Teaching *NeuroImage*: Hemorrhagic ependymoma in the elderly

A rare cause of headache and gait imbalance

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A 73-year-old man presented with headaches, vomiting, and gait imbalance. Neurologic examination demonstrated bilateral papilledema and positive Romberg sign. Neuroimaging showed a posterior fossa lesion with calcifications and intratumoral hemorrhage associated with obstructive hydrocephalus (figure 1, A through D). Gross total resection was performed (figure 2, A and B). Histologic examination documented ependymoma (figure 2, C through E).

Ependymoma typically affects children and rarely occurs in elderly patients.¹ It is most frequently located in the posterior fossa and presents with cerebellar compression and intracranial hypertension. On MRI it appears as a T1-hypointense, T2-hyperintense, homogeneous contrast-enhancing

mass that may fill and expand the fourth ventricle; heterogeneous enhancement due to calcifications and cystic components may be seen.² Intratumoral hemorrhage has been reported and rarely causes an acute presentation.³ Hemorrhagic ependymoma should be considered in the differential diagnosis of hemorrhagic posterior fossa lesions in adults.

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Figure 1 Brain neuroimaging

Nonenhanced CT (A), MRI with axial T2-WI (B), sagittal non-enhanced (C) and enhanced (D) T1-WI, showing a heterogeneous, solid-cystic, hemorrhagic and calcific mass in the cisterna magna and in the inferior portion of the fourth ventricle. A blood-fluid level is visible in the cystic portion (arrow) and contrast enhancement is evident in the solid intraventricular portion. The mass obstructed the fourth ventricle with resulting hydrocephalus.

Figure 2 Surgical and histologic images

(A, B) Intraoperative view confirming the hemorrhagic component of the lesion (A) and documenting the floor of the fourth ventricle free of disease at the end of tumor removal (B). (C–E) Histologic examination showed monomorphic cells with regular round nucleus and dispersed chromatin; tumor cells of the perivascular area were arranged radially around the vessels, forming perivascular pseudorosettes, with prominent perivascular immunoreaction for glial fibrillary acid protein (D) and epithelial membrane antigen (E). Mitoses and necrosis were absent. Diagnosis: WHO grade II ependymoma.

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