

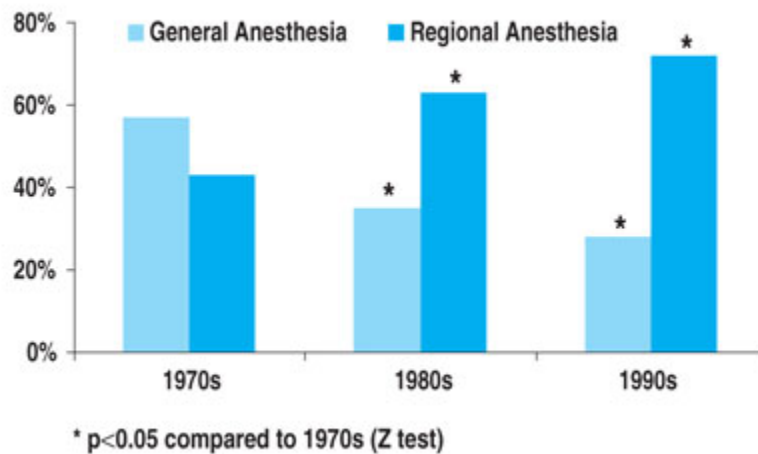
## Full Text

Over the last three decades, the practice of obstetric anesthesiology has changed considerably. Anesthesia workforce surveys conducted in 1981 and 1992 revealed a significant increase in the proportion of cesarean sections performed under regional anesthesia and a corresponding decrease in those performed under general anesthesia.<sup>1</sup> The latest data looking at U.S. obstetric anesthesia practice shows a continuation of this pattern.<sup>2</sup> We utilized ASA's Closed Claims Project database to determine if these changes in obstetric practice patterns were reflected in patterns of injury and liability in malpractice claims. Although the ASA Closed Claims Project database lacks the ability to determine the incidence of complications and relative risk of anesthetic techniques because of an unknown denominator (the total number of anesthetics performed) and an incomplete numerator (not all complications result in a claim), it provides valuable insight into the types and patterns of injury associated with malpractice claims.

## Obstetric Anesthesia Claims

To date, approximately 12 percent (792) of the 6,449 claims in the ASA Closed Claims Project database involve obstetric anesthesia care. Thirty-three percent of these claims involved patients undergoing vaginal delivery, and 67 percent involved cesarean section. From the 1970s through the 1990s, the proportion of cesarean section claims associated with general anesthesia has progressively declined, while the proportion associated with regional anesthesia has steadily increased ( $p < 0.05$ ) [Figure 1]. These changes in liability are consistent with changing trends in anesthesiology practice documented in workforce surveys.<sup>1,2</sup>

**Figure 1: Anesthetic Technique in Cesarean Section Claims**



## Regional Techniques

Vaginal delivery and cesarean section claims were grouped according to regional technique: caudal, lumbar epidural or spinal [Table 1]. With the decreased use of caudal anesthesia for labor,<sup>2</sup> it is not surprising that claims associated with this regional technique have gone from 15 percent of all vaginal delivery claims in the 1970s to zero in the 1990s. The proportion of lumbar epidural claims has increased over the decades for both vaginal delivery and cesarean section. Part of this rise in claim numbers is due to the relative increase in the use of epidurals for obstetric anesthesia.<sup>2</sup> The number of claims for spinal anesthesia used in labor are small, and claims associated with its use have decreased from the 1970s to the 1980s and 1990s [Table 1]. Despite the increasing use of spinal and combined spinal-epidural anesthesia for cesarean section in obstetric anesthesia practice, the proportion of claims related to spinal anesthesia has remained static (approximately 25 percent) over the last three decades [Table 1].

Table 2: Most Common Complications in Obstetric Claims by Decade			
	1970s (n=94)	1980s (n=378)	1990s (n=310)
Maternal death	28 (30%)†#	56 (15%)#	38 (12%)†
Newborn brain damage	21 (22%)	82 (22%)*	44 (14%)*
Headache	11 (12%)	54 (14%)	44 (14%)
Maternal nerve damage	10 (11%)†	40 (11%)*	61 (20%)††
Maternal brain damage (patient survived)	9 (10%)	27 (7%)	18 (6%)
Aspiration pneumonitis	8 (9%)†	13 (3%)	4 (1%)†
Emotional distress/fright	6 (6%)	27 (7%)	26 (8%)
Pain during surgery	4 (4%)	33 (9%)	22 (7%)
Back pain	3 (3%)†#	34 (9%)#	31 (10%)†
Newborn death	1 (1%)	28 (7%)	19 (6%)

