

TITLE: PEER REVIEW OF ANESTHETIC MISHAPS: EFFECT OF SEVERITY OF INJURY

AUTHORS: R.A. Caplan, M.D., K. Posner, B.A., M.A., R.J. Ward, M.D., and F.W. Cheney, M.D.

AFFILIATION: Department of Anesthesiology, University of Washington School of Medicine, Seattle, Washington 98195 and Department of Anesthesiology, Virginia Mason Clinic, Seattle, Washington 98111

Introduction. In the aftermath of an anesthetic mishap, does the severity of injury influence the opinion of peers? In the present study, we asked a diverse set of 42 practicing anesthesiologists to analyze 48 anesthetic mishaps of varying severity of injury and quality of care.

Methods. Mishaps were obtained from the ASA Closed Claims¹ database, a standardized collection of case summaries of over 1,000 anesthetic mishaps which have been collected from a nationwide group of insurance carriers. The database was divided into four subsets based upon severity of injury (high or low) and appropriateness of care (appropriate or less than appropriate). Severity of injury was measured on a standard 10-point scale (0 = no injury to 9 = death) used in the insurance industry. A high severity injury was defined as one that was permanent and disabling to the patient. A low severity injury was defined as only temporary or non-disabling. For sampling purposes, a preliminary assessment of appropriateness of care in each case was made by a 3-member central committee of anesthesiologists. Twelve cases were randomly chosen from each subset and presented to reviewers using a standardized format, set of instructions, and rating sheet. For each case, the reviewers received information on the medical history and preoperative condition, date of mishap, surgical procedure, anesthetic technique and agents, sequence of events leading to the mishap, and patient outcome.

Reviewers were asked to apply their own standards when assessing the appropriateness of anesthesia care in each case. Since the mishaps in this study spanned approximately one decade, reviewers were instructed to keep their assessments in context with the general knowledge and sophistication which existed at the time of each event. Reviewers were not apprised of the preliminary assessments assigned by the central committee.

Reviewers were recruited from both private and academic practice. Each major geographic region of the U.S. was represented. There was a broad range of years in practice (3-37) and number of claims previously reviewed (0 - >900).

Reviewers provided a total of 2,016 judgments (42 reviewers X 48 cases) for analysis. A chi-square test was used to determine if the distribution of reviewer judgments on appropriateness of care differed significantly from what would be expected by chance, given an equal number of high and low severity injuries. $P \leq 0.05$ was considered significant.

Results. A significant association ($p < 0.001$) was found between severity of injury and assessments of appropriateness of care. As shown in Table 1, the distribution of responses was skewed toward less than appropriate care if the severity of injury was high. If the severity of injury was

low, the distribution of responses was skewed toward appropriate care. Cases in which the reviewers were not able to render judgments were evenly distributed between high and low severity injuries.

Discussion. The results of this study must be interpreted cautiously, as reviewers based their judgments on summarized data rather than original case documents. The observed association between severity of injury and reviewer judgments on appropriateness of care suggests that anesthesiologists are influenced by case outcome when judging mishaps involving their peers. Of note, the absence of skewing for cases rated as impossible to judge suggests that severity of injury does not influence whether or not a case can be assessed.

These results suggest that anesthesiologists should approach the task of peer review with an awareness that the outcome of the mishap may introduce a specific pattern of bias. A high severity injury may provoke an unduly harsh assessment of care, while a low severity injury may promote a more lenient view. Further investigation of the relationships observed in this study may improve our understanding of the strengths and weaknesses of peer review, especially in the setting of disciplinary and legal proceedings.

Table 1. DISTRIBUTION OF REVIEWER RESPONSES ON APPROPRIATENESS OF CARE

	SEVERITY OF INJURY	
	HIGH (n=1008)	LOW (n=1008)
Less than Appropriate Care	593 (58%)	433 (42%)
Appropriate Care	262 (39%)	414 (61%)
Impossible to Judge	153 (49%)	161 (51%)

Figures in parentheses indicate percentages of each row total. Chi-Square = 59.3326 ($p < 0.001$)

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