



Relationship between Surgeon Experience and Complication Rates in Adolescent Idiopathic Scoliosis: A Review of 12,440 Cases from the Scoliosis Research Society Database 2004-2007

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Introduction

Surgeon training and experience play an important role in patient outcomes following spinal surgery. The Scoliosis Research Society Morbidity and Mortality (SRS M&M) data allow membership status (active vs. candidate) to serve as a proxy for the level of surgeon experience. Only a few studies have evaluated surgeon experience as a factor for perioperative complications in AIS. The purpose of this study was to investigate rates of perioperative complications after adolescent idiopathic scoliosis surgery based on surgeon experience.

Methods

The SRS M&M database was queried for patients aged 10-18 years who underwent spinal fusion for AIS from 2004-2007. Patient demographics, surgical characteristics, and complications were analyzed. Two-tailed t test and chi-square test were performed.

Results

A total of 12,440 cases (avg. age 14.3 years) were identified between 2004 and 2007. 467 (3.8%) were revisions. There were a total of 576 (4.63%) complications: 417 (4.8%) for active; 159 (4.2%) for candidate, p=0.12. There were 2 mortalities (1 active, 1 candidate). Spinal cord complications were 0.43% (54): 31 (7.4%) for active; 23 (14.5%) for candidate, p=0.02. 158 wound infections (1.3%) were recorded: 105 (1.2%) for active; 53 (1.4%) for candidate, p=0.06.

Conclusions

Overall complication rates were low and similar between the active and candidate member groups. Significantly more spinal cord deficits and a trend toward higher wound infections were observed in candidate members.

	Active Members	Candidate Members	Total	p-value
Surgeries	8,628 (69.4%)	3,812 (30.6%)	12,440	
Revision Surgeries	339	128	467	0.135
% Of all Surgeries	(2.73%)	(1.83%)	(3.75%)	
Overall Complications	417	159	576	0.116
Rate of Overall Complications	(4.83%)	(4.17%)	(4.63%)	
Spinal Cord Complications	31	21	54	0.015
% Of Overall Complications	(7.43%)	(14.47%)	(9.38%)	
Rate of Spinal Cord Complications	(0.36%)	(0.60%)	(0.43%)	
Wound Complications	105	53	158	0.063
% Of Overall Complications	(25.18%)	(33.33%)	(27.43%)	
Rate of Wound Complications	(1.22%)	(1.39%)	(1.27%)	

Learning Objectives

- 1) Identify differences in complications based on surgeon experience

References

Scoliosis Research Society Mortbidity and Mortality Database 2004-2007