## Cervical spine surgery for Spondylitic Myelopathy: Ventral vs. Dorsal approach

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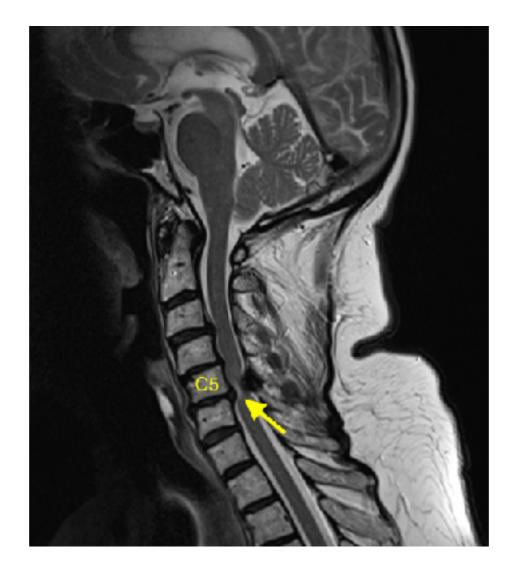


שיבא - מרכז רפואי אקדמי מצטיין

# Background

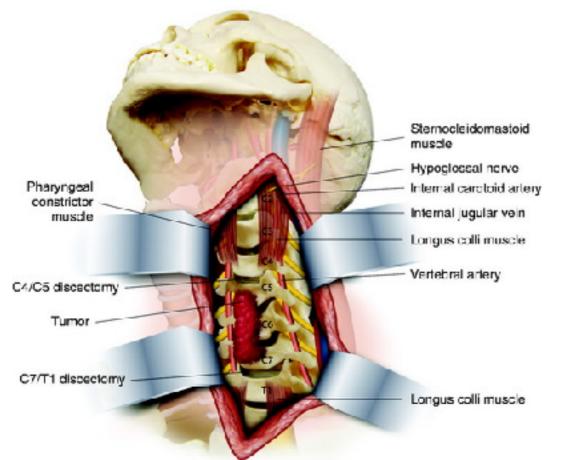
Cervical Spondylitic Myelopathy is a degenerative process affecting the cervical vertebral bodies and intervertebral discs.

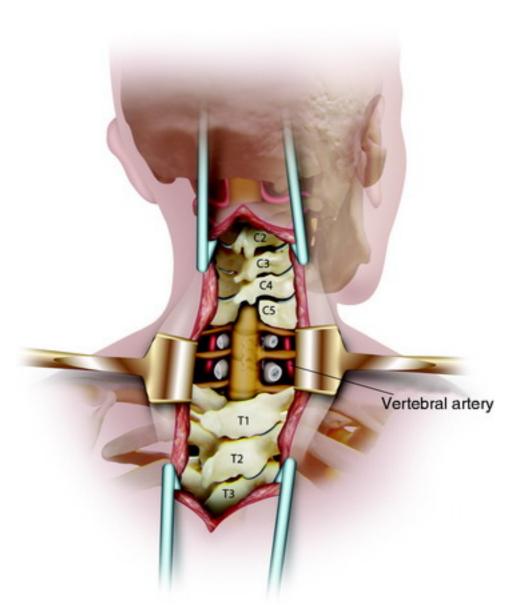
This process can lead to stenosis of the central spinal canal, compressing the cervical spinal cord and producing a syndrome of spinal cord dysfunction.



# Background

- Cervical Spine surgery is a common procedure that can be used for a wide range of pathologies including myelopathy.
- There are two different approaches which can be used:
  - Ventral Cervical Approach.
  - Dorsal Cervical Approach.





Aim

World Neurosurg. 2016 Oct;94:1-5. doi: 10.1016/j.wneu.2016.06.099. Epub 2016 Jun 30.

#### Cervical Spine Surgery: Approach-Related Complications.

Harel R<sup>1</sup>, Stylianou P<sup>2</sup>, Knoller N<sup>3</sup>.

- The current study examines which approach is safer for three or more levels treated for cervical myelopathy.
- We try to collect additional data that can help us determine which of the approaches involves less complication rates, and better outcome.

