

# Cervical spinal intradural meningioma

## Latest PubMed-related articles about cervical spinal intradural meningioma

- Solitary intradural extramedullary recurrence of testicular diffuse large B-cell lymphoma mimicking a schwannoma: illustrative case
- Applications of endoscopic techniques in spinal oncology: A systematic review of the contemporary literature
- Case report: Intradural-extramedullary cervical spine clear cell meningioma mimicking a schwannoma in a child
- Spinal Dumbbell Meningiomas: A Systematic Review
- Primary Extradural Meningioma: A Systematic Review of Diagnostic Features, Clinical Management, and Surgical Outcomes
- Neglected Case of Cervical Meningocele in an Adult
- Unilateral Hemilaminectomy as Primary Treatment for Spinal Cord Tumors: Retrospective Cohort of 38 Cases with a Minimum Follow-Up of 24 Months
- Transcranial Corticospinal Motor-Evoked Potentials in Cases of Ventral and Ventrolateral Intradural Extramedullary Cervical Spinal Cord Tumors

---

---

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

[Cervical spinal schwannoma...](#)

## Treatment

[Cervical spinal intradural meningioma treatment](#)

## 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 <sup>1)</sup>.

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<sup>2)</sup>.

## 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<sup>3)</sup>.

---

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<sup>4)</sup>.

---

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 <sup>5)</sup>.

## Unclassified

- 4: Sorenson TJ, Lanzino G, Rangel Castilla L. Surgical Resection of Cervical Meningioma: 3-Dimensional Operative Video. *Oper Neurosurg (Hagerstown)*. 2018 Sep 24. doi: 10.1093/ons/opy292. [Epub ahead of print] PubMed PMID: 30252111.
- 5: Riqué Dormido J, Gómez Cárdenas E, Marín Laut FM, Millan Ortega I. Rhabdoid type intramedullary meningioma. A case report and review of the literature. *Neurocirugia (Astur)*. 2018 Sep 12. pii: S1130-1473(18)30085-X. doi: 10.1016/j.neucir.2018.08.001. [Epub ahead of print] English, Spanish. PubMed PMID: 30219414.
- 6: Dekker SE, Ostergard TA, Glenn CA, Cox E, Bambakidis NC. Posterior Cervical Laminoplasty for Resection Intradural Extramedullary Spinal Meningioma: 2-Dimensional Operative Video. *Oper Neurosurg (Hagerstown)*. 2019 Mar 1;16(3):392. doi: 10.1093/ons/opy204. PubMed PMID: 30107430.
- 7: Landriel F, Hem S, Vecchi E, Yampolsky C. Minimally Invasive Resection of a Cervical Anterolateral Meningioma: 2-Dimensional Operative Video. *Oper Neurosurg (Hagerstown)*. 2019 Apr 1;16(4):520. doi: 10.1093/ons/opy190. PubMed PMID: 30060214.
- 8: Sawada M, Nakae T, Munemitsu T, Hojo M. Spinal Meningioma Arising from the Denticulate Ligament. *World Neurosurg*. 2018 Jul;115:329-333. doi: 10.1016/j.wneu.2018.04.160. Epub 2018 May 3. Review. PubMed PMID: 29729464.
- 9: Ghasem A, Gjolaj JP, Greif DN, Green BA. Excision of a centrally based ventral intradural extramedullary tumor of the cervical spine through a direct posterior approach. *Spinal Cord Ser Cases*. 2017 Dec 15;3:17092. doi: 10.1038/s41394-017-0017-8. eCollection 2017. PubMed PMID: 29423297; PubMed Central PMCID: PMC5798919.
- 10: Hu X, Chen Z, Wang Y. A rare case of concomitant cervical disc herniation and intradural meningioma treated with one-stage posterior surgery. *Eur Spine J*. 2018 Jul;27(Suppl 3):426-430. doi: 10.1007/s00586-017-5414-y. Epub 2017 Dec 14. PubMed PMID: 29242976.
- 11: Bayoumi AB, Laviv Y, Karaali CN, Ertılav K, Kepoglu U, Toktas ZO, Konya D, Kasper EM. Spinal Meningiomas: 61 cases with predictors of early postoperative surgical outcomes. *J Neurosurg Sci*. 2017 Nov 7. doi: 10.23736/S0390-5616.17.04102-9. [Epub ahead of print] PubMed PMID: 29115099.
- 12: Zhang LH, Yuan HS. Imaging Appearances and Pathologic Characteristics of Spinal Epidural Meningioma. *AJNR Am J Neuroradiol*. 2018 Jan;39(1):199-204. doi: 10.3174/ajnr.A5414. Epub 2017 Oct 19. PubMed PMID: 29051204.

