

## Citation

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## Abstract

### Introduction

Neurosurgery and neuroanesthesiology are commonly perceived to be associated with increased liability. To determine the accuracy of this perception, we examined the ASA Closed Claims database of 5803 claims to evaluate types of injuries, outcomes, and payment factors associated with neurosurgical anesthesia liability claims.

### Methods

Methodology for the ASA Closed Claims database has been previously described. Claims for craniotomy and laminectomy were compared to other claims in the database. Statistical analysis was performed using the Z-Test for proportions and the Kolmogorov-Smirnov test for payments.

### Results

In the database of 5803 claims, 67 claims were associated with craniotomy, and 316 claims with laminectomy, leaving 5420 claims in the Other Claims group. Death or brain damage occurred more often in the craniotomy claims (75%) compared to Other Claims (41%,  $p < 0.05$ , Table 1). Respiratory damaging events were less frequent (10%), and cardiovascular (30%) and surgical events (15%) were more frequent in the craniotomy group compared to Other Claims ( $p < 0.05$ ). Air emboli were more common as primary damaging events in both craniotomy (15%) and laminectomy claims (3%) compared to the Other Claims group (0%,  $p < 0.05$ , Table 1). Inadequate or inappropriate fluid therapy occurred more often in the laminectomy group (5%) compared to the Other Claims group (1%,  $p < 0.05$ ). The laminectomy group contained more injuries related to positioning and padding than Other Claims ( $p < 0.05$ , Table 1). Nerve damage and eye injury were significantly more common in the laminectomy group compared to Other Claims ( $p < 0.05$ , Table 1). Appropriateness of anesthetic care (37%) and percent of cases in which a payment was made to the plaintiff (59%) were similar between Other Claims and both craniotomy and laminectomy claims. However, payments for craniotomy and laminectomy groups were significantly higher than payments in the Other Claims group (Table 1).

**Table 1**

ASA Closed Claims Project: Neurosurgical Claims Vs. Other Claims

	<b>Craniotomy (n=67)</b>	<b>Laminectomy (n=316)</b>	<b>Other Claims (n=5420)</b>
<b>Complication</b>			
Death/Brain Damage	50 (75%)*	128 (41%)	2224 (41%)
Eye Injury	1 (1%)	26 (8%)*	194 (4%)
Nerve Damage	6 (9%)*	75 (24%)*	963 (18%)
<b>Damaging Event</b>			
Air Embolism	10 (15%)*	11 (3%)*	13 (0%)
Fluid Therapy	4 (6%)	16 (5%)*	72 (1%)
Surgical Event	10 (15%)*	22 (7%)	232 (4%)
Positioning/Padding	0	29 (9%)*	66 (1%)
<b>Median Payment</b>	<b>\$411,250*</b>	<b>\$167,500*</b>	<b>\$100,000</b>

**\*p 0.05****Conclusions**

Neurosurgical cases (craniotomy and laminectomy) comprised only 7% of claims in the ASA Closed Claims database, but had higher payments to plaintiffs compared to Other Claims, reflecting the high severity of injury. Death and brain damage, eye injury, nerve damage, injuries from positioning and padding, air emboli, inadequate fluid therapy, and surgical events were significantly more common in neurosurgical claims compared to Other Claims.

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