

# WASCHER

CERVICAL SPINE INSTITUTE

## ANTERIOR CERVICAL DECOMPRESSION + FUSION, + – INSTRUMENTATION 09/1992 – 12/2024

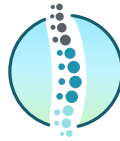
1 level, no instrumentation	142
1 level, ACD anterior plate	740
2 level, ACD anterior plate	546
3 level, ACD anterior plate	234
4 level, ACD anterior plate	15
2 separate levels and anterior plate	1
Revision ACD and anterior plate	<u>128</u>
	1806
1 level corpectomy	281
2 level corpectomy	85
3 level corpectomy	7
4 level corpectomy	2
Hybrid (corpectomy + 1 or 2 level ACD)	127
Hybrid (2 level corpectomy + level ACD)	9
Anterior-Posterior (includes ACDs and corpectomies)	288
Noncontiguous 2 level	<u>1</u>
	800

Total anterior patients: 1806 + 800 = 2606

### Literature Summary <sup>1</sup>

### NeuroSpine Center (Dr. Wascher 1806 cases)

seroma requiring drainage		< 0.1%	1
hematoma	0.2 - 0.9%	0.33 %	6
superficial infection, reaction to Steri-Strips	0.1 - 2%	0.1 %	2
deep infection	<1%	< 0.1 %	1
CSF leak		< 0.1 %	1
incidental durotomy		< 0.1 %	1
transient UE weakness		0 %	0
permanent UE/LE weakness		< 0.1 %	1
graft extrusion	0.4 - 4.6 %	0 %	0
transient dysphagia (>6 weeks)		0.4 %	7
permanent dysphagia (>12 weeks)		0.3 %	5 (mild)
transient hoarseness	11%	2.4%	43
permanent hoarseness (>12 weeks)	4 %	0.4 %	8
vascular injury		0 %	0
esophageal or tracheal injury		0 %	0
stroke within 30 days	<1%	< 0.1%	1
symptomatic pseudoarthrosis (mild)		0.3 %	5
symptomatic pseudoarthrosis req. revision	2 - 20%	0.2 %	4
asymptomatic hardware failure (broken screw)		0.4%	7
improvement		99.9%	1804
permanent complication rate			
requiring repeat surgery	at least 7.7%	0.66%	12



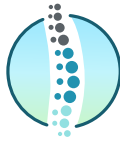
**WASCHER**  
CERVICAL SPINE INSTITUTE

**ANTERIOR CERVICAL CORPECTOMIES**  
**09/1992 – 12/2024**

	<u>Mayr et al<sup>1</sup></u>		<u>NeuroSpine Center</u>	
	<u>(5 surgeons)</u>		<u>(Dr. Wascher)</u>	
Single level (one body + 2 discs)	133		281	
Two level	96		85	
Three level	31		7	
Four level	1		2	
Hybrid (corpectomy +disc)			127	
Hybrid (2-level corpectomy + discectomy)			9	
Anterior-posterior			147	
Noncontiguous 2-level corpectomy			1	
	<hr/>		<hr/>	
	261		659	
Hematoma	0	0%	3	0.5%
Superficial infection (no drainage)	0	0%	1	0.1%
Deep infection requiring surgery	0	0%	0	0%
CSF leak	0	0%	0	0%
Incidental durotomy	0	0%	2	0.3%
Transient upper extremity weakness	2	0.8%	3	0.5%
Permanent upper extremity/lower extremity weakness	0	0%	0	0%
Transient dysphagia (> 6 weeks)	35	13.4%	6	0.9%
Respiratory failure requiring tracheostomy	?	?	1	0.1%
Permanent dysphagia (> 12 weeks)	7	2.7%	1	0.1%
Transient hoarseness	35	13.4%	8	1.2%
Permanent hoarseness	2	0.8%	0	0%
Vascular injury	0	0%	0	0%
Esophageal or tracheal injury	0	0%	0	0%
Asymptomatic pseudoarthrosis	33	12.6%	12	1.8%
Symptomatic pseudarthrosis	?	?	2	0.3%
Asymptomatic hardware failure	14	5.4%	12	1.8%
Symptomatic hardware failure requiring revision	2	0.8%	3	0.5%
<b>Permanent complication rate</b>	11	4.2%	5	0.8%
Improvement	259	99.2%	657	99.7%