- 13: Sivaraju L, Thakar S, Ghosal N, Hegde AS. Cervical En-Plaque Extradural Meningioma Involving Brachial Plexus. *World Neurosurg.* 2017 Dec;108:994.e7-994.e10. doi: 10.1016/j.wneu.2017.09.004. Epub 2017 Sep 8. PubMed PMID: 28893699.
- 14: Mende KC, Krätzig T, Mohme M, Westphal M, Eicker SO. Keyhole approaches to intradural pathologies. *Neurosurg Focus.* 2017 Aug;43(2):E5. doi: 10.3171/2017.5.FOCUS17198. PubMed PMID: 28760029.
- 15: Ito K, Imagama S, Ando K, Kobayashi K, Shido Y, Go Y, Arima H, Kanbara S, Hirose T, Matsuyama Y, Nishida Y, Ishiguro N. Intraspinal meningioma with malignant transformation and distant metastasis. *Nagoya J Med Sci.* 2017 Feb;79(1):97-102. doi: 10.18999/nagjms.79.1.97. PubMed PMID: 28303067; PubMed Central PMCID: PMC5346626.
- 16: Singh H, Patir R, Vaishya S, Gupta A, Miglani R. Application of a Far-Lateral Approach to the Subaxial Spine: Application, Technical Difficulties, and Results. *World Neurosurg.* 2017 Apr;100:167-172. doi: 10.1016/j.wneu.2016.12.095. Epub 2016 Dec 31. PubMed PMID: 28043885.
- 17: Monserrate A, Zussman B, Ozpinar A, Niranjan A, Flickinger JC, Gerszten PC. Stereotactic radiosurgery for intradural spine tumors using cone-beam CT image guidance. *Neurosurg Focus.* 2017 Jan;42(1):E11. doi: 10.3171/2016.9.FOCUS16356. PubMed PMID: 28041317.
- 18: Notani N, Miyazaki M, Kanezaki S, Ishihara T, Kawano M, Tsumura H. Surgical management of ventrally located spinal meningiomas via posterior approach. *Eur J Orthop Surg Traumatol.* 2017 Feb;27(2):181-186. doi: 10.1007/s00590-016-1860-1. Epub 2016 Sep 26. PubMed PMID: 27671472.
- 19: Ito K, Aoyama T, Miyaoka Y, Seguchi T, Horiuchi T, Hongo K. Surgery for ventral intradural thoracic spinal tumors with a posterolateral transpedicular approach. *Acta Neurochir (Wien).* 2016 Aug;158(8):1563-9. doi: 10.1007/s00701-016-2864-7. Epub 2016 Jun 11. PubMed PMID: 27290663.
- 20: Bettaswamy G, Ambesh P, Das KK, Sahu R, Srivastava A, Mehrotra A, Jaiswal A, Jaiswal S, Behari S. Extradural spinal meningioma: Revisiting a rare entity. *J Craniovertebr Junction Spine.* 2016 Jan-Mar;7(1):65-8. doi: 10.4103/0974-8237.176630. PubMed PMID: 27041890; PubMed Central PMCID: PMC4790153.
- 21: Foster M, Soh C, DuPlessis D, Karabatsou K. Circumferential intradural meningioma of the thoracic spinal cord. *Spine J.* 2016 Jul;16(7):e479-83. doi: 10.1016/j.spinee.2016.02.053. Epub 2016 Mar 3. PubMed PMID: 26949034.
- 22: Aiyer SN, Shetty AP, Kanna R, Maheswaran A, Rajasekaran S. Spinal cord herniation following cervical meningioma excision: a rare clinical entity and review of literature. *Eur Spine J.* 2016 May;25 Suppl 1:216-9. doi: 10.1007/s00586-016-4412-9. Epub 2016 Feb 4. Review. PubMed PMID: 26846229.
- 23: Bernard F, Lemee JM, Delion M, Fournier HD. Lower third clivus and foramen magnum intradural tumor removal: The plea for a simple posterolateral approach. *Neurochirurgie.* 2016 Apr;62(2):86-93. doi: 10.1016/j.neuchi.2015.10.010. Epub 2016 Jan 4. PubMed PMID: 26763338.
- 24: Takami T, Naito K, Yamagata T, Yoshimura M, Arima H, Ohata K. Posterolateral approach for spinal intradural meningioma with ventral attachment. *J Craniovertebr Junction Spine.* 2015 Oct-Dec;6(4):173-8. doi: 10.4103/0974-8237.167862. PubMed PMID: 26692694; PubMed Central PMCID: PMC4660493.
- 25: Aboul-Enein HA, Khidr WM, Abdeen KM, Madawi AA. Surgical management of ventrally based lower cervical (subaxial) meningiomas through the lateral approach: Report on 16 cases. *Clin Neurol*

Neurosurg. 2015 Dec;139:152-8. doi: 10.1016/j.clineuro.2015.10.008. Epub 2015 Oct 13. PubMed PMID: 26476699.

26: Oichi T, Chikuda H, Morikawa T, Mori H, Kitamura D, Higuchi J, Taniguchi Y, Matsubayashi Y, Oshima Y, Tanaka S. Concurrent spinal schwannoma and meningioma mimicking a single cervical dumbbell-shaped tumor: case report. J Neurosurg Spine. 2015 Dec;23(6):784-7. doi: 10.3171/2015.3.SPINE141315. Epub 2015 Aug 28. PubMed PMID: 26315952.