†p<0.05 for 1990s vs. 1980s      †p<0.05 for 1990s vs. 1970s      #p<0.05 for 1980s vs. 1970s

## Outcomes and Damaging Events

In the 1970s, maternal death accounted for the highest proportion of obstetric anesthesia claims (30 percent), but this number decreased by more than half by the 1980s and 1990s [Table 2]. The number of claims for aspiration pneumonitis, albeit small, also decreased significantly at this time [Table 2]. Obstetric claims associated with newborn brain damage decreased from 22 percent in the 1970s and 1980s to 14 percent in the 1990s ( $p < 0.05$ ) [Table 2]. Maternal nerve injury increased significantly since the 1970s (11 percent) and became the most common damaging event in the 1990s (20 percent) [Table 2]. Obstetric claims associated with back pain also increased significantly between the 1970s and 1990s. Claims for headache have remained stable over this same time period.

Table 1: Primary Anesthetic Technique in Obstetric Claims

	1970s		1980s		1990s	
	Vaginal (n=34)	C-section (n=60)	Vaginal (n=88)	C-section (n=290)	Vaginal (n=122)	C-section (n=168)
General Anesthetic	10 (29%)†	34 (57%)‡	10 (11%)†	99 (35%)‡	1 (1%)†	47 (28%)†
Regional Anesthetic	24 (71%)†	26 (43%)‡	78 (89%)	181 (63%)‡	121 (99%)†	121 (72%)
Caudal	5 (15%)†	0	9 (10%)†	3 (1%)	0†	1 (1%)
Lumbar epidural	14 (41%)‡	10 (17%)‡	65 (74%)‡	104 (37%)‡	118 (97%)†	80 (41%)†
Spinal	5 (15%)	16 (27%)	3 (3%)	71 (25%)	2 (2%)	44 (26%)

†p<0.05 for 1990s vs. 1980s      ‡p<0.05 for 1990s vs. 1970s      \*p<0.05 for 1980s vs. 1970s

## Discussion

A decrease in high-severity injury claims and increase in lower-severity claims (e.g., nerve injury and back pain) correlates temporally with decreased use of general anesthesia and increased use of regional anesthesia in obstetrics. The anesthesiologist who has administered an epidural/spinal may be implicated in a nerve injury claim even when the injury is obstetric in origin.

Perhaps the most surprising finding from the ASA Closed Claims Project database is the large proportion of relatively minor injuries in the obstetric claims [Table 2], which may reflect a greater incidence of such problems among obstetric patients. Alternately it may reflect unrealistic expectations and dissatisfaction with care. The proportion of claims for pain during surgery, which are almost always associated with cesarean section performed under regional anesthesia, have remained stable despite the overwhelming increase in the use of regional anesthesia. Spinal anesthesia produces a denser, more reliable block for cesarean section than epidural anesthesia, making claims for "pain during surgery" less likely with spinals and combined spinal/epidurals, which have increased in popularity. Inadequate analgesia may partially result from the reluctance of anesthesiologists to convert to general anesthesia because of the risk of aspiration or difficult intubation. It is clear, however, that many of these patients were unhappy with their care and believed that they had been ignored, mistreated or assaulted.<sup>3</sup> Malpractice litigation may serve the purpose not only of reparation of injury and deterrence of substandard care but also of emotional vindication.<sup>4,5</sup>

## Summary

Changes in outcomes, with a decrease in severe-injury claims and an increase in nerve injury and back pain claims, may reflect the decreased use of general anesthesia and increased use of regional anesthesia in obstetrics.<sup>1,2</sup> Changing medicolegal strategies and improved medical care also may have contributed to the reduction in severe outcomes in obstetric claims over the decades, however.

It is crucial to provide patients with realistic expectations and an understanding of potential major and minor risks associated with obstetric and anesthetic procedures. General anesthesia still carries a high risk in this patient population compared to regional anesthesia. Obstetricians, obstetric nurses and anesthesia care providers should work together to coordinate patient care and develop a good rapport with

patients and their families so that patients will not be motivated to bring suit for an unexpected outcome. Anesthesia involvement in prenatal education and a thorough preanesthetic evaluation are crucial.

## References

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