

Citation

Domino KB: Closed malpractice claims for awareness during anesthesia. ASA Newsletter 60(6):14-17, 1996.

Full Text

*"I remember feeling the cold plastic tube being inserted down the back of my throat. I remember trying to cough, talk, open my eyes and do anything to signal that I was still awake. At that point, I began to panic, and I could feel my heart racing. I was crying inside, but no one noticed my tears. The sensation and memory were similar to what I have read about people being buried alive."*¹

As is vividly described here, awareness under general anesthesia is a terrifying experience. However, by virtue of its nonphysical nature, awareness is not as easily recognizable or quantifiable as are other anesthesia-related injuries. While it is often assumed that the emotional sequelae of awareness are transient in nature, permanent disability due to recurrent nightmares, sleep disturbances, impaired social interactions, difficulties at work and post-traumatic stress disorder may occur.

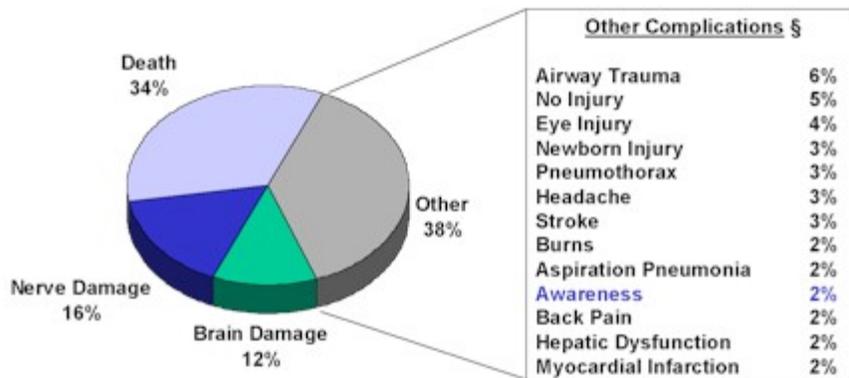
The true incidence of intraoperative awareness and recall is poorly documented but varies according to the type and depth of the anesthetic technique. High rates of recall have been reported in major trauma (11 percent to 43 percent)² and obstetric anesthesia (2.5 percent to 4 percent).³ The overall incidence of awareness (0.2 percent for all general anesthesia cases)⁴ has decreased during the past 10 years, coincident with increased perception of the problem by anesthesiologists.⁵ At the same time, patient concern with the possibility of intraoperative awareness has also increased, with up to 50 percent of patients expressing anxiety over intraoperative awareness.⁶

The patient profile for malpractice claims for intraoperative awareness and whether the rate of claims is changing are unknown. We therefore examined closed claims maintained by the ASA Closed Claims Project database. The database contains a standardized collection of case summaries of adverse anesthesia-related outcomes, obtained from 35 insurance carriers throughout the United States. The data represents closed malpractice claims and does not provide overall incidence statistics for intraoperative awareness.

Closed Claims Analysis

Out of 3,533 claims in the ASA Closed Claims Project database, there were 69 claims for awareness (2 percent), including 54 claims for patient recall of events under general anesthesia (1.5 percent) and 15 claims for inadvertent paralysis of awake patients (0.4 percent). The rate of claims for awareness and awake paralysis was similar to rates of claims for myocardial infarction, aspiration pneumonia, back pain and hepatic dysfunction following anesthesia [see Figure 1]. These rates suggest that intraoperative awareness is a significant source of lawsuits against anesthesiologists. Although the public's and anesthesiologists' concerns about awareness have increased, the proportion of awareness claims has remained relatively stable during the years of the ASA Closed Claims Project.

Figure 1



Most common complications in the ASA Closed Claims Project database. Some claims involve multiple complications.
 § Figures have been rounded

The rate of payment for awareness claims was the same as for other claims (57 percent). However, the severity of injury in awareness claims (temporary, minor, etc.) was usually lower than the severity of other claims in the database (generally permanent and disability). Awareness claims resulted in a lower payment than other anesthesia malpractice claims, with a median payment of \$18,000 for recall during general anesthesia, compared to a median payment of \$100,000 for nonawareness claims [see Table 1]. However, substantial sums of money were recorded in awareness claims, with highest payments awarded for awareness complicated by other anesthetic complications (e.g., \$600,000 for a case complicated by aspiration pneumonitis) or severe permanent disability (e.g., \$125,000 for post-traumatic stress disorder).

Table 1

Payment for Anesthesia Malpractice Claims in Closed Claims Project

Type of Claim	Number of Claims	Median	Minimum	Maximum
Recall during general anesthesia	54	\$18,000	\$1,683	\$600,000
Awake paralysis	15	\$9,500	\$1,500	\$75,000
All other claims*	3,464	\$100,000	\$15	\$23,200,000

* Payment: $P < 0.001$ compared with awake paralysis and recall during general anesthesia claims by Kolmogorov-Smirnov test.