27: Afathi M, Peltier E, Adetchessi T, Graillon T, Dufour H, Fuentes S. Minimally invasive transmuscular approach for the treatment of benign intradural extramedullary spinal cord tumours: Technical note and results. Neurochirurgie. 2015 Oct;61(5):333-8. doi: 10.1016/j.neuchi.2015.05.001. Epub 2015 Aug 4. PubMed PMID: 26249272.

28: Turel MK, D'Souza WP, Rajshekhar V. Hemilaminectomy approach for intradural extramedullary spinal tumors: an analysis of 164 patients. Neurosurg Focus. 2015 Aug;39(2):E9. doi: 10.3171/2015.5.FOCUS15170. PubMed PMID: 26235026.

29: Raygor KP, Than KD, Chou D, Mummaneni PV. Comparison of minimally invasive transspinous and open approaches for thoracolumbar intradural-extramedullary spinal tumors. Neurosurg Focus. 2015 Aug;39(2):E12. doi: 10.3171/2015.5.FOCUS15187. PubMed PMID: 26235010.

30: Morselli C, Ruggeri AG, Pichieri A, Marotta N, Anzidei M, Delfini R. Intradural Extramedullary Primary Ependymoma of the Craniocervical Junction Combined with C1 Partial Agenesis: Case Report and Review of the Literature. World Neurosurg. 2015 Dec;84(6):2076.e1-6. doi: 10.1016/j.wneu.2015.07.027. Epub 2015 Jul 23. PubMed PMID: 26210708.

31: Athanasiou A, Magras I, Sarlis P, Spyridopoulos E, Polyzoidis K. Anterolateral meningioma of the foramen magnum and high cervical spine presenting intradural and extradural growth in a child: case report and literature review. Childs Nerv Syst. 2015 Dec;31(12):2345-51. doi: 10.1007/s00381-015-2784-5. Epub 2015 Jun 16. Review. PubMed PMID: 26077596.

32: Eicker SO, Mende KC, Dührsen L, Schmidt NO. Minimally invasive approach for small ventrally located intradural lesions of the craniovertebral junction. Neurosurg Focus. 2015 Apr;38(4):E10. doi: 10.3171/2015.2.FOCUS14799. PubMed PMID: 25828486.

33: Alabaid A, Bennardo MR, Cenic A, Lach B. Mixed capillary-cavernous extramedullary intradural hemangioma of the spinal cord mimicking meningioma: Case report. Br J Neurosurg. 2015 Jun;29(3):438-9. doi: 10.3109/02688697.2014.997668. Epub 2015 Jan 6. PubMed PMID: 25562682.

34: Savardekar A, Chatterjee D, Chatterjee D, Dhandapani S, Mohindra S, Salunke P. Totally extradural spinal en plaque meningiomas - Diagnostic dilemmas and treatment strategies. Surg Neurol Int. 2014 Aug 28;5(Suppl 7):S291-4. doi: 10.4103/2152-7806.139610. eCollection 2014. PubMed PMID: 25289148; PubMed Central PMCID: PMC4173215.

35: Wu L, Yang T, Deng X, Yang C, Zhao L, Yao N, Fang J, Wang G, Yang J, Xu Y. Spinal extradural en plaque meningiomas: clinical features and long-term outcomes of 12 cases. J Neurosurg Spine. 2014 Dec;21(6):892-8. doi: 10.3171/2014.7.SPINE13819. Epub 2014 Sep 19. PubMed PMID: 25237843.

36: Chen KY, Wu JC, Lin SC, Huang WC, Cheng H. Coexistence of neurofibroma and meningioma at exactly the same level of the cervical spine. J Chin Med Assoc. 2014 Nov;77(11):594-7. doi: 10.1016/j.jcma.2014.06.007. Epub 2014 Aug 12. PubMed PMID: 25128077.

