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Images

Dural based tumor causing cognitive decline: Answer

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1. Answer

C. Primary dural based lymphomas

2. Discussion

Brain MRI (Fig. 1C-F in Question) showed two gadolinium-enhanced parasagittal lesions, one of them with significant surrounding brain edema. None of the differential diagnosis could be excluded based on imaging.

Multiple parasagittal meningiomas was considered the probable preoperative diagnosis. A gross total removal of a bilateral frontal parasagittal lesion was performed following craniotomy. The tumor was found to be soft, grey color, moderate vascular and firmly attached to the brain cortex and underlying white matter without any clean plane. The anterior part of the superior sagittal sinus was completely occluded and consequently was ligated and resected, including the tumor-involved falx. The left parietal parasagittal lesion was considered for follow-up and further treatment. There were no surgical or early postoperative complications. Patient was discharge six days after the surgery without any new neurological deficit.

The pathology was a low grade B cell lymphoproliferative disease. The immunohistochemical profile was equivocal, and thus exact subtyping was precluded. The differential diagnosis was between marginal zone lymphoma (MZL), small lymphocytic lymphoma and diffuse type of grade I follicular lymphoma.

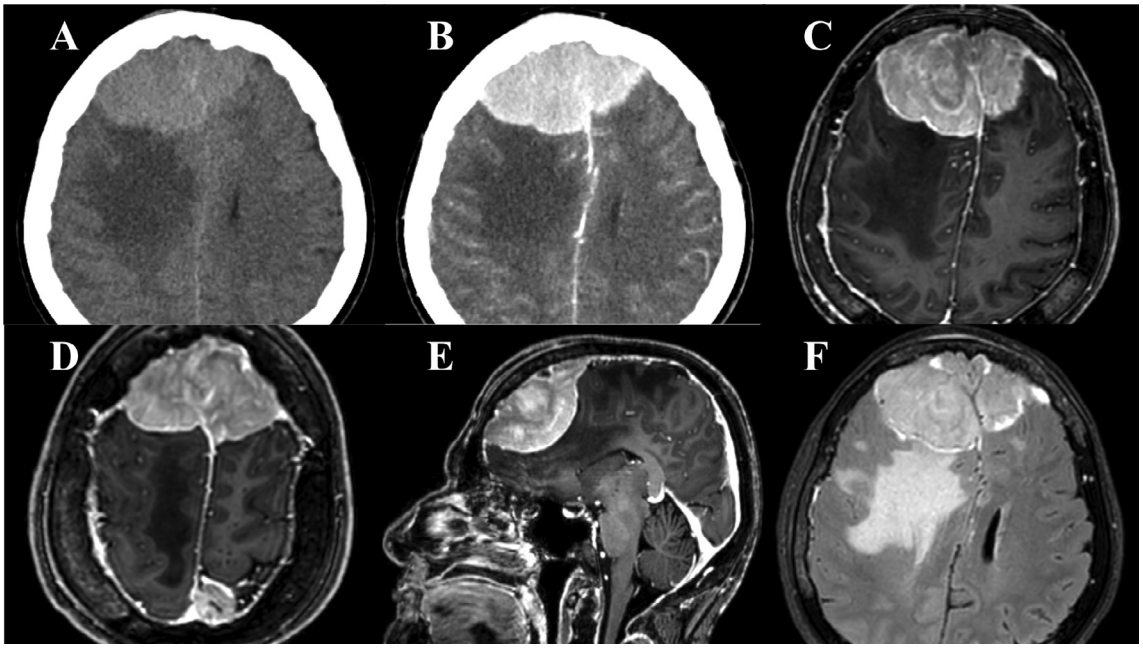

Fig. 1. Preoperative (A) non-contrast and (B) contrast head CT, (C, D) axial, (E) sagittal T1-weighted gadolinium-enhanced and (F) axial fluid-attenuated inversion recovery (FLAIR) MRI showing multiple contrast-enhancing parasagittal lesions in a 73-year-old woman with significant surrounding brain edema.

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Primary dural lymphomas (PDL) refers to a lymphoma with epidural or subdural involvement [1]. It is usually a low-grade B-cell MZL, whereas other types of primary central nervous system lymphomas (PCNSL) are usually high grade, diffuse large B-cell lymphomas [2]. PDL are uncommon and account for less than 1% of all CNS lymphomas [3].

Meningiomas are extra-axial tumors originated from the arachnoid and representing the most common primary CNS tumor (33.8%) [4]. Imaging and presentation of PDL may result in a misdiagnosis of meningioma or other dural-based neoplasm [1], especially since both PDL and meningiomas present with diffusely gadolinium-enhanced extra-axial lesions [5,6], dural tail [2] and vasogenic edema [7] thus PDL can mimics the radiological features of intracranial meningioma [8].

Complete resection of PDL can be difficult due to multiple tumors, infiltrative behavior or en plaque presentation. If complete resection is achieved, no additional treatment is appropriate. However, radiotherapy is preferable because PDL is very radiosensitive with low doses of radiation without the need of chemotherapy. [2] PDL have better prognosis comparing to PCNSL and to systemic lymphoma with CNS metastasis [9].

In general, patients with MZL-type of PDL have a 5-year overall survival (OS) greater than 86% [9–11], similar to a 76–85% OS in patients with typical meningioma after complete resection [12,13].

In summary, PDL should be part of the differential diagnosis of an enhancing dural based tumor mimicking a meningioma.

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