars in the United States.[2]

It is no surprise that patients sue physicians.[3-5] Over 70% of patients that sue physicians were seriously affected by incidents that gave rise to litigation with long-term effects on work, social life, and family relationships.[6] SCI can, no doubt, have a significant impact on the patient's life in these ways.[7] When a patient brings a suit against physicians, the physician must decide whether or not to take a case to trial or opt for a settlement. To our knowledge, there have been no studies looking the factors that may affect if the suit will result in a plaintiff or defense verdict.

Evaluating malpractice cases could provide valuable information for the physician who has been sued by a patient with a spinal cord injury. The primary aim of this study was to evaluate the association between errors in diagnosis versus treatment and the final outcome of the case. Secondarily, our aims were to (1) look for the causes of spinal cord injury, (2) evaluate other potential risk factors that predisposed physicians to get a plaintiff verdict or settlement, (3) report physician subspecialty lawsuit frequency, and (4) to determine factors associated with higher monetary awards.

Methods

We queried a large national medico-legal research service for civil and criminal court called VerdictSearch. VerdictSearch has approximately 170,000 cases and settlements from the last 40 years in their database. A query was made for "spinal cord injury" for cases between the years 2000-2010.

Each case was then analyzed by the reviewers for the reason that the patient sued the physician. They were categorized into two groups, error in diagnosis and error in treatment. The error in diagnosis group included cases that failed to make the correct diagnosis and those that delayed making the diagnosis. The error in treatment group included cases that involved a surgical error or a nonsurgical improper treatment. The query returned 86 legal cases, which were then underwent systematic review by two separate reviewers. Nine cases were excluded because not enough demographic information was available and 4 cases were excluded for irrelevance. This left 73 cases that were included in the study. There were 48 cases in the error in diagnosis group and 25 cases in the error in treatment group. (Table 1)

Outcomes of the each lawsuit were assessed. Every case had one of three outcomes: defense verdict, plaintiff verdict, or settlement. The defense verdict cases were considered a win for the physician. Cases that received either a settlement or a plaintiff verdict were considered to be a loss for the physician.

Next, for our secondary aims, we first collected demographic information including age, sex, occupation type, and level of injury. Occupation type was categorized as either white collar, blue collar, student, retired, or unemployed. Level of injury was classified as cervical, thoracic, or lumbar spine.

The specialty of the sued physician was collected. This was reported only by frequency, without statistical analysis.

Lawsuit costs were compared, first by anatomic region and also by whether the outcome was a plaintiff verdict or a settlement. Defense verdicts were not included in this analysis because there were no monetary awards given for a defense verdict.

We used Chi-Square test to analyze the proportions of cases in each group with a significance level of <0.05 and then calculated relative risk, Chi-Square or T-test to analyze the patient demographics, Mann-Whitney for monetary awards for legal outcome, and Kruskal-Wallis test to analyze monetary awards by anatomic region.

Results

The most common cause of SCI was trauma (n=31) followed by degenerative disease (n=19). All causes are summarized in Table 2.

Compared with physicians who were sued for errors in diagnosis, those sued for an error of treatment had a RR of 2.69 [95% CI 1.40, 5.16] to receive a defense verdict, p=0.003. (Table 3)

Patient demographics did not influence final outcome of the case. The mean age of plaintiff/settlement was 47.0 ± 16.6 versus 50.6 ± 17.6 years (p=0.38). Sex, occupation type, and level of injury had no influence on final outcome. (Table 4)

Surgical subspecialties had the highest number of suits (Figure 1), but many non-surgical physicians were sued, as well. Primary care physicians and emergency medicine physicians were second and third, respectively.

The highest awards were from plaintiff verdicts. When awards and settlements were stratified by anatomic area, the highest median value was for thoracic spine suits ($1.90M), followed by cervical spine ($1.80M), and lumbar spine (0.750M), although there were no statistical differences between the three areas (p=0.301). (Table 5) The median monetary award for a plaintiff verdict was higher than for a settlement ($2.90M, IQR: 1.50-12.5M versus $1.45M, IQR: 1.00-2.90M, p=0.008). (Table 6)

Discussion

SCI is a challenging and significant problem for physicians to diagnose and treat appropriately. In a study by Poonoose, SCI diagnoses are missed 9.1% of the time and treatment errors are made 6.0% of the time. Of the mismanaged cases, 50% result in neurologic deterioration.[8] Physicians who deal with spinal cord injury do get sued. It is interesting that from this database from the last 10 years, only 84 cases went to trial. This shows that getting sued for spinal cord injury is rare, but real.

