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Cerebellar medulloblastoma in the elderly

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Abstract Although medulloblastoma is the most common central nervous system malignancy in children, cases are much less common in adults. Moreover, this tumor is exceedingly rare in patients older than 65 years. Analysis of previous case reports reveals that medulloblastoma in the elderly is more commonly seen in males in a lateral location; histologically, medulloblastomas in aged individuals usually belong to the classic subtype. During intraoperative consultation, the pathologist should consider medulloblastoma in the differential diagnosis of a cerebellar mass in the elderly because cytologic features may overlap with metastatic small cell carcinoma or lymphoma. We present a case of medulloblastoma in a 66-year-old man and review the literature on the subject.

Keywords: Medulloblastoma; Elderly; Cerebellum; Brain neoplasms

1. Introduction

Medulloblastoma may account for as much as 25% of central nervous system (CNS) tumors in the pediatric population, making it the most common CNS malignancy in children. However, this entity comprises only 0.4% to 1% of CNS neoplasms in adults [1]. When these tumors do occur in adults, most of those affected (approximately 80%) are in the 21- to 40-year adult age range, and incidence in the elderly (>65 years old) is exceedingly rare [2]. As in the pediatric cohort for medulloblastoma, the adult population shows a male predominance, and the tumor is more commonly of the classic histologic subtype. A feature associated with increasing age is lateral vs midline location. We present a case of medulloblastoma in a 66-year-old man and a review of the literature.

2. Case report

A 66-year-old man presented to his primary care physician with a 2-week history of occipital headache and poor balance. A computed tomography scan of the brain revealed a cerebellar mass, and the patient was referred to our institution for further evaluation. Further questioning in the emergency department revealed additional symptoms, including nausea, vomiting, blurred vision, neck pain, and right ear pain without changes in hearing. Past medical history was significant for hypertension treated with hydrochlorothiazide and aspirin. On physical examination, no neurologic abnormalities were detected. However, a slight dysmetria on the right and nystagmus were noted in the following days.

Magnetic resonance imaging of the brain performed with and without contrast showed a heterogeneous cystic and solid mass measuring approximately 4.5 × 3.8 × 3.0 cm involving the majority of the right cerebellum. Also noted were surrounding edema, mass effect, and effacement of the fourth ventricle without significant hydrocephalus. The radiologic differential diagnosis consisted of inflammatory or metastatic disease, with less likely possibilities including hemangioblastoma and lymphoma. A metastatic workup (computed tomography of the chest, abdomen, and pelvis) was negative for a primary malignancy site.

On the fourth day of hospitalization, the patient underwent a right suboccipital craniectomy. A cystic nodule was encountered at a depth of less than 1 cm in the cerebellum. The excision was subtotal because the plane between the tumor and cerebellum was poorly demarcated. Three

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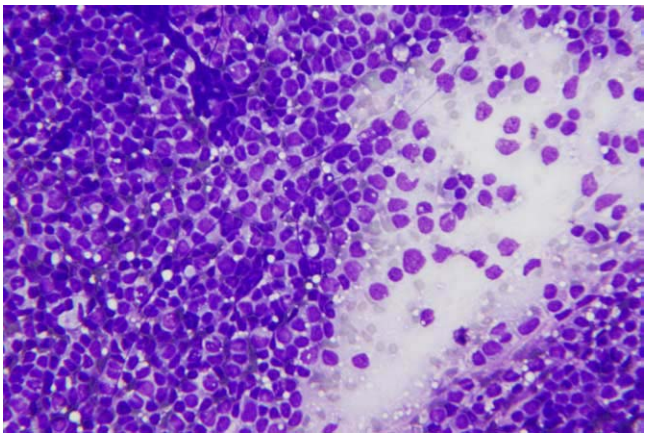

Fig. 1. Low-power view of the cytology shows a highly cellular preparation with dyscohesion apparent at the edge (Romanowsky-based stain).

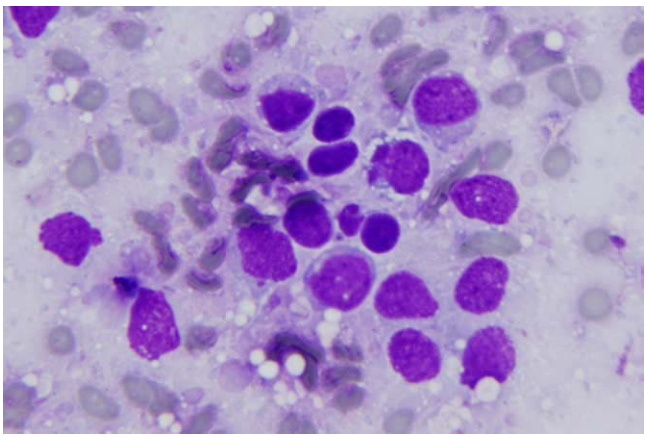

Fig. 2. The nuclei are round to ovoid, and many are dissociated from their cytoplasm. Rarely, a well-defined cellular border is seen (Romanowsky-based stain).

