Intradural extramedullary spinal tumor case series

Narayan et al. reviewed the surgical outcomes of 35 patients who underwent excision of intradural extramedullary tumors. Patient demographics, severity, and duration of symptoms, and tumor characteristics (anatomical and pathological) in all operated spinal IDEM tumors were collected. The neurological findings obtained during the preoperative stage and the postoperative follow-up were evaluated according to the Frankel and Nurick grading. The back pain was assessed with help of the Denis pain scale (DPS). Results The histopathological outcomes of the study were as follows: six patients of neurofibroma, 12 cases of schwannoma, nine cases of meningiomas, three cases of ependymoma, one case of a dorsal neurenteric cyst, two cases of an epidermoid cyst, one case of cauda equina paraganglioma, and one case of filum terminale dermoid cyst. Paresthesia/numbness were the commonest symptoms (88.6%), weakness of limbs in (80%), sphincter dysfunction in 15 patients (42.9%), and paraplegia was seen in three patients (8.57%). The complications encountered were - one case each of cerebrospinal fluid (CSF) leak, surgical site infection, and pseudomeningocele. The percentage of spinal canal occupied ranged from 71-94%. The mean percentage of the spinal canal occupied by the tumor was 81.8%. In our series, 77.14% of patients (p<0.0001) had good functional outcomes as per improvement in Frankel score. The DPS and Nurick score mean values showed a significant decrease over the follow-up duration as compared to preoperative mean values. Significant functional improvement was noted at the one-week, onemonth, and one-year follow-up, with a p-value of <0.0001. The IDEM tumors are usually benign and are readily detected by contrast-enhanced MRI scans. These have excellent surgical outcomes with some exceptions. Greater canal occupancy and a longer duration of symptoms are usually seen to correspond with suboptimal functional outcomes¹⁾.

2016

A retrospective study of intradural extramedullary tumors extending up to two vertebral levels was studied. Pre- and postoperative clinical status, magnetic resonance imaging was done in all patients. The Destandau technique was used, and resection of ipsilateral lamina, medial part of the facet joint, base of the spinous process, and undercutting of the opposite lamina was performed. Dura repair was done using an endoscopic technique. Fibrin glue was used to reinforce repair in the later part of the study. Results The sagittal and axial diameter of tumor ranged from 21 to 41 mm and 12 to 18 mm, respectively. There were four cervical, two cervicothoracic, five thoracic, three thoracolumbar, and four lumbar tumors, respectively. All 18 patients improved after total excision of tumor. Average duration of surgery and blood loss was 140 minutes and 60 mL, respectively. Postoperative stay and follow-up ranged from 3 to 7 days and 9 to 24 months, respectively. Conclusion Although the study is limited by the small number of patients with a short follow-up and is a technically demanding procedure, endoscopic management of intradural extramedullary tumors was an effective and safe alternative technique to microsurgery in such patients².

2015

From 2001 to 2012, 100 patients underwent intradural-extramedullary spinal tumor resection with

IONM. Preoperative and postoperative clinical evaluations were completed retrospectively, using a modified McCormick grading scale and correlated with IONM monitorability and dynamics. IONM consisted of transcranial motor evoked potentials (tcMEP), spinal (D wave) and muscle generators, somatosensory evoked potentials (SSEP), and electromyography (EMG). Both short-term and long-term clinical evaluations were performed. Patient demographics, tumor type, span, location, and morphologic complexity were analyzed.

Surgeries were performed for resection of schwannomas (33 %), meningiomas (22 %), ependymomas (12 %), and other pathologies (20 %); pathology was unknown in 13 % of patients. Tumor locations were cervical in 21 %, thoracic in 46 %, thoracolumbar in 7 %, lumbar 20 %, and not specified in 6 %. Tumors spanned an average of 2.2 spinal levels. Monitorability was 97 and 67 % with tcMEP and SSEP modalities respectively. D waves were monitorable in 73 % of attempts. Intraoperative tcMEP changes were reported in 29 cases with 14 resolved intraoperatively, There were one false-negative outcome and five true-positive outcomes. For SSEP, 13 changes were noted and three resolved; there were three false-negative results and one true-positive result. For D wave monitoring there were two intraoperative changes with none resolved leading to one false negative and one true positive result. With a multimodality approach incorporating any change in evoked potential, IONM demonstrated sensitivity of 0.82, specificity of 0.95, positive predictive value of 0.82, and a negative predictive value of 0.95.

IONM is feasible and useful in the context of intradural-extramedullary spinal cord surgery for identifying iatrogenic injury to the spinal cord $^{\scriptscriptstyle 3)}$

2012

A retrospective study of 29 patients with 30 intradural extramedullary spinal tumors approached through unilateral laminectomy -hemilaminectomy. Epidemiological data, location and histology of the lesions and radiological and clinical evolution of the patients were recorded. The Nurick scale was used in the preoperative and postoperative functional assessment conducted during the last follow-up consultation. The mean age of patients was 60 years and there was a predominance of the female gender. The mean time elapsed from the onset of symptoms to diagnosis was 11.6 months. Sensitive and motor deficits were the most common symptoms. Meningioma was the most frequent lesion, followed by neurinoma and ependymoma. The most commonly affected level was the dorsal, followed by the lumbar and cervical.

Total resection was performed in all cases except for one cervical neurinoma with extraforaminal extension. Three patients presented postoperative complications -cerebrospinal fluid fistula, asymptomatic pseudomeningocele and postoperative functional worsening- which were resolved with conservative treatment. The mean time of clinical and radiological follow-up was 33.4 months, with no tumoural recurrences being observed except for two cases of meningiomas. After the follow-up period, patients without functional disorders remained stable and all patients with functional disorders presented a clinical improvement of at least one point in the Nurick scale.

They consider that the microsurgical unilateral approach is a safe and effective technique for the resection of most extramedullary, intradural spinal tumours ⁴⁾.

1)

Narayan S, Rege SV, Gupta R. Clinicopathological Study of Intradural Extramedullary Spinal Tumors and Its Correlation With Functional Outcome. Cureus. 2021 Jun 18;13(6):e15733. doi:

10.7759/cureus.15733. PMID: 34285844; PMCID: PMC8286542.

Parihar VS, Yadav N, Yadav YR, Ratre S, Bajaj J, Kher Y. Endoscopic Management of Spinal Intradural Extramedullary Tumors. J Neurol Surg A Cent Eur Neurosurg. 2016 Dec 12. [Epub ahead of print] PubMed PMID: 27951615.

Korn A, Halevi D, Lidar Z, Biron T, Ekstein P, Constantini S. Intraoperative neurophysiological monitoring during resection of intradural extramedullary spinal cord tumors: experience with 100 cases. Acta Neurochir (Wien). 2015 May;157(5):819-30. doi: 10.1007/s00701-014-2307-2. Epub 2014 Dec 18. PubMed PMID: 25514869.

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.

From: https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki**

Permanent link: https://neurosurgerywiki.com/wiki/doku.php?id=intradural_extramedullary_spinal_tumor_case_series

Last update: 2024/06/07 02:58

