

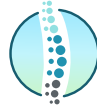
**ANTERIOR CERVICAL DECOMPRESSION
+ FUSION, + – INSTRUMENTATION
09/1992 – 12/2020**

1 level, no instrumentation	140
1 level, ACD anterior plate	691
2 level, ACD anterior plate	420
3 level, ACD anterior plate	180
4 level, ACD anterior plate	14
2 separate levels and anterior plate	1
Revision ACD and anterior plate	<u>117</u>
	1563
1 level corpectomy	278
2 level corpectomy	84
3 level corpectomy	6
4 level corpectomy	2
Hybrid (corpectomy + 1 or 2 level ACD)	126
Hybrid (2 level corpectomy + level ACD)	9
Anterior-Posterior (includes ACDs and corpectomies)	252
Noncontiguous 2 level	<u>1</u>
	758

Total anterior patients: 1563 + 758 = 2321

	<u>Summary of other Surgeons Data</u>	<u>Dr. Wascher's Data (1563 cases)</u>
seroma requiring drainage		0.1% 1
hematoma	0.2 - 0.9%	0.4 % 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 % 0
graft extrusion	0.4 - 4.6 %	0 % 0
transient dysphagia (>6 weeks)		0.4 % 7
permanent dysphagia (>12 weeks)		0.2 % 3 (mild)
transient hoarseness	11% ~	2.2% 35
permanent hoarseness (>12 weeks)	4 % ~	0.4 % 6
vascular injury		0 % 0
esophageal or tracheal injury		0 % 0
stroke within 30 days	<1%	0.1% 1
symptomatic pseudoarthrosis (mild)		0.3 % 4
symptomatic pseudoarthrosis req. revision	2 - 20% ~	0.3 % 4
asymptomatic hardware failure (broken screw)		0.3% 4
improvement		99.9% 1561
permanent complication rate requiring repeat surgery	at least 7.7% -	0.8% 12

¹ Tew, J M, Mayfield F H: Complications of Surgery of the Anterior Cervical Spine. Clinical Neurosurgery 23: 424-34, 1976.

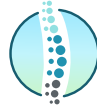


ANTERIOR CERVICAL CORPECTOMIES
09/1992 – 12/2020

	<u>Other Surgeons (5)</u>		<u>Dr. Wascher's Data</u>	
Single level (one body + 2 discs)	133		278	
Two level	96		84	
Three level	31		5	
Four level	1		2	
Hybrid (corpectomy +disc)			126	
Hybrid (2-level corpectomy + discectomy)			9	
Anterior-posterior			144	
Noncontiguous 2-level corpectomy			1	
	261		649	
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%	11	1.5%
Symptomatic hardware failure requiring revision	2	0.8%	3	0.5%
Permanent complication rate	11	4.2%	5	0.8%
Improvement	259	99.2%	647	99.7%

Number of patients with previous anterior cervical surgery: 16 (2.5%)

¹Mayr, 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



**CERVICAL LAMINECTOMIES
WITH OR WITHOUT POSTERIOR FUSION/INSTRUMENTATION
09/1992 – 12/2020**

TOTAL 774

Cervical Foraminotomy	24
Cervical Laminectomies + Foraminotomies	106
1 LEVEL 1	
2 LEVEL 11	
3 LEVEL 42	
4 LEVEL 35	
5 LEVEL 15	
6 LEVEL <u> 2 </u>	
106	
Cervical Laminectomies, Fusion, Instrumentation	644
1 LEVEL 67	
2 LEVEL 149	
3 LEVEL 213	
4 LEVEL 194	
5 LEVEL 16	
6- 6+ LEVEL <u> 7 </u>	
644	
Total:	774

Complications (640 cases)

	<u>Dr. Wascher's Data</u>	
1) Infection requiring revision	5	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	11	1.4%
7) Permanent nerve root injury	0	0%
8) Seroma	6	0.8%
9) Wound dehiscence	4	0.5%
10) Pain > 3 months	1	0.1%
11) Perioperative ischemic stroke	1	0.1%
12) Pulmonary embolism	2	0.3%
13) Pneumonia	3	0.4%
14) Asymptomatic broken hardware	3	0.4%
Complication rate requiring repeat surgery	13	1.7%

COMPLICATIONS OF **OUTPATIENT** CERVICAL SPINE SURGERY

COMPLICATION	NATIONAL AVERAGES ¹	WASCHER	
	(n = 21,533 pts)	(n = 161 consecutive pts)	
	%	(n)	%
Central nervous system	0.05	(0)	0.00
Hematoma	0.06	(0)	0.00
Durotomy	<0.05	(0)	0.00
CSF leak/fistula	<0.05	(0)	0.00
Other complications	0.19	(0)	0.00
Carotid/vertebral injury	0.00	(0)	0.00
Postoperative infection	0.05	(0)	0.00
Hoarse voice (dysphonia)	0.48	(1)	0.62
Difficulty swallowing (dysphagia)	0.22	(0)	0.00
Cardiac event within 90 days	0.05	(0)	0.00
Peripheral vascular	0.00	(0)	0.00

¹Baird E, Egorova N, McAnany S, et al; National Trends in Outpatient Treatment of Degenerative Cervical Spine Disease. **Global Spine, 2014; 4: pp. 143-150.**

COMPLICATIONS OF INPATIENT CERVICAL SPINE SURGERY

COMPLICATION	NATIONAL AVERAGES ¹	WASCHER
	(n = 170,974 pts)	(n = 2770 consecutive pts)
	%	(n) %
Central nervous system	0.46	(0) 0.00
Hematoma	0.84	(7) 0.25
Durotomy	0.54	(3) 0.10
CSF leak/fistula	0.18	(1) 0.04
Other complications	1.43	(7) 0.25
Carotid/vertebral injury	0.09	(0) 0.00
Postoperative infection	0.36	(6) 0.21
Hoarse voice (dysphonia)	0.48	(6) 0.21
Difficulty swallowing (dysphagia)	3.37	(4) 0.14
Cardiac event within 90 days	0.05	(1) 0.04
Peripheral vascular	0.75	(1) 0.04

¹Baird E, Egorova N, McAnany S, et al; National Trends in Outpatient Treatment of Degenerative Cervical Spine Disease. **Global Spine, 2014: 4: pp. 143-150.**

National averages complication rate is 10.4X that of Wascher¹