Spinal cord ependymoma differential diagnosis

- Intramedullary Spinal Cord Tumors and Tumor-Like Lesions
- Strong nuclear expression of HOXB13 is a reliable surrogate marker for DNA methylome profiling to distinguish myxopapillary ependymoma from spinal ependymoma
- Hybrid nerve sheath tumor of the spinal canal and neurofibromatosis-2, where the twain shall meet-a case report and review of literature
- Intramedullary Schwannoma in the Cervical Region: A Case Report
- MRI findings in six dogs with ependymoma of the brain and spinal cord
- Primary extraskeletal intradural Ewing sarcoma with acute hemorrhage: a case report and review of the literature
- Imaging of Adult Malignant Soft Tissue Tumors of the Spinal Canal: A Guide for Spine Surgeons
- Sequencing of cerebrospinal fluid cell-free DNA facilitated early differential diagnosis of intramedullary spinal cord tumors

With the increasing frequency of neuroimaging, incidental intramedullary cavities are diagnosed more frequently. Ng et al. presented a case of asymptomatic incidental intramedullary cervical cavity diagnosed as an idiopathic syringomyelia as initial MRI showed an isolated cystic image without contrasted component. The patient had no subsequent MRI follow-up but eventually showed symptoms 8 years later. By this stage of the disease, the MRI appearance had changed, showing a solid and enhanced component. The patient underwent surgical resection and histopathology concluded a papillary ependymoma (grade 2). This case illustrates how asymptomatic intramedullary cavities may hide an underlying tumoral process and why these cavities should not be considered as idiopathic syringomyelia by default, except after prolonged MRI follow-up [1)].

Spinal cord astrocytoma

Spinal cord hemangioblastoma

Spinal cord ependymoma is more common in adults.

Scoliosis and bony remodelling more common

Central location in spinal canal

Well-circumscribed

Haemorrhage is common

May rarely present as a subarachnoid haemorrhage

Hemosiderin staining especially at the superior and inferior margins (so-called hemosiderin capping) is common focal, intense homogeneous contrast enhancement more frequent and more prominent cysts (intratumoral and polar).

Ganglioneuroma.

In patients with ependymoma, older age and a larger solid component were more often observed than in astrocytoma. Central location, presence of enhancement, diffuse enhancement, syringohydromyelia, haemorrhage, and cap sign were more frequently observed in ependymoma. However, multivariate analysis revealed that syringohydromyelia was the only variable able to independently differentiate ependymoma from astrocytoma, with an odds ratio of 62.9 (95% CI: 4.38-903.22; p = 0.002).

Among the various findings, the presence of syringohydromyelia is the main factor distinguishing ependymoma from astrocytoma [2].

1)
Ng S, Aghakhani N, Bauchet L. Clinical image of a spinal ependymoma discovered 8 years after initial misdiagnosis as an idiopathic syringomyelia. World Neurosurg. 2020 Oct 3:S1878-8750(20)32181-1. doi: 10.1016/j.wneu.2020.09.162. Epub ahead of print. PMID: 33022432.
2)
Kim DH, Kim JH, Choi SH, Sohn CH, Yun TJ, Kim CH, Chang KH. Differentiation between intramedullary spinal ependymoma and astrocytoma: comparative MRI analysis. Clin Radiol. 2014 Jan;69(1):29-35. doi: 10.1016/j.crad.2013.07.017. Epub 2013 Sep 10. PubMed PMID: 24034546.