



Thirty-day Postoperative Complications Following Corpectomy for Intraspinous Lesions in the American College of Surgeons National Surgical Quality Improvement Program (NSQIP)

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Introduction

- Corpectomy is often required in the management of intraspinal lesions

- There is limited information on the occurrence of early postoperative complications following these procedures

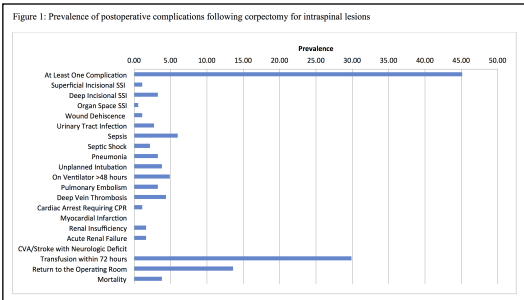
-Our objective was to determine the prevalence of and risk factors for 30-day postoperative complications following corpectomy for intraspinal lesions using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP)

Methods

-Patients who underwent corpectomy for intraspinal lesions (CPT codes: 63300-63308) performed by neurosurgeons were extracted from the 2005-2015 ACS-NSQIP

- The prevalence of postoperative complications was estimated

-Multivariable logistic regression was used to characterize demographic, comorbid, and perioperative factors associated with 30-day postoperative complications following corpectomy for intraspinal lesions



Results

- A total of 184 cases of corpectomy for intraspinal lesions were identified
- At least one complication occurred in 83 (45.1%) cases

-The three most common complications were:

-Transfusion (29.9%)

-Reoperation (13.6%)

-Sepsis (6.0%)

- Multivariable analysis recognized five independent risk factors for any complication:

-Thoracic level

OR: 2.80; CI: 1.09-7.19; p=0.03

-Lumbar/sacral level

OR: 3.68; CI: 1.26-10.73; p=0.02

-Dyspnea

OR: 8.60; CI: 1.46- 50.80; p=0.02

- Emergency surgery

OR: 5.02; CI: 1.14-22.08; p=0.03

- Longer duration of surgery

OR: 1.48; CI: 1.24-1.77; $p < 0.001$

Table 1: Odds of postoperative complications following corpectomy for intraspinal lesions

Spinal Level	Variable	Any Complication OR (95% CI)	P-Value
	Cervical	1.00 (Reference)	
	Thoracic	2.80 (1.09-7.19)	0.03
	Lumbar/Sacral	3.68 (1.26-10.73)	0.02
Location	Extradural	1.00 (Reference)	
	Intradural	0.60 (0.23-1.61)	0.31
Age	< 45	1.00 (Reference)	
	45-55	1.04 (0.22-4.87)	0.96
	55-65	2.51 (0.57-11.14)	0.23
	> 65	2.69 (0.61-11.90)	0.19
Female		1.27 (0.56-2.89)	0.57
Race	White	1.00 (Reference)	
	Other	1.17 (0.45-3.08)	0.75
BMI	Normal-Underweight	1.00 (Reference)	
	Overweight	2.20 (0.74-6.55)	0.16
	Obese	1.07 (0.36-3.19)	0.90
Tobacco Use		1.11 (0.32-3.90)	0.87
Diabetes		0.53 (0.13-2.11)	0.37
Dyspnea		8.60 (1.46-50.80)	0.02
Dependent Functional Status		1.13 (0.29-4.40)	0.86
COPD		1.72 (0.37-7.98)	0.49
Hypertension		0.65 (0.24-1.72)	0.38
Renal Failure		0.38 (0.02-8.00)	0.53
Disseminated Cancer		1.78 (0.72-4.39)	0.21
Wound Infection		3.54 (0.86-14.62)	0.08
Steroid Use		0.33 (0.07-1.43)	0.14
Recent Weight Loss		1.00 (1.37-7.58)	1.00
Bleeding Disorder		0.40 (0.04-3.71)	0.42
Preoperative Sepsis		3.04 (0.84-10.95)	0.09
ASA Class III/IV/V		2.59 (0.90-7.41)	0.08
Emergency Surgery		5.02 (1.24-22.08)	0.03
Transfer Status Other than Home		1.17 (0.39-3.50)	0.77
Wound Class II-IV		3.54 (0.86-14.62)	0.08
Duration of Surgery (hrs)		1.48 (1.24-1.77)	<0.001
	AUC	0.87	

Conclusions

-The overall prevalence of 30-day postoperative complications following corpectomy for intraspinal lesions is very high (45.1%), and most commonly due to transfusion within 72 hours of surgery (29.9%)

-Factors associated with postoperative complications included: spinal level (thoracic, lumbar/sacral), history of dyspnea, emergency surgery, and longer duration of surgery

-These risk factors have not been previously identified for this patient population and require further investigation within larger samples of patients undergoing corpectomy for intraspinal lesions