



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

Learning Objectives

- 1) Identify differences in complications based on surgeon experience

References

Scoliosis Research Society Morbidity and Mortality Database 2004-2007