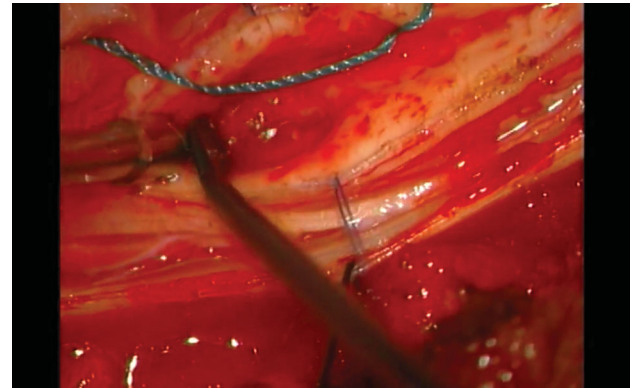


Microsurgical Resection of Low-Grade Spinal Cord Astrocytoma: 2-Dimensional Operative Video

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This video demonstrates microsurgical resection of low-grade (Grade I) thoracic spinal cord astrocytoma. Astrocytomas are the most common pediatric intramedullary tumors and occur secondary to ependymomas in adults.^{1,2} The treatment goal should be radical gross total resection while preserving neurological function with intraoperative neuromonitoring.²⁻⁴ To our knowledge, this is the first video report on microsurgical resection of low-grade spinal cord astrocytoma.

A 58-yr-old female presented with gait disturbances has been featured in this video. A spinal MRI revealed T1/T2 hyperintense intramedullary tumor at T4, suggesting spinal cord astrocytoma versus ependymoma. Dura was opened in the midline and tacked to the surrounding muscle tissue with tacking sutures. The arachnoid was opened separately with microscissors, keeping it intact for closure at the end of surgery. Liga clips were applied to hold the arachnoid to the dura. Myelotomy was done in

the midline,⁵ opening the posterior median sulcus over the length of the tumor and extending proximally and distally a few millimeters beyond the tumor.^{3,5} The tumor reduction was achieved by coagulation or debulking. Once sufficient debulking was achieved, dissection of the tumor margins toward surrounding cord was performed. Preoperative recording of motor-evoked potentials (MEPs) compared with continuous intraoperative MEPs were essential for preserving the neurological function and quality of life. The intraoperative finding of a clear tumor plane of resection carries positive prognostic significance and reduces the risk of complications.^{2,3,6}

A pathohistological diagnosis showed a low-grade (Grade I) spinal cord astrocytoma (pilocytic). Follow-up MRI showed no sign of tumor or recurrence. The patient recovered fully and was neurologically intact. Written consent was obtained directly from the patient.

KEY WORDS: Astrocytoma, Thoracic spine, Myelotomy, Intraoperative MEP, Case, Video (7 Max)

Operative Neurosurgery 17:E107–E108, 2019

DOI:10.1093/ons/opy386

Received, July 25, 2018. **Accepted,** November 20, 2018. **Published Online,** December 19, 2018.

Disclosures

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

Acknowledgment

The authors wish to thank Andrew J. Gienapp for copy editing, preparation of the manuscript for publishing, and publication assistance.

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