- 37: Tan LA, Takagi I, Straus D, O'Toole JE. Management of intended durotomy in minimally invasive intradural spine surgery: clinical article. *J Neurosurg Spine*. 2014 Aug;21(2):279-85. doi: 10.3171/2014.3.SPINE13719. Epub 2014 May 9. PubMed PMID: 24867211.
- 38: Konovalov NA, Shevelev IN, Nazarenko AG, Asiutin DS, Korolishin VA, Timonin SI, Zakirov BA, Onoprienko RA. [The use of minimally invasive approaches to resect intradural extramedullary spinal cord tumors]. *Zh Vopr Neirokhir Im N N Burdenko*. 2014;78(6):24-36. doi: 10.17116/neiro201478624-36. English, Russian. PubMed PMID: 25809166.
- 39: Flores BC, Boudreaux BP, Klinger DR, Mickey BE, Barnett SL. The far-lateral approach for foramen magnum meningiomas. *Neurosurg Focus*. 2013 Dec;35(6):E12. doi: 10.3171/2013.10.FOCUS13332. Review. PubMed PMID: 24289120.
- 40: José-López R, de la Fuente C, Pumarola M, Añor S. Spinal meningiomas in dogs: description of 8 cases including a novel radiological and histopathological presentation. *Can Vet J*. 2013 Oct;54(10):948-54. PubMed PMID: 24155414; PubMed Central PMCID: PMC3781425.
- 41: D'Amico A, Napoli M, Cirillo M, D'Arco F, D'Anna G, Caranci F, Mariniello G, Brunetti A. Imaging of cervical extradural en-plaque meningioma. A case report. *Neuroradiol J*. 2012 Nov;25(5):598-603. Epub 2012 Nov 9. PubMed PMID: 24029096.
- 42: Cho HR, Lee JK, Paik AL, Jang WY. An unusual cervical spinal meningioma in a child. *J Korean Neurosurg Soc*. 2013 Feb;53(2):129-31. doi: 10.3340/jkns.2013.53.2.129. Epub 2013 Feb 28. PubMed PMID: 23560181; PubMed Central PMCID: PMC3611059.
- 43: Mei-Hua L, Geng-Sheng X, Zhi-Qun J, Yi-Yun L, Tao H. Supracondylar transjugular tubercle approach to intradural lesions anterior or anterolateral to the craniocervical junction without resection of the occipital condyle. *Turk Neurosurg*. 2013;23(2):202-7. doi: 10.5137/1019-5149.JTN.6744-12.1. PubMed PMID: 23546906.
- 44: Hafiz MG, Rahman MR, Yeamin MB. Intradural intramedullary spinal cord meningioma in a seven years old female child. *Mymensingh Med J*. 2013 Jan;22(1):180-5. PubMed PMID: 23416829.
- 45: Gerszten PC, Chen S, Quader M, Xu Y, Novotny J Jr, Flickinger JC. Radiosurgery for benign tumors of the spine using the Synergy S with cone-beam computed tomography image guidance. *J Neurosurg*. 2012 Dec;117 Suppl:197-202. doi: 10.3171/2012.8.GKS12981. PubMed PMID: 23205810.
- 46: Lee JH, Jang JW, Kim SH, Moon HS, Lee JK, Kim SH. Surgical results after unilateral laminectomy for the removal of spinal cord tumors. *Korean J Spine*. 2012 Sep;9(3):232-8. doi: 10.14245/kjs.2012.9.3.232. Epub 2012 Sep 30. PubMed PMID: 25983821; PubMed Central PMCID: PMC4431008.
- 47: González-Martínez EL, García-Cosamalón PJ, Fernández-Fernández JJ, Ibáñez-Plágaro FJ, Alvarez B. [Minimally invasive approach of extramedullary intradural spinal tumours. Review of 30 cases]. *Neurocirugia (Astur)*. 2012 Sep;23(5):175-81. doi: 10.1016/j.neucir.2012.02.005. Epub 2012 Aug 4. Review. Spanish. PubMed PMID: 22871355.
- 48: Liu JK. Extreme lateral transcondylar approach for resection of ventrally based meningioma of the cranivertebral junction and upper cervical spine. *Neurosurg Focus*. 2012 Jul;33(Suppl 1):1. doi: 10.3171/2012.V2.FOCUS12143. PubMed PMID: 26016397.
- 49: Ghosal N, Kumaran SP, Furtado SV, Hegde AS. Mixed schwannoma with meningioma - report on 2 cases of unusual tumor with review of literature. *Clin Neuropathol*. 2012 Sep-Oct;31(5):374-8. doi:

10.5414/NP300437. Review. PubMed PMID: 22541779.

50: Gerszten PC, Quader M, Novotny J Jr, Flickinger JC. Radiosurgery for benign tumors of the spine: clinical experience and current trends. *Technol Cancer Res Treat*. 2012 Apr;11(2):133-9. PubMed PMID: 22335407.

51: Ikuma H, Shinohara K, Maehara T, Yokoyama Y, Tanaka M. C2 lamina reconstruction using locking miniplate for the intradural tumor of the craniocervical junction (two case reports). *Eur Spine J*. 2012 Jun;21 Suppl 4:S509-12. doi: 10.1007/s00586-011-2138-2. Epub 2012 Jan 8. PubMed PMID: 22228574; PubMed Central PMCID: PMC3369031.

52: Nakamizo A, Suzuki SO, Shimogawa T, Amano T, Mizoguchi M, Yoshimoto K, Sasaki T. Concurrent spinal nerve root schwannoma and meningioma mimicking single-component schwannoma. *Neuropathology*. 2012 Apr;32(2):190-5. doi: 10.1111/j.1440-1789.2011.01239.x. Epub 2011 Jul 12. Review. PubMed PMID: 21749464.

53: Angevine PD, Kellner C, Haque RM, McCormick PC. Surgical management of ventral intradural spinal lesions. *J Neurosurg Spine*. 2011 Jul;15(1):28-37. doi: 10.3171/2011.3.SPINE1095. Epub 2011 Apr 15. PubMed PMID: 21495815.

