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Cervicomedullary Purely Solid, Giant Pilocytic Astrocytoma

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Abstract

Pilocytic astrocytomas are well-circumscribed, predominantly cystic mass lesions that have a discrete mural nodule. Giant, solid pilocytic astrocytoma is uncommon. Its characteristic imaging features are described.

Keywords

- pilocytic astrocytoma
- purely solid
- giant
- cervicomedullary
- children

A 16-year-old male patient presented with a history of neck pain for past 3 years, and gradually progressive spastic weakness of all four limbs for last 6 months. There was no history of trauma, fever, loss of consciousness, seizure, or breathlessness. On examination, the patient was conscious and oriented. On motor examination, bulk was normal, tone slightly increased in all four limbs, power in bilateral upper and lower limbs four-fifth at all joints. Deep tendon reflexes were exaggerated in all four limbs and the planter was up going. On sensory examination, there were 75% sensation present for pain, touch, and temperature in all four limbs. Cerebellar signs were positive on the right side of the body. Bladder and bowel were not involved.

The patient was investigated with contrast magnetic resonance imaging MRI of the brain. On T1WI, there was a hypointense mass lesion present in the cervicomedullary region. On T2WI, the lesion was hyperintense. There were no surrounding cysts or edema. On contrast imaging, tumor showed homogenous contrast enhancement (►**Fig. 1A-E**). The size of the mass lesion was 4.4 × 3.5 cm. The patient was managed with surgery. Intraoperatively, the lesion was well marginated, intramedullary tumor reaching up to the pial surface. Slowly, intra tumoral decompression was done with the help of CUSA and the tumor was excised completely. Grossly, the tumor was pinkish in color, soft to firm in consistency, nonsuckable, and had mild vascularity. The postoperative period was uneventful.

Histopathological examination of the tissue showed tumor comprising compact fibrillary and loose microcystic areas (►**Fig. 2A**) with scattered Rosenthal fibers. The mitotic activity was inconspicuous with the absence of necrosis. Immunohistochemistry for GFAP was positive (►**Fig. 2B**). K_i 67 index was low. Features favored the diagnosis of pilocytic astrocytoma.

Cervicomedullary tumors are usually slow growing, low-grade astrocytomas. Pilocytic astrocytomas are the most common lesions of these low-grade astrocytomas.[1,2] The two-third of these tumors are found in less than 18 years of age group.[3] Radiologically, pilocytic astrocytomas are typically well-circumscribed, predominantly cystic masses, and have a

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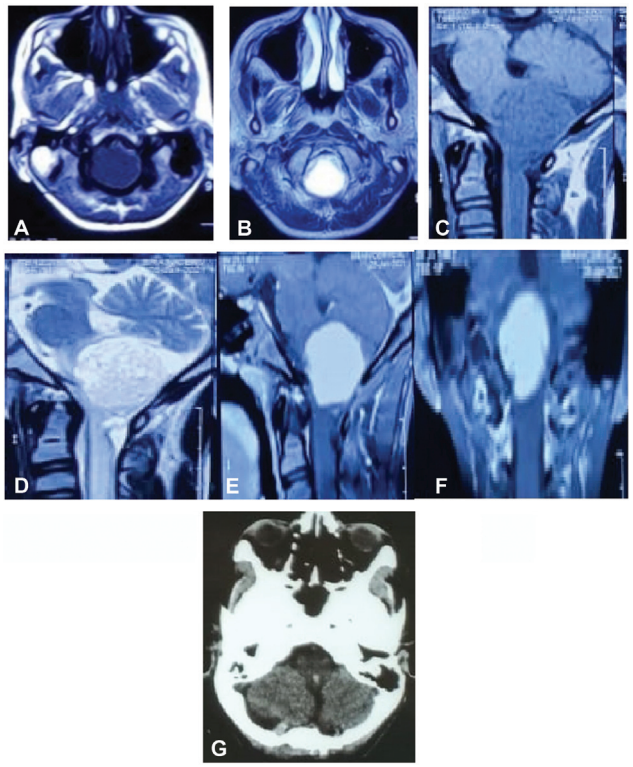

Fig. 1 (**A**) MRI posterior fossa T1W axial image showing a well-circumscribed hypointense lesion in the cervicomedullary region. (**B**) MRI posterior fossa T2W axial image showing a well-circumscribed hyperintense lesion in the cervicomedullary region. (**C**) MRI posterior fossa and cervical region T1W sagittal image showing a hypointense lesion in the cervicomedullary region. (**D**) MRI posterior fossa and cervical region T2W sagittal image showing a well-circumscribed, heterogenous, hyperintense lesion in the cervicomedullary region. There is syringomyelia in the cervical region of the cord. (**E&F**) Contrast MRI posterior fossa and cervical region sagittal and coronal image showing homogenous contrast-enhancing lesion in the cervicomedullary region. (**G**) Non-contrast CT posterior fossa showing postoperative bony defect with complete excision of the tumor.

discrete mural nodule.[4] Purely solid pilocytic astrocytomas are uncommon and giant, solid pilocytic astrocytomas are further uncommon.

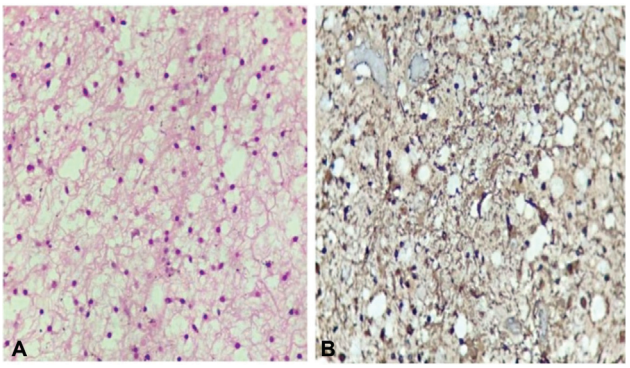

Fig. 2 (**A**) Section showing a loose microcystic area with cells having round to oval nuclei (H/E 400 ×). (**B**) Tumor cells showing strong and diffuse positivity for GFAP (400 ×).

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Conflict of Interest
None declared.

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