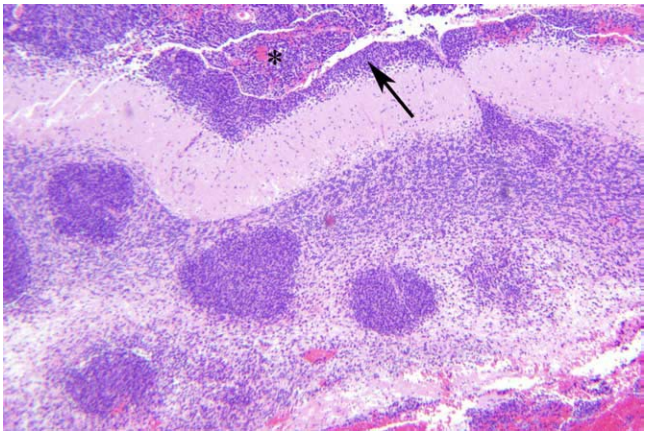

Fig. 3. Solid sheets and aggregates of tumor growth are present, as well as subpial (arrow) and subarachnoid (asterisk) spread.

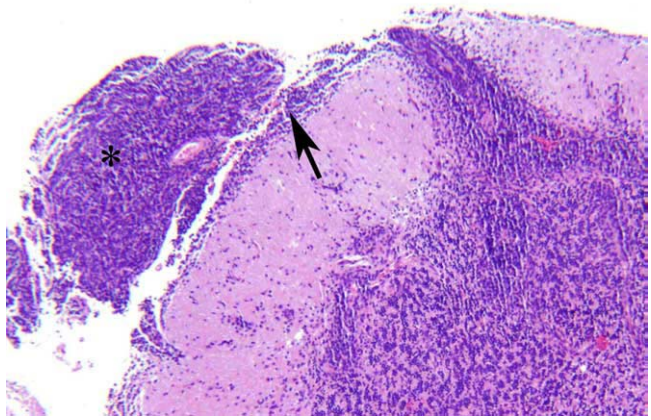

Fig. 4. Malignant cells track blood vessels toward the subpial zone (arrow) and the subarachnoid space (*).

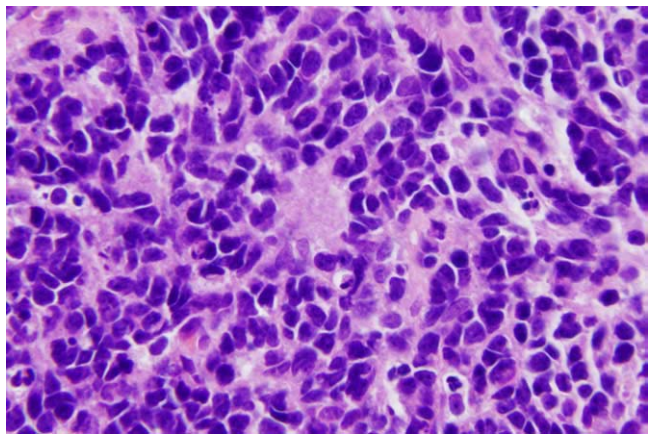

Fig. 5. An occasional Homer Wright rosette is visible.

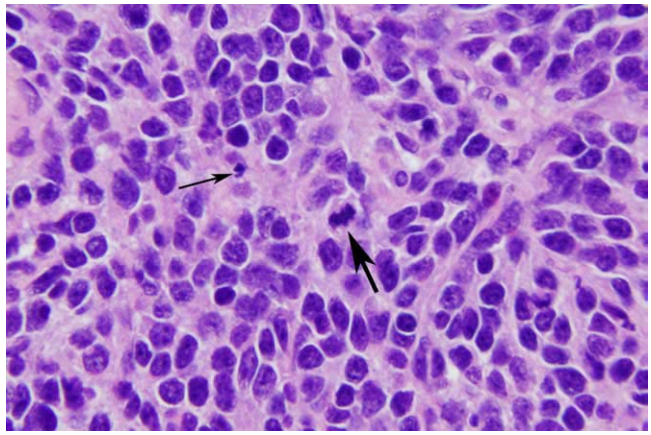

Fig. 6. Mitoses (thick arrow) and apoptotic bodies (thin arrow) are occasionally found.