54: Zemmoura I, Hamlat A, Morandi X. Intradural extramedullary spinal inflammatory myofibroblastic tumor: case report and literature review. *Eur Spine J*. 2011 Jul;20 Suppl 2:S330-5. doi: 10.1007/s00586-011-1783-9. Epub 2011 Apr 6. Review. PubMed PMID: 21465290; PubMed Central PMCID: PMC3111501.

55: Kim CH, Chung CK. Surgical outcome of a posterior approach for large ventral intradural extramedullary spinal cord tumors. *Spine (Phila Pa 1976)*. 2011 Apr 15;36(8):E531-7. doi: 10.1097/BRS.0b013e3181dc8426. PubMed PMID: 21178841.

56: Yamashita T, Sakaura H, Oshima K, Iwasaki M, Yoshikawa H. Solitary intradural extramedullary lymphoma of the cervical spine. *J Neurosurg Spine*. 2010 Apr;12(4):436-9. doi: 10.3171/2009.11.SPINE08735. PubMed PMID: 20367381.

57: Song KW, Shin SI, Lee JY, Kim GL, Hyun YS, Park DY. Surgical results of intradural extramedullary tumors. *Clin Orthop Surg*. 2009 Jun;1(2):74-80. doi: 10.4055/cios.2009.1.2.74. Epub 2009 May 27. PubMed PMID: 19885058; PubMed Central PMCID: PMC2766757.

58: Eom KS, Kim HS, Kim TY, Kim JM. Intraventricular Malignant Meningioma with CSF-Disseminated Spinal Metastasis : Case Report and Literature Review. *J Korean Neurosurg Soc*. 2009 Apr;45(4):256-9. doi: 10.3340/jkns.2009.45.4.256. Epub 2009 Apr 30. PubMed PMID: 19444356; PubMed Central PMCID: PMC2682126.

59: Senturk S, Guzel A, Guzel E, Bayrak AH, Sav A. Cervical spinal meningioma mimicking intramedullary spinal tumor. *Spine (Phila Pa 1976)*. 2009 Jan 1;34(1):E45-9. doi: 10.1097/BRS.0b013e318189fd20. PubMed PMID: 19127148.

60: Sim JE, Noh SJ, Song YJ, Kim HD. Removal of intradural-extramedullary spinal cord tumors with unilateral limited laminectomy. *J Korean Neurosurg Soc*. 2008 May;43(5):232-6. doi: 10.3340/jkns.2008.43.5.232. Epub 2008 May 20. PubMed PMID: 19096602; PubMed Central PMCID: PMC2588222.

61: Sahni D, Harrop JS, Kalfas IH, Vaccaro AR, Weingarten D. Exophytic intramedullary meningioma of

the cervical spinal cord. *J Clin Neurosci.* 2008 Oct;15(10):1176-9. doi: 10.1016/j.jocn.2007.08.025. Epub 2008 Aug 16. PubMed PMID: 18710810.

62: Gerszten PC, Burton SA, Ozhasoglu C, McCue KJ, Quinn AE. Radiosurgery for benign intradural spinal tumors. *Neurosurgery.* 2008 Apr;62(4):887-95; discussion 895-6. doi: 10.1227/01.neu.0000318174.28461.fc. PubMed PMID: 18496194.

63: Petersen SA, Sturges BK, Dickinson PJ, Pollard RE, Kass PH, Kent M, Vernau KM, Lecouteur RA, Higgins RJ. Canine intraspinal meningiomas: imaging features, histopathologic classification, and long-term outcome in 34 dogs. *J Vet Intern Med.* 2008 Jul-Aug;22(4):946-53. doi: 10.1111/j.1939-1676.2008.0106.x. PubMed PMID: 18482277.

64: Banczerowski P, Vajda J, Veres R. [Removal of intraspinal space-occupying lesions through unilateral partial approach, the "hemi-semi laminectomy"]. *Ideggyogy Sz.* 2008 Mar 30;61(3-4):114-22. Hungarian. PubMed PMID: 18459452.

65: Menezes AH. Surgical approaches: postoperative care and complications "posterior-lateral-far lateral transcondylar approach to the ventral foramen magnum and upper cervical spinal canal". *Childs Nerv Syst.* 2008 Oct;24(10):1203-7. doi: 10.1007/s00381-008-0597-5. Epub 2008 Mar 26. Review. PubMed PMID: 18365213.

66: Barami K, Dagnow E. Endoscope-assisted posterior approach for the resection of ventral intradural spinal cord tumors: report of two cases. *Minim Invasive Neurosurg.* 2007 Dec;50(6):370-3. doi: 10.1055/s-2007-993203. PubMed PMID: 18210362.

67: Boutarbouch M, Arkha Y, Rifi L, Derraz S, El Ouahabi A, El Khamlichi A. Intradural cervical inflammatory pseudotumor mimicking epidural hematoma in a pregnant woman: case report and review of the literature. *Surg Neurol.* 2008 Mar;69(3):302-5. Epub 2007 Sep 4. Review. PubMed PMID: 17765955.

