

Cervical spinal intradural meningioma

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This [cervical spinal meningioma](#) is a [intradural extramedullary spinal tumor](#).

Clinical features

The clinical features of cervical spinal meningiomas can vary depending on the size, location, and growth rate of the tumor. Here are some common clinical features associated with cervical spinal meningiomas:

Neck pain: One of the most common symptoms of cervical spinal meningiomas is neck pain. The pain may be localized to the neck or may radiate to the shoulders, arms, or hands.

Sensory changes: Cervical spinal meningiomas can cause sensory changes in the affected areas. This can include numbness, tingling, or a loss of sensation in the neck, shoulders, arms, or hands.

Weakness: As the tumor grows and compresses the spinal cord or nerve roots, it can lead to weakness in the upper extremities. This weakness may be more pronounced on one side of the body.

Difficulty with coordination: Cervical spinal meningiomas can affect the coordination and fine motor skills of the hands and arms. This can manifest as clumsiness, difficulty with tasks requiring dexterity, or a loss of grip strength.

Neck stiffness: Meningiomas can cause inflammation in the surrounding tissues, leading to neck stiffness and limited range of motion.

Headaches: Some individuals with cervical spinal meningiomas may experience headaches, which can

vary in intensity and frequency. These headaches may be localized to the back of the head or may radiate to the temples or forehead.

Bowel and bladder dysfunction: In more advanced cases, cervical spinal meningiomas can compress the spinal cord, leading to bowel and bladder dysfunction. This can result in urinary or fecal incontinence, difficulty urinating or emptying the bladder completely, or constipation.

Differential diagnosis

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Treatment

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Case series

2015

A study describes performing a posterolateral approach to surgically treat anterior based cervical meningioma. Aboul-Enein et al report on 16 cases operated upon using this approach, and we present our results and display some of our cases with special emphasis on achieving total resection, rate of recurrence and the neurological outcome.

The study reports on 16 patients who underwent surgery for anterior based cervical meningioma. Data regarding age, sex, duration and type of symptoms, levels, topographical locations, surgical results, and histological features are presented.

The age ranged between 19 and 78 years old with a mean age of 48.3 years. The initial symptom among most patients (13 patients) was [neck pain](#), [numbness](#) and [radicular pain](#) were found in 9, and clumsiness of the upper extremity in 7 patients. Total excision with dural coagulation was done in 11 cases, and spilt dura technique was feasible in 4 cases where the tumor together with the inner dura layer was resected. They encountered one case of atypical meningioma with Pia and arachnoid invasion which rendered total excision too risky and only subtotal resection was achieved. There were no major surgical or permanent neurological complications. Lateral mass fixation was used in 2 patients with a strictly midline anterior tumor in which a total facetectomy was done. All patients were followed up for an average of 3.6 years. Tumor recurrence was seen in 3 patients.

The lateral approach allows for safe and total removal of ventral cervical meningioma. This approach gives a direct avenue to the tumor without risk of destabilizing the vertebral column. The rate of recurrence is the same when using the anterior approach but is less invasive with less blood loss ¹⁾.

Fraioli et al present their experience about eight patients operated through anterior microsurgical approach. Exposure of meningiomas was achieved through one or two corpectomies, according to meningioma extension. Tumour removal was performed thanks to the aid of a dedicated ultrasonic aspirator, and intraoperative evoked potentials were employed. Particular care was taken with the materials adopted for reconstruction of the anterior dural plane, to avoid postoperative cerebrospinal fluid leak. Vertebral fusion and stabilization were achieved by tantalum cage or titanium graft in case of one or two corpectomies respectively; anterior titanium plate fixed with screws was applied in all patients. Extent of tumour removal was related to the presence of a conserved arachnoidal plane between the tumour and the spinal cord: total removal was achieved in 2 patients, while gross total removal in the other six ones. Postoperative neurological outcome, which was favourable in all patients, was related mostly to preoperative neurologic status. No recurrence after total removal and no remnant growth after gross total removal occurred during an average follow-up period of 6, 7 years ²⁾.

Case reports

A 57-year-old female presented with a 1-month history of headaches. The cervical MR revealed a well-demarcated intradural/extramedullary tumor compressing the spinal cord at the C1-C2 level that measured 12 mm × 10 mm × 25 mm. She underwent microsurgical tumor resection. Intraoperatively, the tumor was adherent to the spinal accessory nerve, rather than the dura mater. Gross total tumor resection was performed, and the pathology was consistent with an atypical meningioma.

Atypical meningiomas rarely originate from the spinal accessory nerve. Gross total resection is the procedure of choice to mitigate the risk of tumor recurrence ³⁾.

A 53-year-old man presented with intracranial hemorrhage that manifested as disturbed consciousness and right hemiparesis. Magnetic resonance (MR) angiography demonstrated severe stenosis of the terminal portion of the bilateral internal carotid arteries, implying Moyamoya disease. Cranial MR images showed a hematoma in the left basal ganglia perforating into the lateral ventricle, which was incidentally detected as a spinal tumor compressing the cervical cord at the C2 level. After conservative management for cerebral hemorrhage, the patient underwent total removal of the spinal tumor. Surgical findings showed that the tumor consisted of extra- and intradural components. Histopathological findings showed that the extra- and intradural components were schwannoma and meningioma, respectively. Case 2: A 70-year-old man presented with progressive left hemiparesis and numbness in both lower extremities. Craniocervical MR images demonstrated a paraspinal tumor compressing the spinal cord at C2 level. Surgical findings disclosed that the tumor consisted of major extradural- and minor intradural components. Histopathological study showed that these components had discrete histological findings: extradural lesion was schwannoma and intradural lesion was meningioma. Concurrent tumors with discrete histopathology should be considered in tumors with extra- and intradural components, particularly, when they are located in the high cervical spine ⁴⁾.

A 33-yr-old female who presented with cervical radicular and myelopathy symptoms. MRI of the cervical spinal demonstrated an anterolateral, 3 cm intradural, extramedullary tumor causing significant cord compression at C6-7 level. The patient was taken to surgery for cervical laminoplasty and microsurgical tumor removal. The current 3-dimensional video demonstrates the steps involved

during the microsurgical resection of the tumor. In order to facilitate spinal cord rotation without compromising blood supply the dentate ligaments at 3 levels (C5-C7) were identified and transected, the anterolateral-situated tumor was separated from the exiting right C6 and C7 nerve rootlet followed by circumferential dissection, and subsequent en bloc resection. No complications were encountered during the procedure; somatosensory and motor evoked potential registration remained intact. The patient recovered well from the procedure and was discharged on postoperative day three with improvement in her presenting symptoms ⁵.

Unclassified

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