Mystery Case: Tancytic ependymoma of the conus medullaris

A rare cause of low back pain

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Figure 1 Images of the lumbar spine in (A) sagittal and (B) axial T2-weighted MRI, and (C) sagittal and (D) axial T1-weighted MRI with gadolinium

A solid and cystic mass is seen in the region of the conus medullaris. Postgadolinium T1-weighted images show intense homogenous enhancement of the solid component of the lesion.

A 25-year-old woman presented to the emergency department with low back pain radiating to the anterior aspect of both thighs, progressively worsening over 6 months. Her neurologic examination was unremarkable. MRI of the lumbar spine revealed an intradural extramedullary lesion located in the region of the conus medullaris (figure 1, A–D). The patient underwent bilateral T12 and L1 laminectomies and partial bilateral T11 laminectomy for resection of the intradural extramedullary tumor arising from the filum terminale. Her postoperative period was uneventful. The tumor's location and imaging characteristics were suggestive of a myxopapillary ependymoma. However, histopathologic workup ultimately rendered the diagnosis of tancytic ependymoma, a rare occurrence at this site (figure 2, A–D).^{1,2} This must be differentiated from schwannoma and astrocytoma due to therapeutic and prognostic implications.

AUTHOR CONTRIBUTIONS

Dr. Furlan was responsible for design and conceptualization of the study, analysis and interpretation of the data, draft and revisions of the manuscript. Dr. Chui was responsible for design and conceptualization of the study, analysis and interpretation of the data, draft and revisions of the manuscript. Dr. Croul was responsible for design and conceptualization of the study, analysis and interpretation of the data, draft and revisions of the manuscript. Dr. Paul Kongkham was responsible for design and conceptualization of the study, analysis of the data, draft and revisions of the manuscript.

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From the Department of Medicine, Division of Neurology (J.C.F.), the Department of Laboratory Medicine and Pathobiology (M.H.C., S.E.C.), and the Department of Surgery, Division of Neurosurgery (P.K.), University of Toronto; the Department of Genetics and Development (J.C.F.), Toronto Western Research Institute; the Lyndhurst Centre (J.C.F.), Toronto Rehabilitation Institute; and the Department of Laboratory Medicine and Pathobiology, Division of Neuropathology (S.E.C.), Toronto General Hospital, University Health Network, Canada.

Figure 2 Macroscopic intraoperative view of the tumor (A) and histopathology of the lesion (B) stained with hematoxylin & eosin (magnification $\times 100$), and immunostained for (C) epithelial membrane antigen ($\times 200$) and (D) glial fibrillary acidic protein ($\times 200$)

Of note, S100 immunostaining revealed weak and patchy positivity, whereas the tumor was strongly and diffusely positive for Vimentin (data not shown).

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MYSTERY CASE RESPONSES

The Mystery Case series was initiated by the *Neurology*® Resident & Fellow Section to develop the clinical reasoning skills of trainees. Residency programs, medical student preceptors, and individuals were invited to use this Mystery Case as an educational tool. Responses were solicited through a group e-mail sent to the American Academy of Neurology Consortium of Neurology Residents and Fellows and through social media.

All the answers that we received came through social media, from individuals rather than groups. The majority of the respondents correctly identified the presence of an intradural extramedullary mass located in the region of the conus medullaris. In their answers, Dr. Felipe Borlot and Dr. Jacopo Fantini suggested the specific diagnosis of a myxopapillary ependymoma based on the imaging findings and the high prevalence of this type of tumor at this location. Other differential diagnoses that were considered included schwannoma, paragangliomas, and hemangioblastoma.

As the authors note in their article, the histopathologic evaluation ultimately gave the diagnosis of a tanyctic ependymoma, which is a rare etiology for spinal lesions at this site.

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