Number of patients with previous anterior cervical surgery: 16 (2.4%)

<sup>1</sup>Mayr, Matthew T.; Subach, Brian R.; Corey, Christopher H.; Rodts, Gerald E.; and Hald, Regis W.; "Cervical spine stenosis: outcomes after anterior corpectomy, allograft reconstruction and instrumentation." J Neurosurg (Spine 1) 96: 10-16, 2002



**WASCHER**  
CERVICAL SPINE INSTITUTE

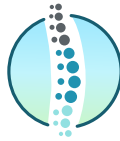
**CERVICAL LAMINECTOMIES  
WITH OR WITHOUT POSTERIOR FUSION/INSTRUMENTATION  
09/1992 – 12/2024**

**TOTAL 1011**

Cervical Foraminotomy	27
Cervical Laminectomies + Foraminotomies	108
1 LEVEL 1	
2 LEVEL 12	
3 LEVEL 43	
4 LEVEL 35	
5 LEVEL 15	
6 LEVEL <u>2</u>	
108	
Cervical Laminectomies, Fusion, Instrumentation	876
1 LEVEL 86	
2 LEVEL 200	
3 LEVEL 271	
4 LEVEL 268	
5 LEVEL 39	
6-6+ LEVEL <u>12</u>	
876	
<b>Total:</b>	<b>1011</b>

Complications (887 cases)

		<u>NeuroSpine Center</u>
1) Infection requiring revision	6	0.6%
2) Hematoma	0	0%
3) CSF Leak/Pseudomeningocele	0	0%
4) Glacial instability	0	0%
5) Death	0	0%
6) Temporary weakness or numbness	12	1.2%
7) Permanent nerve root injury	0	0%
8) Seroma	9	0.9%
9) Wound dehiscence	4	0.4%
10) Pain > 3 months	1	0.1%
11) Perioperative ischemic stroke	1	0.1%
12) Pulmonary embolism	2	0.2%
13) Pneumonia	3	0.3%
14) Asymptomatic broken hardware	7	0.7%
15) Hardware failure requiring revision	2	0.2%
<b>Complication rate requiring repeat surgery</b>	<b>19</b>	<b>1.9%</b>



**WASCHER**  
CERVICAL SPINE INSTITUTE

---

**PERIOPERATIVE COMPLICATIONS AFTER MULTILEVEL ANTERIOR AND POSTERIOR  
CERVICAL DECOMPRESSION AND FUSION**

	<b>Wewel et al<sup>1</sup></b>	<b>Wascher (WCSI)</b>
Patients	72 (single stage)	290 (two stage)
Years	2009-2016	1993-12/2024
Previous Surgery	44.4%	9.66%

**COMPLICATIONS**

<b>MAJOR:</b>	<b>Percentage</b>	<b>N</b>	<b>Percentage</b>
Permanent neurologic deficits	0%	0	0%
Vascular Injury	1.4%	0	0%
Tracheostomy	12.5%	1	0.3%
PEG Tube	12.5%	1	0.3%
Stroke	0%	0	0%

<b>MINOR:</b>	<b>Percentage</b>	<b>N</b>	<b>Percentage</b>
Temporary neurologic deficits	2.8%	2	0.7%
DVT	1.4%	1	0.3%
PE	0%	0	0.0%
UTI	1.4%	2	0.7%
Pneumonia	6.9%	2	0.7%
Superficial infection	5.6%	1	0.3%
Seroma	NL	2	0.7%
Dehiscence	NL	2	0.7%

Average length of time intubated after completion of the second surgery

	3.6 days	< 0.1 days	
Temporary RLN palsy	NL	5	1.7%
Permanent RLN palsy	2.8%	0	0%
Incidental durotomy	0%	1	0.3%
Reintubation	4.2%	2	0.7%
Caudal adjacent segment failure	4.2%	2	0.7%

### **SUMMARY**

Respiration rate	13.9%	6	2.1%
MAJOR COMPLICATIONS	30.6%	4	1.4%
MINOR COMPLICATIONS	18.1%	12	4.1%

("dysphagia" not used in analysis due to difficulty with accurate definition)

<sup>1</sup> Adapted from Wewel JT; Brahimaj BC; Kasliwal MK; and Traynelis VC. Perioperative Complications with Multilevel Anterior and Posterior Cervical Decompression and Fusion. Neurosurg Spine 2020; 32 (January): 9-14.