Citation

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Full Text

"Asked repeatedly, Abbott confirmed repeatedly that he had felt no pain during the operation, although by the end of it he said, he became aware of a sensation he compared to a blunt tool, such as a hoe, against his skin."

From: Fenster JM. Ether Day. The Strange Tale of America's Greatest Discovery and the Haunted Men Who Made It. New York: Harper Collins; 2001: 80.

In the more than 150 years since Ether Day, when the explicit recall of sensations during surgery and anesthesia was the norm, intraoperative awareness now occurs in fewer than 1 in every 700 general anesthetics.[1] Because awareness is so uncommon, anesthesiologists are no longer able to rely on clinical experience to provide an understanding of how to safely prevent and effectively treat this anesthetic complication. We now must turn to large prospective studies, large databases, and registries to gain a comprehensive perspective. The ASA Closed Claims Project provides information on both the liability burden and factors associated with what are possibly some of the most traumatic cases of awareness - those that lead to malpractice claims.

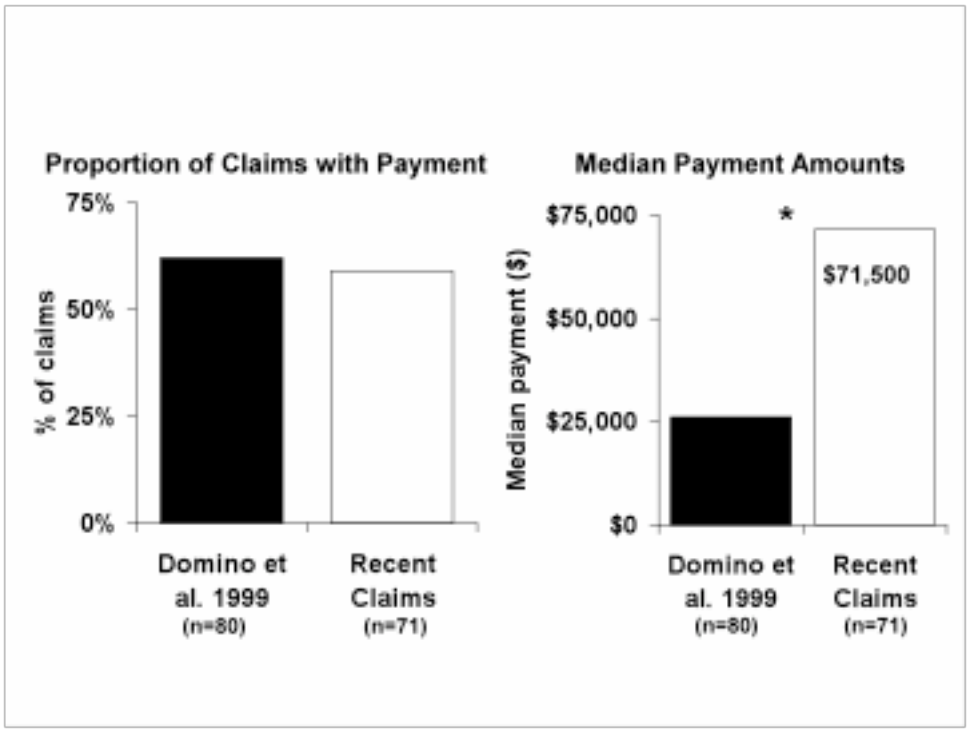
The Closed Claims Project is an ongoing structured evaluation of adverse anesthetic outcomes obtained from the files of 37 participating liability insurance companies that cover 36% of practicing anesthesiologists in the U.S. The project was established in 1985 and now contains data from over 8000 medical malpractice claims. Recent claims for awareness during general anesthesia in the Closed Claims database (n=71) were compared to those previously published by Domino et al. in 1999 (n=80).[2, 3] For the purposes of this review, claims for both "awake paralysis" and "recall during general anesthesia" were included as awareness claims. Awake paralysis occurs with errors in the administration of neuromuscular blocking agent, such as out-of-sequence administration or labeling problems, resulting in paralysis of an unanesthetized patient.

Claims for awareness consistently represented 2% of all claims in the Closed Claims database. In both time periods, the majority of patients were female, ASA 1-2, less than 60 years old, and who underwent elective surgery. In the newer claims, the proportion of patients undergoing obstetric or gynecologic surgery decreased from 30% to 20%.

Notably, the proportion of claims associated with cardiac surgery increased from 5% to 21% in the recent time period.[3] Although anesthetics for patients undergoing cardiac procedures have previously been recognized as being among the highest risk for the occurrence of awareness,[4] they have not been previously associated with malpractice claims. Without a denominator for these claims, it is impossible to know whether this newly identified association is due to a change in incidence of awareness claims during cardiac anesthesia, or due to a change in the malpractice environment for cardiac anesthesia, perhaps due to changes in patient expectations regarding cardiac surgery.

