

Citation

Lee L, Posner KL, Domino KB: Trends in Injuries to the Visual Pathways and Medicolegal Payments from the Closed Claims Project Database. *Anesthesiology*, A2058, 2013.

Abstract

Background: Though modern anesthesia is considered very safe, changes in surgical practice give rise to new perioperative complications and anesthetic challenges that may increase liability risks. Spinal fusion surgery more than doubled from 1995 to 2008^{1,2} and has been associated with high severity injuries to the visual pathways.³ We sought to examine the trends in severity of injuries to the visual pathways from the Closed Claims Project Database to determine if complications arising from changes in surgical practice were reflected in medicolegal claims against anesthesiologists.

Methods: We identified claims associated with injuries to the visual pathways from the Closed Claims Project Database. We compared 146 claims associated with injuries to the visual pathways between 1980-1994 to 133 similar claims between 1995-2011 with chi square analysis, Fisher's exact test, Mann Whitey U test and t-test with $p < 0.05$ for statistical significance. Payment amounts were adjusted to 2012 dollars using the Consumer Price Index. Claims associated with chronic pain management, regional block-related events or on-patient fires were excluded.

Results: From a total of 9799 claims in the Closed Claims Project Database, claims for injury to the visual pathways represented 4% of the database in both time periods. Both corneal abrasions and retinal tears/vitreous expulsion/retrobulbar or vitreous hemorrhage decreased over time ($p=0.002$ and $p=0.001$ respectively) [table]. Optic nerve injuries increased from 5% of visual pathway injury claims to 38% in the later time period ($p<0.001$) [table], and were primarily associated with spine surgery (71% from 1995-2011). There was a nonsignificant trend for increased claims with central retinal artery or vein occlusion from the earlier to later time periods ($p=0.061$) and more than half were associated with spine surgery (57% from 1995-2011). Permanent injuries increased from 49% to 73% over time ($p<0.0001$) [table]. Approximately half of all claims in both time periods were associated with appropriate anesthesia care, and there was no significant difference in the proportion of claims with payments made over time. However, the median payments rose substantially from \$128,100 to \$424,750 ($p = 0.002$) in the later time period, presumably reflecting the significant increase in permanent injuries [table].

Conclusions: Malpractice claims associated with injuries to the visual pathways had a significant increase in permanent injuries over time, primarily related to injuries to the optic nerve and central retinal artery or vein occlusion in association with spine surgery. The higher severity of injuries over time correlated with a more than 3-fold increase in the median payments made. These changes in medicolegal claims against anesthesiologists occurred during the same time period that spinal fusion surgery procedures more than doubled.

References:

1. Deyo RA, et al. *New Engl J Med* 2004; 350:722-6.
2. Rajae SS, et al. *Spine* 2012; 37:67-76.
3. Shen Y, et al. *Anesth Analg* 2009; 109:1534-46.

Figure 1

Table: Trends in Claims Associated with Injuries to the Visual Pathways

		1980-1994 (n=146)	1995-2011 (n=133)	P value
Type of Injury				<0.0001
	Corneal Abrasion	45 (31%)	20 (15%)	
	Retinal tear / vitreous expulsion / retrobulbar or vitreous hemorrhage	43 (29%)	17 (13%)	
	Optic Nerve Injury	8 (5%)	51 (38%)	
	Retinal artery or vein occlusion	6 (4%)	14 (11%)	
	Cortical Blindness	6 (4%)	10 (8%)	
	Blindness, cause undetermined	10 (7%)	9 (7%)	
	Other	28 (19%)	12 (9%)	
Severity of Injury				<0.0001
	No injury to permanent minor	73 (50%)	35 (26%)	
	Permanent significant to permanent major	72 (49%)	97 (73%)	
	Death	1 (1%)	1 (1%)	
Appropriateness of Care				0.299
	Less than appropriate	55 (38%)	40 (30%)	
	Appropriate	72 (49%)	69 (52%)	
	Impossible to judge	19 (13%)	24 (18%)	
Payment	% Claims Paid	90 (65%)	76 (58%)	0.256
	Median Payment	\$128, 100	\$424,750	0.002
	Interquartile Range	\$11,100-\$465,000	\$75,250-\$800,250	

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