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# Delayed Diagnosis Is the Primary Cause of Sarcoma Litigation: Analysis of Malpractice Claims in the United States

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## Abstract

**Background:** Sarcoma care is highly litigated in medical malpractice claims. Understanding the reasons for litigation and legal outcomes in sarcoma care may help physicians deliver more effective and satisfying care to patients while limiting their legal exposure. However, few studies have described malpractice litigation in sarcoma care.

**Questions/purposes:** (1) What percentage of sarcoma malpractice cases result in a defendant verdict? (2) What is the median indemnity payment for cases that result in a plaintiff verdict or settlement? (3) What are the most common reasons for litigation, injuries sustained, and medical specialties of the defendant physicians? (4) What are the factors associated with plaintiff verdicts or settlements and higher indemnity payments?

**Methods:** The national medicolegal database Westlaw was queried for medical malpractice cases pertaining to sarcomas that reached verdicts or settlements. Cases from 1982 to 2018 in the United States were included in the study to evaluate for trends in sarcoma litigation. Demographic and clinical data, tumor characteristics, reasons for litigation, injuries, and legal outcomes were recorded for each case. A univariate analysis was performed to identify factors associated with plaintiff verdicts or settlements and higher indemnity payments, such as tumor characteristics, defendant's medical or surgical specialty, reason for litigation, and injuries sustained. A total of 92 cases related to sarcomas were included in the study, of which 40 were related to bone sarcomas and 52 were related to soft-tissue sarcomas. Eighty-five percent (78 of 92) of cases involved adult patients (mean age  $\pm$  SD: 40  $\pm$  15 years) while 15% (14 of 92) of cases involved pediatric patients (mean age  $\pm$  SD: 12.5  $\pm$  5 years).

**Results:** Thirty-eight percent (35 of 92) of the included cases resulted in a defendant verdict, 30% (28 of 92) resulted in a plaintiff verdict, and 32% (29 of 92) resulted in a settlement. The median (interquartile range [IQR]) indemnity payment for plaintiff verdicts and settlements was USD 1.9 million (USD 0.5 to USD 3.5 million). Median (IQR) indemnity payments were higher for cases resulting in a plaintiff verdict than for cases that resulted in a settlement (USD 3.3 million [1.1 to 5.7 million] versus USD 1.2 million [0.4 to 2.4 million]; difference of medians = USD 2.2 million;  $p = 0.008$ ). The

most common reason for litigation was delayed diagnosis of sarcoma (91%; 84 of 92) while the most common injuries cited were progression to metastatic disease (51%; 47 of 92) and wrongful death (41%; 38 of 92). Malpractice claims were most commonly filed against primary care physicians (26%; 28 of 109 defendants), nononcology-trained orthopaedic surgeons (23%; 25 of 109), and radiologists (15%; 16 of 109). Cases were more likely to result in a ruling in favor of the plaintiff or settlement if a delay in diagnosis occurred despite suspicious findings on imaging or pathologic findings (80% versus 51%; odds ratio 3.84 [95% CI 1.34 to 11.03];  $p = 0.02$ ). There were no differences in indemnity payments with the numbers available in terms of tumor type, tumor location, defendant specialty, reason for litigation, and resulting injuries.

**Conclusions:** Many lawsuits were made against primary care physicians, nononcology-trained orthopaedic surgeons, or radiologists for a delayed diagnosis of sarcoma despite the presence of imaging or histologic findings suspicious for malignancy. Although previous studies of bone and soft-tissue sarcomas have not shown a consistent association between time to diagnosis and decreased survival, our study suggests that physicians are still likely to lose these lawsuits because of the perceived benefits of an early diagnosis.

**Clinical relevance:** Physicians can mitigate their malpractice risk while reducing delays in diagnosis of sarcomas by carefully reviewing all existing diagnostic studies, establishing closed-loop communication protocols to communicate critical findings from diagnostic studies, and developing policies to facilitate second-opinion consultation, particularly for imaging studies, with an experienced sarcoma specialist. Musculoskeletal oncologists may be able to help further reduce the rates of malpractice litigation in sarcoma care by helping patients understand that delays in diagnosis do not necessarily constitute medical malpractice.