Awake Paralysis

Most cases of awake paralysis were related to intravenous infusion errors or syringe swaps. Infusion errors included the use of nonlabeled succinylcholine bags (two cases), mislabeled succinylcholine bags (two cases) and failure to check the label on unintended succinylcholine drips (six cases), accounting for two-thirds of the claims for awake paralysis. Syringe swaps occurred with properly labeled drugs in three cases and mislabeled syringes in two cases. Reviewers considered most cases of awake paralysis to be examples of substandard anesthesia care, even though the paralysis was promptly recognized and appropriately managed.

Recall During General Anesthesia

In contrast to the awake paralysis claims, most of which were secondary to vigilance errors, recall under general anesthesia had a variety of etiologies. The anesthetic care was classified as substandard in 42 percent of cases, which is similar to classification for all other claims in the database but less than the percentage for awake paralysis claims (substandard in 93 percent of cases). In substandard cases, recall occurred as a result of failure to turn on a halogenated agent vaporizer, vaporizer malfunction or failure to administer appropriate amounts of anesthetic agents during induction; however, recall often occurred in the presence of an anesthetic that met the standard of care such as with use of amnestic agents or during a period of hemodynamic instability. Hypertension and tachycardia were occasionally clinical cues for awareness, although these signs were absent in most cases.

In order to determine risk factors for claims for recall during general anesthesia compared to other types of malpractice closed claims, 52 recall claims and 2,072 other general anesthesia claims, which had sufficient detail concerning anesthetic agents, were compared using logistic regression analysis. Five factors were significantly associated with recall under general anesthesia claims: female gender, gynecological/obstetrical procedures, use of opioids, use of muscle relaxants and lack of use of a volatile anesthetic agent [see Table 2].

Table 2

Risk Factors for Malpractice Claims for Recall During General Anesthesia		
Risk Factor	Increase in Odds of Recall Claim	P
Female gender	3.2	<0.001
Gynecological/obstetrical procedures	2.8	<0.001
Intraoperative muscle relaxants	2.1	<0.02
Intraoperative opioids	2.1	<0.05
Lack of volatile anesthetic	1.8	<0.05

Female gender tripled the risk of an awareness claim, compared with other general anesthesia malpractice claims. Gynecological/obstetrical procedures and anesthetic techniques involving use of muscle relaxants and/or opioids doubled the risk of malpractice claims for recall. In contrast, use of a volatile anesthetic agent reduced the risk of recall claims by one half. After adjusting for the other risk factors using multiple logistic regression analysis, female gender, gynecological/obstetrical procedures and anesthetic techniques involving muscle relaxants remained as independent risk factors for malpractice claims for recall during general anesthesia.

The increased risk of recall claims arising from anesthetic techniques that use opioids, use muscle relaxants and do not use volatile anesthetics is logical and predict-able. Likewise, an association of recall with gynecological/obstetrical procedures is not surprising because of the common use of light anesthetic techniques during these procedures.

Unfortunately, the number of recall claims in the database was too small to allow a more detailed examination of risk with different surgical procedures. The increased propensity for women to file suit for recall during general anesthesia is somewhat surprising. In general, women are not more likely than men to sue for minor adverse outcomes, according to the ASA Closed Claims Project. However, women may be more likely than men to sue for emotional injury.

Conclusion

Recall during general anesthesia or awake paralysis is a frightening experience, which may lead to serious emotional injury. The ASA Closed Claims Project analysis of awareness claims suggests that deficiencies of labeling and vigilance are common etiologies for awake paralysis. Claims for recall during general anesthesia represent a more diverse group.

Risk factors for claims for recall under general anesthesia include female gender, gynecological/obstetrical procedures and anesthetic techniques using muscle relaxants and opioids without volatile anesthetic agents.

References

1. Personal communication with a patient who experienced intraoperative awareness.
2. Bogetz MS, Katz JA. Recall of surgery for major trauma. *Anesthesiology*. 1984; 61:6-9.
3. Crawford JS. Awareness during operative obstetrics under general anesthesia. *Br J Anaesth*. 1971; 43:179-182.
4. Liu WHD, Thorp TAS, Graham SG, et al. Incidence of awareness with recall during general anesthesia. *Anaesthesia*. 1991; 46:435-437.
5. Ghoneim MM, Block RI. Learning and consciousness during general anesthesia. *Anesthesiology*. 1992; 76:279-305.
6. McCleane GJ, Cooper R. The nature of preoperative anxiety. *Anaesthesia*. 1990; 45:153-155.

Domino KB: Closed malpractice claims for awareness during anesthesia. ASA Newsletter 60(6):14-17, 1996 was reprinted with permission of the [American Society of Anesthesiologists](http://www.asaclosedclaims.org), 520 N. Northwest Highway, Park Ridge, Illinois 60068-2573.

www.asaclosedclaims.org