# Methods

- Retrospective Cohort.
- Evaluation of files and images of patients who underwent surgery either by the Anterior or the Posterior Cervical Approach.
- The exposure variable is the surgery approach Anterior/Posterior.
- The outcome variables are demographics, Surgery duration and EBL, neurologic change, complications infection, instrumentation and mortality.

# Sample Size Calculation

 $Z\alpha$  – alpha error, 2 sided = 1.96

 $Z_{1-\beta}$  – Power of study 80% = 0.8416

 $\sigma - SD = 0.307$   $n = \frac{2(Z_a + Z_{1-\beta})^{Z_{\sigma - \lambda_1}}}{\Lambda^2}$ 

 $\Delta$  – Effect size = 0.087

$$\frac{2(1.96+0.8416)^2(0.307)^2}{(0.087)^2} = 195$$

## Data

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#### Results

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Contents Previous	Next Help					$\sim$						
- Log	Descriptives											
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- Log	Descriptive Statistics											
E Log	ant_or_pos	N	Minimum	Maximum	Mean	Std. Deviation						
- Log	1 age	156	26.00	83.00	59.2692	11.87643						
	EBL (cc)	146	0	1000	90.88	195.991						
Log	lengh_cf_stay	155	1	28	4.67	4.642						
<ul> <li>Descriptives</li> </ul>	lengh_of_followup	148	1	11	2.06	1.395						
Descriptive Statistics	surgery_duration	146	50	257	101.53	29.549						
	Anesthesia_duration	146	78	283	146.22	36.096						
▼ Log	vri	165	.0	139.0	42.097	21.3407						
E Lea	Predicted probability	156	.11231	.36127	.2415781	.05498458						
	Predicted probability	147	.01633	.42565	.0902060	.D6649084						
▼ T-Test	Predicted probability	147	.01633	.42565	.0902060	.06649084						
I Warnings	Predicted probability	147	.00056	.68741	.0709363	.14130396						
· · · ·	nc_of_levels_new	156	3.00	5.00	S.403B	.55392						
▼ Log	Predicted probability	147	.07322	.47429	.1843192	.06964472						
E Log	Predicted probability	147	.00095	.81057	.1398198	.18882783						
T-Test	Valid N (listwise)	136										
1-1054	2 age	60	4.00	86.00	64.3667	14.64607						
Group Statistics	EBL (oc)	52	0	1500	160.58	288.732						
	lengh_cf_stay	60	1	22	6.60	4.658						
Independent Samples Test	lengh_cf_followup	69	1	4	1.75	.467						
- Log	surgery_duration	52	61	222	122.69	30.637						
areal.	Anesthesia_duration	60	118	821	181.52	44.249						
Leg	<b>v</b> 1	58	-110.0	150.0	46.483	39.1825						
<ul> <li>Frequencies</li> </ul>	Predicted probability	60	.13373	.39049	.2658868	.05938319						
	Predicted probability	53	.00000	.34990	.1229639	.09084735						
	Predicted probability	53	.00000.	.34990	.1229639	.09084738						
	Predicted probability	63	.03139	1.00000	.8029724	.26286486						
	nc_of_levels_new	60	3.00	7.00	4.3500	.73242						
	Predicted probability	53	.14869	.98466	.3542361	.21233301						
	Predicted probability	53	.03406	1.00000	.5446440	.22962993						
	Valid N (listwise)	48										

Table 1: Patients demographics, risk factors and surgical indication.

	Anterior approach	Posterior Approach	p value
Number	156	60	
Age	59	64	0.009
Gender (males %)	71.8%	80%	0.09+
ASA (1 & 2 Grades %)	56.4%	41.7%	0.26
ASIA D & E (%)	89.8%	81.7%	0.29
smoking %	41%	20%	0.002
Obesity %	%31.4	%20	0.065
Diabitis Melitus (%)	25%	31.7%	0.21
IHD (%)	5.20%	23.3%	0.39
HTN (%)	42.3%	46.7%	0.33
Kyphosis (%)	12.8%	5%	0.07