We showed from this study that physicians sued for an error in diagnosis are less likely to win a lawsuit than if they were sued for an error in treatment. Although the error in treatment group was significantly more likely to win a lawsuit, there win rate was still fairly low. This data reminds physicians that dealing with a patient with an SCI is difficult and may require extra attention and care.[7]

When we looked at the reasons of delayed diagnosis, most of the cases were missed because the healthcare workers did not suspect a SCI and failed to order appropriate neuro-imaging (n=39, 81%). The second most common cause was failing to follow-up test results in a timely fashion (Table 7). When we looked to find out which treatment modalities in SCI resulted in lawsuits, 52% of the litigation was associated with surgical decompression and fusion, followed by decompression alone (Table 8).

There are certain strategies that can be used in dealing with this population. For the error in diagnose group, the failure to carry out additional CT and/or MR studies may result in missed fractures, discs, tumors, or abscesses in emergency rooms. In addition, postoperative patients who develop acute postoperative deficits should undergo emergency MR/CT studies. There were multiple cases the physicians were sued for delay in diagnosis. This was due to the fact that the

physician ordered the tests but did not follow-up with the results. For the error in treatment group, spine surgeons should carry out operations within their expertise; patients should be informed if a non-FDA approved device is to be used. Clear documentation risks, complications, and alternatives to surgery should be clearly documented in the medical record.[9-11]

From analyzing our demographic data, age, sex, job type, and level of injury were not risk factors affecting the final outcome of the case. This data may help physicians realize that no one particular type of patient with SCI is more likely than another to win a lawsuit. It is important to treat all patients and not to develop biases towards certain patient groups for fear of litigation.

From the set of cases we analyzed, we were able to see that many cases were multi-million dollar awards. The median plaintiff verdict was $2.90 million and the median settlement was $1.45 million. This represents a huge burden on the healthcare system.[9] If a physician is sued for an error in diagnosis, it may be more prudent to settle the case, as losing a case in trial is close to $1.45 million in extra cost.

The strengths from this study were that our population included all physicians sued by patients with SCI. This helps make the results relevant to many specialties, including neurosurgeons, orthopaedic surgeons, neurologists, primary care physicians, and emergency medicine physicians. It is important for physicians to be educated to diagnose and manage patients with spinal cord injury, as many different specialties will encounter these patients in their practice.

Much of the previous literature dealing with this topic has concentrated on the societal burden of legislation and the need for medical malpractice reform.[12,13] Epstein has written

multiple studies on the topic of spinal surgery and lawsuits.[10,14,15] This study was not intended to address this issue, but rather be a helpful tool for physicians.

Our study had some limitations. One is that we had a small number of cases. At the beginning of the study, we had thought that the database would have returned many more cases to review. Even though VerdictSearch is a very large database, every spinal cord injury lawsuit may not be discoverable with this search engine. But, even with the included 73 cases, there was sufficient numbers to show statistical significance between our two groups. The next limitation is the generalization of lawsuits. When reviewing these cases, it became very clear that every case was unique and differed from every other case we reviewed. When a physician is sued, it is important to take in all factors surrounding the case and use the information from this study as one tool in the toolbox to make the best decision on whether to take a case to trial or not. Another limitation is that all the data that was analyzed from the database query was from legal documents. These were written in legal language and not using medical terminology. This made it extremely important to analyze each case very carefully to make sure that the correct medical data was gleaned from a legal document. Inherent to this analysis opens up the possibility for error. This was minimized by having two separate reviewers independently review the cases. When comparing the analysis of the cases, there was 100% agreement between the two reviewers which helps to strengthen the validity of the data.

In conclusion, physicians get sued by patients with spinal cord injury. When sued, physicians would like to know which suits to take to trial and which ones to settle. Physicians are more likely to successfully defend a lawsuit for a surgical error or improper treatment than a wrong diagnosis or a delay in diagnosis. The key to increase the success of defending a lawsuit in regards to SCI is to avoid delayed and incorrect diagnosis.

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Figure 1: Reason of lawsuit compared to physician specialty.

