Coexistent subependymoma and psammomatous meningioma

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A 74-year-old female with a past medical history of hypertension, congestive heart failure, atrial fibrillation, and type II diabetes mellitus presented most recently with somnolence and nonresponsiveness. She had a known history of a multilobular intraventricular mass within the frontal horn and anterior body of the right lateral ventricle that was discovered on a magnetic resonance imaging (MRI) study done six and a half years earlier for complaints at that time of intermittent head pain. The intraventricular lesion was thought to represent a possible central neurocytoma. Also noted at that time were multiple extra-axial masses, presumed to be meningiomas, located at the planum sphenoidale, left clinoid, bilateral falx, and right lateral convexity. Given the patient’s age, medical risk factors, and lack of neurological symptoms and findings directly attributable to the brain masses, it was decided that surgical intervention was not warranted and close follow-up with imaging studies would be done. At the time of her most recent presentation, computed tomography (CT) showed an intraparenchymal hemorrhage in the midline region of the corpus callosum with moderate hydrocephalus and extension of the bleed into the ventricle, proximal to the intraventricular tumor. Surgery was undertaken to remove the blood clot, the intraventricular neoplasm, and a 0.5 cm calcified mass overlying the right frontal gyrus.

Figure 1. Psammomatous meningioma arising over the right frontal gyrus (left) and subependymoma situated within the lateral ventricle (right) (hematoxylin and eosin, original magnifications for both images 200X).
Histologic examination of the intraventricular mass showed a neoplasm marked by a clustering of tumor cell nuclei marked by mild nuclear pleomorphism (Figure 1). Cells are arranged against a microcystic fibrillary background. Perivascular pseudorosettes and true ependymal rosettes were not seen. Mitotic figures, vascular proliferative changes, and necrosis were not present. The morphologic findings were consistent with a subependymoma, World Health Organization (WHO) grade I. Additionally, a hematoma was evacuated with the subependymoma. The calcified tumor overlying the right frontal gyrus was marked by small clusters of meningothelial cells and numerous psammoma bodies, consistent with a psammomatous meningioma, WHO grade I (Figure 1).

Multiple primary brain tumors of different types occurring in the same patient are very rare outside the setting of neurocutaneous disorders or prior history of radiation. One recent 2018 review of the literature discovered 65 such cases, in addition to reporting six of their own [1]. As in the current case, the majority of these include a meningioma as one of the two tumors [1], usually in combination with an astrocytoma or pituitary adenoma. None of the cases reported a meningioma with subependymoma. The current patient had no history of prior radiation or neurocutaneous disorder. Only one case of subependymoma associated with another tumor type was found in the literature; D’Agostino et al. reported a subependymoma and dysembryoplastic neuroepithelial tumor arising in a 16-year-old male who presented with headaches and obstructive hydrocephalus [2]. Composite tumors with admixtures of subependymoma and ependymoma or tanycytic ependymoma have been well documented, albeit rarely [3,4].

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There is no competing interest.

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References