The median amount awarded for damages was increased for the more recent claims (Figure 1). The median payment (adjusted for inflation to 2007 dollars) in recent claims was $71,500, with a range of $924 to $1,050,000. Why payment amounts for awareness have increased in recent times is unclear, particularly since these trends have not been observed for other anesthesia complications. Increased publicity concerning awareness and the presence of a monitor that might help to prevent awareness might increase awards. Higher payments for claims for other complications have previously been associated with the existence of a monitor that might have prevented those complications.

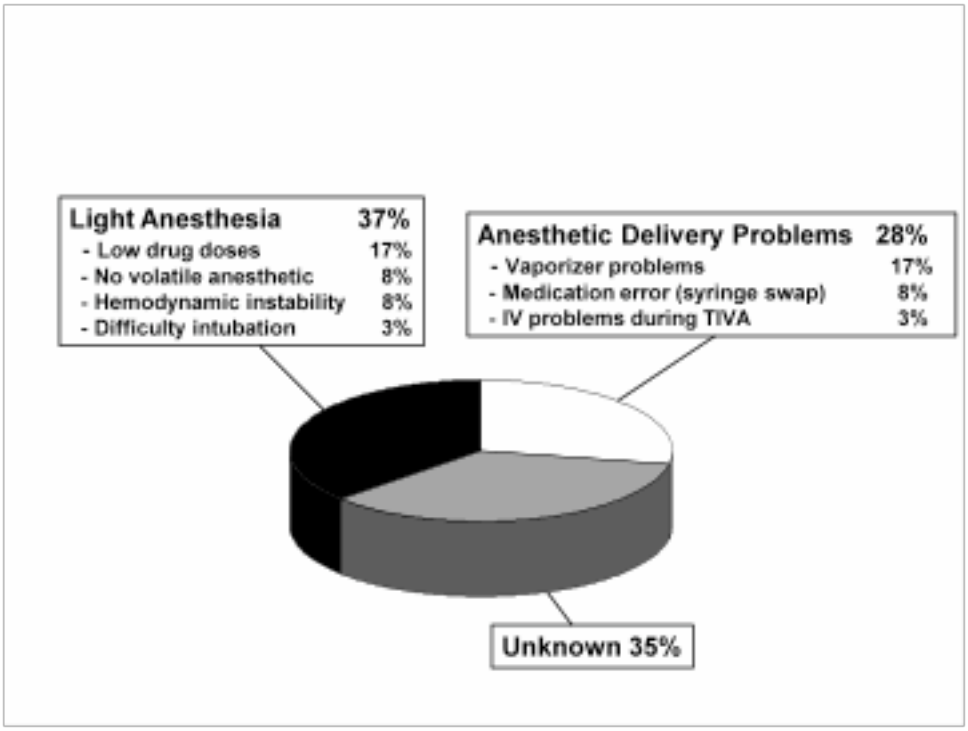
Fig. 1: Payment for Awareness Claims in ASA Closed Claims



*p=0.007 between payment amounts in older claims (Domino et al., 1999) and recent claims.

The two main causes of awareness in the closed claims were light anesthesia and anesthetic delivery problems (Figure 2). Specific causes included low dose of induction or maintenance drug, ventilator and vaporizer-related problems, hemodynamic instability limiting volatile anesthetics, and medication errors (Figure 2). No single cause of awareness could be found in 35% of claims (Figure 2), either due to insufficient information or the multiplicity of possible factors included in the description of the claim.[3] Examination of records generated by an automated anesthesia information management system (AIMS) suggests that some occurrences of awareness that were previously unexplainable with a review of written anesthetic records were actually caused by low doses of volatile agents as captured by the AIMS.[5]

Fig. 2: Causes of Awareness in ASA Closed Claims (n=71)



To better understand the patient perspective of awareness, the ASA Committee on Professional Liability initiated the development of the Anesthesia Awareness Registry in October 2007. Subject recruitment started after IRB approval from the University of Washington through the Registry's website (*www.awaredb.org*) (Figure 3). In order to meet the inclusion criteria for the registry, patients must be 18 years or older and have experienced explicit recall during general anesthesia. Subjects complete a short questionnaire about their anesthesia awareness experience, including procedure, date of surgery, specific recollections during surgery, satisfaction with care, and psychological sequelae. Medical records are also requested for those registrants who consent.

Anesthesia Awareness Registry website: www.awaredb.org

One of the findings of interest from the Anesthesia Awareness Registry is that some patients contacted the registry after a distressing anesthetic experience under the assumption that they had experienced awareness during general anesthesia, only to have a review of their medical records reveal that they had received regional anesthesia or monitored anesthesia care.[6] This finding may reveal problems in communication and addressing patient expectations. This corresponds with published information obtained from a large continuous quality improvement database indicating that in some instances in monitored anesthesia care and regional anesthesia with sedation, patients were distressed by being more awake than they had expected and their expectations for their intraoperative experience were not set by an anesthesiologist.[7]

Recruitment for the registry is ongoing. Participants can now complete the survey online, download the survey to complete in paper form, or call the Registry for an enrollment packet (206-616-2669). If you have had a patient experience intraoperative awareness during general anesthesia, please consider referring your patient to the Anesthesia Awareness Registry. A patient handout is available from the Registry's website: www.awaredb.org

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