68: Vural M, Arslantaş A, Ciftçi E, Artan S, Atasoy MA. An unusual case of cervical clear-cell meningioma in pediatric age. *Childs Nerv Syst.* 2007 Feb;23(2):225-9. Epub 2006 Sep 22. PubMed PMID: 17021731.

69: Heran NS, Yong RL, Heran MS, Yip S, Fairholm D. Primary intradural extraarachnoid hodgkin lymphoma of the cervical spine. Case report. *J Neurosurg Spine.* 2006 Jul;5(1):61-4. PubMed PMID: 16850958.

70: Gelabert-González M, García-Allut A, Martínez-Rumbo R. [Spinal meningiomas]. *Neurocirugia (Astur).* 2006 Apr;17(2):125-31. Spanish. PubMed PMID: 16721479.

71: Bhandari A, Patel PR, Patel MP. Extranodal Rosai-Dorfman disease with multiple spinal lesions: a rare presentation. *Surg Neurol.* 2006 Mar;65(3):308-11. PubMed PMID: 16488261.

72: Epstein NE, Drexler S, Schneider J. Clear cell meningioma of the cauda equina in an adult: case report and literature review. *J Spinal Disord Tech.* 2005 Dec;18(6):539-43. Review. PubMed PMID: 16306847.

73: McDonnell JJ, Tidwell AS, Faissler D, Keating J. Magnetic resonance imaging features of cervical spinal cord meningiomas. *Vet Radiol Ultrasound.* 2005 Sep-Oct;46(5):368-74. PubMed PMID: 16250392.

74: Hwang SL, Liu CS, Su YF, Shen WJ, Chuo CY, Liu GC, Howng SL, Lee KS. Giant nondural-based

Last update:

2025/04/29 cervical\_spinal\_intradural\_meningioma [https://neurosurgerywiki.com/wiki/doku.php?id=cervical\\_spinal\\_intradural\\_meningioma](https://neurosurgerywiki.com/wiki/doku.php?id=cervical_spinal_intradural_meningioma)  
20:27

---

cauda equina meningioma with multiple cysts. *J Neurooncol.* 2005 Sep;74(2):173-7. PubMed PMID: 16132526.

75: Peker S, Cerçi A, Ozgen S, Isik N, Kalelioglu M, Pamir MN. Spinal meningiomas: evaluation of 41 patients. *J Neurosurg Sci.* 2005 Mar;49(1):7-11. PubMed PMID: 15990713.

76: Mirzai H. Tuberculoma of the cervical spinal canal mimicking en plaque meningioma. *J Spinal Disord Tech.* 2005 Apr;18(2):197-9. PubMed PMID: 15800442.

77: De Verdelhan O, Haegelen C, Carsin-Nicol B, Riffaud L, Amlashi SF, Brassier G, Carsin M, Morandi X. MR imaging features of spinal schwannomas and meningiomas. *J Neuroradiol.* 2005 Jan;32(1):42-9. PubMed PMID: 15798613.

78: Payer M. The anterior approach to anterior cervical meningiomas: review illustrated by a case. *Acta Neurochir (Wien).* 2005 May;147(5):555-60; discussion 560. Epub 2005 Mar 4. Review. PubMed PMID: 15739036.

79: Slin'ko EI, Al-Qashqish II. Intradural ventral and ventrolateral tumors of the spinal cord: surgical treatment and results. *Neurosurg Focus.* 2004 Jul 15;17(1):ECP2. Review. PubMed PMID: 15264778.

80: Pérez López-Fraile MI, Burriel-Roselló PA, Marín-Cárdenas MA, Pascual-Piazuelo M, Alfaro-Tomás J. [Coexistence of syringomyelia and extramedullary intradural meningioma]. *Rev Neurol.* 2004 Jul 16-31;39(2):142-5. Spanish. PubMed PMID: 15264165.

81: Mlaiki A, Ksira I, Ladib M, Guesmi H, Krifa H. [Intradural and cervical primary malignant melanoma. Case report and review of the literature]. *Neurochirurgie.* 2004 Mar;50(1):42-6. French. PubMed PMID: 15097919.

82: Porchet F, Sajadi A, Villemure JG. [Spinal tumors: clinical aspects, classification and surgical treatment]. *Praxis (Bern 1994).* 2003 Nov 5;92(45):1897-905. Review. German. PubMed PMID: 14639816.

83: Hamasaki T, Noda M, Kamei N, Yamamoto S, Ochi M, Yasunaga Y. Intradural extramedullary mass formation in spinal cord sarcoidosis: case report and literature review. *Spine (Phila Pa 1976).* 2003 Oct 15;28(20):E420-3. Review. PubMed PMID: 14560097.

84: Banczerowski P, Lipóth L, Vajda J, Veres R. Surgery of ventral intradural midline cervical spinal pathologies via anterior cervical approach: our experience. *Ideggyogy Sz.* 2003 Mar 20;56(3-4):115-8. PubMed PMID: 12712884.