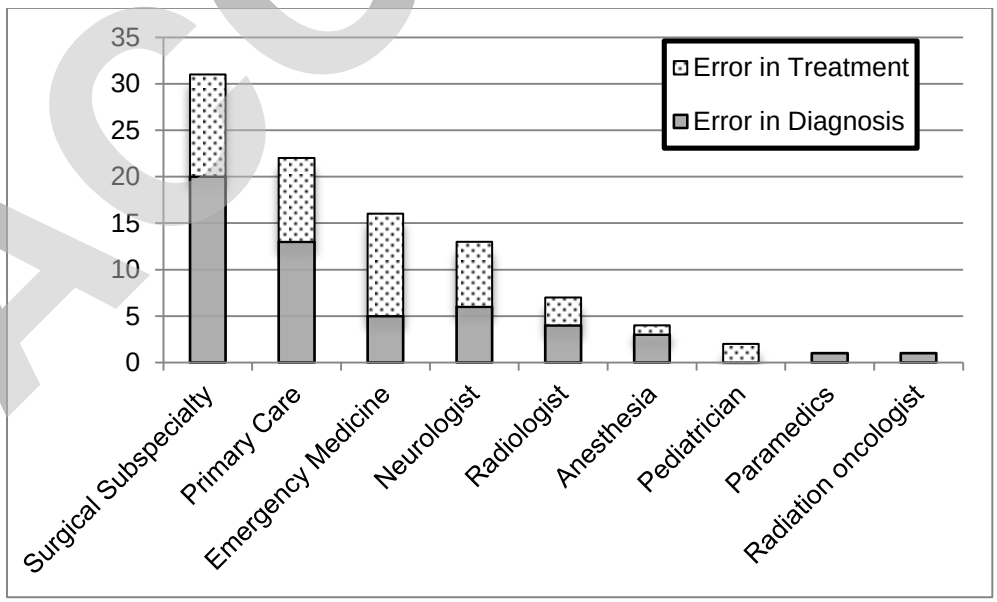

Table 1: Numbers of reason for lawsuits

Reason	N
Error in Diagnosis Cohort	
Delay in Diagnosis	24
Failure to Diagnose	24
Error in Treatment Cohort	
Improper Treatment	13
Surgical Error	12

Table 2: Causes of spinal cord injury.

Causes	Number	%
Trauma	31	42.5
Degenerative disease	19	26.0
Tumor	10	13.7
Infection	8	10.9
Vascular compromise	5	6.9
Total	73	100

Table 3: Lawsuit summaries by treatment group vs diagnosis group.

	Plaintiff Verdict	**Defense Verdict**	***p***
Error in Diagnosis	38	10	0.003
Error in Treatment	11	14	
Relative Risk of getting defense verdict for error in treatment: 2.69 (95% CI 1.40-5.16)			

Table 4: Demographics of all 73 cases.

	Plaintiff Verdict	**Defense Verdict**	**Total**	***p Value***
Age	47 (±16.6)	50.6 (±17.6)	-	0.38
Sex				0.94
Male	31	15	46	
Female	18	9	27	
Job				0.48
Student	4	0	4	
White Collar	13	9	22	
Blue Collar	15	5	20	
Retired	6	4	10	
Unknown	11	6	17	
Level of Injury				0.27
Cervical	19	14	33	
Thoracic	18	8	26	
Lumbar	9	1	10	

Unspecified	3	1	4	

Table 5: Value of legal decision by anatomic region.

	Median	**25%**	**75%**	***p***
Cervical	$1,800,000	$1,000,000	$8,300,000	0.301
Thoracic	$1,900,000	$831,250	$3,950,000	
Lumbar	$750,000	$596,324	$1,812,500	
Unknown	$1,200,000	$1,025,000	$1,622,500	

Table 6: Monetary award of cases by final decision

	Median	**25%**	**75%**	***p***
Plaintiff Verdict (n=23)	$2,900,000	$1,500,000	$12,500,000	0.008
Settlement (n=26)	$1,447,500	$1,000,000	$2,900,000	

Table 7: Causes of delayed diagnosis. (SCI: Spinal cord injury)

Cause	Number	%
Failure to order a neuro-imaging study initially	39	81.2
Failed to follow up with imaging studies	7	14.6
Failure for radiologist to report positive findings	2	4.2
Total	*48*	*100*

Table 8: Treatment modalities that resulted in lawsuit in error in treatment group.

Surgical Procedure	Number	%
Decompression + Fusion	13	52
Decompression	6	24
Excision	2	8
Kyphoplasty	1	4
No Surgery	3	12
Total	*25*	*100*