C1 Hemilaminectomy for Resection of Foramen Magnum Meningioma: 2-Dimensional Operative Video

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Abstract
We present a case of a sizeable foramen magnum meningioma that was resected through a C1 hemilaminectomy in prone (concorde) position. The patient is a 51-year-old woman with a 3-month history of progressive paresthesia of the upper and lower extremities, followed by gait disturbance, and hand apraxia. There was no complaint of nuchal pain. On magnetic resonance imaging (MRI) a briskly enhancing extra-axial, intradural craniospinal lesion, extending from the basion of the lower clivus, over the tectorial membrane to the middle of the axis' body was discovered. There was significant transposition and compression of the medulla and corresponding focal hyperintensity on T2-weighted imaging.

On physical examination, the patient was ambulatory independently, notwithstanding a pronounced spinal ataxia. There were deficits in sensation and proprioception, as well as urinary retention, but preserved function of the lower cranial nerves.

In view of the profound transposition of the medulla, utilization of the corridor created by the tumor seemed feasible and we felt that a limited C1 hemilaminectomy would provide sufficient microsurgical access thus obviating a more extensive and invasive approach to the craniocervical junction.

A gross-total resection was achieved; histopathology confirmed a World Health Organization (WHO) grade I angiomatous meningioma with a low-proliferation index. The patient was discharged home 3 days after surgery and her spinal ataxia resolved completely within 3 months of out-patient rehabilitation. At 3-year follow-up, there was no indication of residual or recurrence.

The link to the video can be found at: https://youtu.be/WyShbfr-xi0.

Keywords
► foramen magnum
► C1 hemilaminectomy
► craniocervical junction
► meningioma
► concorde position
► operative video

Conflict of Interest
None declared.

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Comments

This is a nice video demonstrating resection of a foramen magnum meningioma through a paramedian skin incision and a hemilaminectomy. Performing microdissection between and around the C2 nerve roots and spinal accessory nerve is shown. This is a nice approach for meningiomas ventral to the spinal cord and minimizes the skin incision and risk of a pseudomeningocele collection postoperatively.

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Disclosures
None. The authors have no personal, institutional, or financial interest in any of the materials, drugs, or devices described in this article.