85: Barbagallo GM, Lanzafame S, Nicol eG, Platania N, Albanese V. Primary C1-2, intradural, extramedullary meningeal sarcoma with glial fibrillary acidic protein-immunoreactive components: a spinal gliosarcoma? Case report and review of the literature. *J Neurosurg.* 2002 Mar;96(2 Suppl):230-5. Review. PubMed PMID: 12450287.

86: Hokari M, Hida K, Ishii N, Seki T, Iwasaki Y, Nakamura N. [Associated meningioma and neurofibroma at the same cervical level without clinical signs of neurofibromatosis: case report]. *No Shinkei Geka.* 2002 Sep;30(9):953-7. Review. Japanese. PubMed PMID: 12233093.

87: Ghosh S, Weiss M, Streeter O, Sinha U, Commins D, Chen TC. Drop metastasis from sinonasal undifferentiated carcinoma: clinical implications. *Spine (Phila Pa 1976).* 2001 Jul 1;26(13):1486-91. PubMed PMID: 11458156.

- 88: Kobata H, Kuroiwa T, Isono N, Nagasawa S, Ohta T, Tsutsumi A. Tanyctic ependymoma in association with neurofibromatosis type 2. *Clin Neuropathol.* 2001 May-Jun;20(3):93-100. PubMed PMID: 11430494.
- 89: Jallo GI, Kothbauer KF, Silvera VM, Epstein FJ. Intradural clear cell meningioma: diagnosis and management: report of two cases. *Neurosurgery.* 2001 Jan;48(1):218-21; discussion 221-2. Review. PubMed PMID: 11152351.
- 90: Amirjamshidi A, Mehrazin M, Abbassioun K. Meningiomas of the central nervous system occurring below the age of 17: report of 24 cases not associated with neurofibromatosis and review of literature. *Childs Nerv Syst.* 2000 Jul;16(7):406-16. Review. PubMed PMID: 10958549.
- 91: Amirjamshidi A, Abbassioun K. Radiation-induced tumors of the central nervous system occurring in childhood and adolescence. Four unusual lesions in three patients and a review of the literature. *Childs Nerv Syst.* 2000 Jul;16(7):390-7. Review. PubMed PMID: 10958546.
- 92: Yeomans SM. SHORT PAPER - extensive spinal meningioma in a young dog. *J Comp Pathol.* 2000 May;122(4):303-6. PubMed PMID: 10805984.
- 93: Asperio RM, Marzola P, Zibellini E, Villa W, Sbarbati A, Osculati F, Addis F. Use of magnetic resonance imaging for diagnosis of a spinal tumor in a cat. *Vet Radiol Ultrasound.* 1999 May-Jun;40(3):267-70. PubMed PMID: 10519306.
- 94: Jho HD, Ha HG. Anterolateral approach for cervical spinal cord tumors via an anterior microforaminotomy: technical note. *Minim Invasive Neurosurg.* 1999 Mar;42(1):1-5. PubMed PMID: 10228931.
- 95: Yoshiura T, Shrier DA, Pilcher WH, Rubio A. Cervical spinal meningioma with unusual MR contrast enhancement. *AJNR Am J Neuroradiol.* 1998 Jun-Jul;19(6):1040-2. PubMed PMID: 9672008.
- 96: Roux FX, Nataf F, Pinaudeau M, Borne G, Devaux B, Meder JF. Intradural meningiomas: review of 54 cases with discussion of poor prognosis factors and modern therapeutic management. *Surg Neurol.* 1996 Nov;46(5):458-63; discussion 463-4. Review. PubMed PMID: 8874546.
- 97: Sevick RJ. Cervical spine tumors. *Neuroimaging Clin N Am.* 1995 Aug;5(3):385-400. Review. PubMed PMID: 7551576.
- 98: Crispino M, Gasparotti R, Pavia M, Bonetti M, Pittiani F, Prandini F, Chiesa A. [Magnetic resonance myelography. Preliminary experience]. *Radiol Med.* 1995 Jan-Feb;89(1-2):42-8. Italian. PubMed PMID: 7716310.
- 99: Komisar A, Blaugrund SM, Camins M, Mangiardi J. Combined approach for excision of cervical nerve tumors with dural extension. *Head Neck.* 1993 Mar-Apr;15(2):153-7. PubMed PMID: 8440614.
- 100: Iwai Y, Sekhar LN, Goel A, Cass S. Vein graft replacement of the distal vertebral artery. *Acta Neurochir (Wien).* 1993;120(1-2):81-7. PubMed PMID: 8434522.
- 101: Vallée B, Besson G, Houidi K, Person H, Dam Hieu P, Rodriguez V, Mériot P, Sénécail B. [Juxta- or trans-condylar lateral extension of the posterior suboccipital approach. Anatomical study, surgical aspects]. *Neurochirurgie.* 1993;39(6):348-59. French. PubMed PMID: 7936045.
- 102: Weil SM, Gewirtz RJ, Tew JM Jr. Concurrent intradural and extradural meningiomas of the cervical spine. *Neurosurgery.* 1990 Oct;27(4):629-31. PubMed PMID: 2234369.

