



Case Report

Two out of three of octogenarians benefitted from delayed resection of spinal meningiomas

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ABSTRACT

Background: Can elderly patients with thoracic meningioma and severe paraparesis benefit from delayed surgery?

Case Description: Two out of three octogenarians with severe preoperative paraparesis (all wheelchair-bound) were able to walk again following delayed (60–120 days from onset of deficit) surgical resection of thoracic spinal meningiomas.

Conclusion: Two out of three octogenarians with thoracic meningiomas causing severe paraparesis benefitted from the delayed (i.e. from 60 to 289 days) surgical resection of their tumors.

Keywords: Spinal meningioma, Spine surgery, Spine tumours, Tumour removal

INTRODUCTION

The limited literature suggests that even patients aged 70 years or older with severe paraparesis may benefit from the delayed surgical resection of spinal meningiomas.^[3,4] Here, we present three octogenarians with thoracic meningioma and severe preoperative paraparesis of whom two neurologically improved despite the 60–120 day delay in resection of their tumors.

CLINICAL, DIAGNOSTIC, AND SURGICAL MANAGEMENT OF THREE OCTOGENARIANS WITH THORACIC MENINGIOMAS

Three octogenarians, aged 86–89 years, presented with severe paraparesis (not able to stand supported) attributed to thoracic meningiomas that were resected between 60 and 289 days following the onset of their severe paraparesis [Table 1] and [Figure 1]. The first patient underwent a T3 hemilaminectomy for a T3-T4 ventral thoracic meningioma; a gross total resection was achieved, and the patient walked without assistance 146 days postoperatively. The second patient with a T2-T3 lateral thoracic meningioma underwent surgical resection 120 days after the onset of a severe paraparesis; she was able to walk with assistance 135 days later. However, the third patient with a T6 dorsal thoracic meningioma operated on 289 days following the onset of a severe paraparesis failed to improve up to 91 days postoperatively.

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Table 1: The data for three octogenarians undergoing thoracic meningioma resection.

	Case 1	Case 2	Case 3
Patient characteristics			
Age	87	86	89
Sex	Female	Female	Female
Severe Paraparesis	Yes	Yes	Yes
Able to Stand Supported	No	No	No
Urination	Spontaneous	Hesitant	Spontaneous
Preoperative Residence Prior the Paraparesis	Retirement home	Home (independently)	Home (independently)
Meningioma Characteristics			
Thoracic Location	Th3-4	Th2-3	Th6
Axial Location	Anterior	Lateral	Posterior
Maximal Medial-Lateral Diameter (mm)	12	12	12
Maximal Anterior-Posterior Diameter (mm)	14	11	12
Maximal Cranio-Caudal Diameter (mm)	15	20	25
Extent of Spinal Canal Compression (%) ^A	74%	64%	78%
Surgery			
Time Delay from the Onset of Paraparesis (days)	60	120	289
Surgical Approach – Hemilaminectomy	Yes	Yes	Yes
Hemilaminectomy Levels	Th3	Th2	Th6
Gross-total Tumor Removal	Yes	Yes	Yes
Strategy with Dural Insertion	Coagulation	Coagulation	Coagulation
Duration of Surgery (min)	60	187	289
Perioperative Complications	None	None	None
Postoperative Evaluation			
Outpatient Clinical Assessment (days)	146	135	91
Independent Ambulation	Yes	With assist	No
Urination	Spontaneous	Spontaneous	Spontaneous
Postoperative Residence at the Time of Assessment	Retirement home	Home (independently)	Health center ^B

^ADefined as (maximum axial meningioma area/spinal canal area) × 100%. ^BA hospital ward that is specialized to general medicine

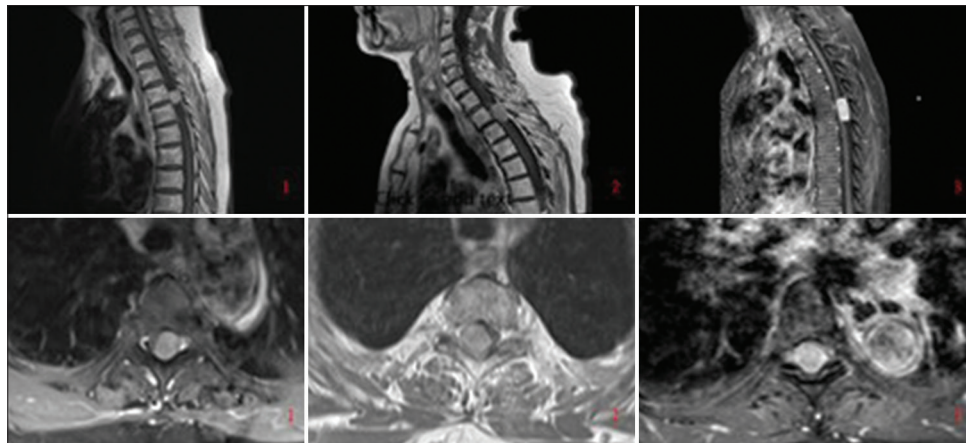


Figure 1: The sagittal and axial view of meningiomas in gadolinium-enhanced magnetic resonance imaging.

DISCUSSION

In our small case series, delayed surgery (i.e. 60–289 days) for thoracic meningiomas in severely paraparetic patients resulted in the ability to walk in two out of three octogenarians.

Functional recovery following delayed resection of thoracic meningiomas

The literature regarding functional recovery for older patients with severe paraparesis undergoing delayed resection of thoracic meningiomas is limited. Cavanaugh *et al.* have

reported a 101-year-old female with severe quadriparesis (with remained preoperative assisted walking ability) due to a cervical spinal meningioma. Postoperatively, she demonstrated partial recovery (insufficient information).^[2] Sacko *et al.* reported outcomes of 70-year-old and older patients with paraplegia due to spinal meningiomas; 25 out of 26 paraplegic patients improved postoperatively.^[4] Notably, neither patients' age nor the interval between the onset of preoperative paraparesis and surgery were positively correlated with functional outcomes. Ashry *et al.* also reported the surgical outcomes of 20 patients who were paraplegic due to thoracic meningiomas of whom 14 patients recovered, and all of them had surgery within 14 days from the onset of paralysis.^[1] When Schwake *et al.* studied 88 patients with spinal meningiomas, 73% of which were thoracic, motor deficits improved with surgery in 37 of 84 patients, while two deteriorated in the postoperative period.^[5]

CONCLUSION

Two out of three octogenarians with long-standing, severe preoperative paraparesis/paraplegia due to thoracic meningioma significantly benefitted from 60-289 day delayed surgery.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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