- 103: Sen CN, Sekhar LN. An extreme lateral approach to intradural lesions of the cervical spine and foramen magnum. *Neurosurgery*. 1990 Aug;27(2):197-204. PubMed PMID: 2385336.
- 104: Wada H, Yamanouchi H, Kobayashi S, Toyokura Y. [Intradural extramedullary tumor of lower spinal cord in a 89-year-old man with cervical spondylosis and lumbar spondylolisthesis]. *Rinsho Shinkeigaku*. 1990 Aug;30(8):869-72. Japanese. PubMed PMID: 2253423.
- 105: Chiou SM, Eggert HR, Laborde G, Seeger W. Microsurgical unilateral approaches for spinal tumour surgery: eight years' experience in 256 primary operated patients. *Acta Neurochir (Wien)*. 1989;100(3-4):127-33. PubMed PMID: 2589118.
- 106: Fingeroth JM, Prata RG, Patnaik AK. Spinal meningiomas in dogs: 13 cases (1972-1987). *J Am Vet Med Assoc*. 1987 Sep 15;191(6):720-6. PubMed PMID: 3679964.
- 107: Namer IJ, Pamir MN, Benli K, Saglam S, Erbengi A. Spinal meningiomas. *Neurochirurgia (Stuttg)*. 1987 Jan;30(1):11-5. PubMed PMID: 3561635.
- 108: Rossini PM, Gigli GL, Zarola F, Marciani MG, Caramia M, Bernardi G. On the spinal pathways mediating scalp-SEPs to upper and lower limb nerve stimulation: case report and discussion. *Acta Neurol Scand*. 1986 Sep;74(3):230-4. PubMed PMID: 3788487.
- 109: Levy WJ, Latchaw J, Hahn JF, Sawhny B, Bay J, Dohn DF. Spinal neurofibromas: a report of 66 cases and a comparison with meningiomas. *Neurosurgery*. 1986 Mar;18(3):331-4. PubMed PMID: 3084994.
- 110: Lenelle J, Born JD, Collignon J. [Ablation by the anterior transcorporeal approach of an ante-spinal cord cervical meningioma. Apropos of a case]. *Neurochirurgie*. 1986;32(3):262-5. French. PubMed PMID: 3762841.
- 111: Scotti G, Scialfa G, Colombo N, Landoni L. MR imaging of intradural extramedullary tumors of the cervical spine. *J Comput Assist Tomogr*. 1985 Nov-Dec;9(6):1037-41. PubMed PMID: 4056133.
- 112: Giroux JC, Nohra C. Anterior approach for removal of a cervical intradural tumor: case report and technical note. *Neurosurgery*. 1978 Mar-Apr;2(2):128-30. PubMed PMID: 366446.
- <sup>1)</sup>  
Aboul-Enein HA, Khidr WM, Abdeen KM, Madawi AA. Surgical management of ventrally based lower cervical (subaxial) meningiomas through the lateral approach: Report on 16 cases. *Clin Neurol Neurosurg*. 2015 Dec;139:152-8. doi: 10.1016/j.clineuro.2015.10.008. Epub 2015 Oct 13. PubMed PMID: 26476699.
- <sup>2)</sup>  
Fraioli MF, Marciani MG, Umana GE, Fraioli B. Anterior Microsurgical Approach to Ventral Lower Cervical Spine Meningiomas: Indications, Surgical Technique and Long Term Outcome. *Technol Cancer Res Treat*. 2015 Aug;14(4):505-10. doi: 10.1177/1533034614500418. PubMed PMID: 26269613.
- <sup>3)</sup>  
Ueno H, Tsutsumi S, Hashizume A, Sugiyama N, Ishii H. Atypical meningioma originating from the spinal accessory nerve. *Surg Neurol Int*. 2022 Dec 31;13:598. doi: 10.25259/SNI\_1085\_2022. PMID: 36761262; PMCID: PMC9899469.
- <sup>4)</sup>  
Matsuda S, Kajihara Y, Abiko M, Mitsuhashi T, Takeda M, Karlowee V, Yamaguchi S, Amatya VJ, Kurisu K. Concurrent Schwannoma and Meningioma Arising in the Same Spinal Level: A Report of Two Cases.

NMC Case Rep J. 2018 Sep 13;5(4):105-109. doi: 10.2176/nmccrj.cr.2017-0207. eCollection 2018 Oct. PubMed PMID: 30327752; PubMed Central PMCID: PMC6187259.

5)

Sorenson TJ, Lanzino G, Rangel Castilla L. Surgical Resection of Cervical Meningioma: 3-Dimensional Operative Video. Oper Neurosurg (Hagerstown). 2018 Sep 24. doi: 10.1093/ons/opy292. [Epub ahead of print] PubMed PMID: 30252111.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

[https://neurosurgerywiki.com/wiki/doku.php?id=cervical\\_spinal\\_intradural\\_meningioma](https://neurosurgerywiki.com/wiki/doku.php?id=cervical_spinal_intradural_meningioma)

Last update: **2025/04/29 20:27**

