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CLINICAL IMAGING

Case reports

Intracranial dural metastatic prostate cancer can mimic meningioma: a report of two cases

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Abstract

Cerebral metastases from any malignancy, including prostate carcinoma, may present as a meningeal mass, and differentiating the lesion from a meningioma can be challenging. We report the clinical and neuroimaging features of two patients with dural metastases from prostate carcinoma and discuss differentiation of metastatic lesions from meningioma. In both patients, it appeared that the prostate carcinoma had been successfully treated, and neither patient was found to have any other metastases at the time of diagnosis of the dural lesions.

Keywords: Metastatic cancer; Meningioma; Magnetic resonance imaging; Prostate carcinoma

1. Introduction

Prostate carcinoma is the most common malignancy among men over 50 years of age; however, brain metastasis from prostate carcinoma is unusual [1,2]. Cerebral metastases from prostate carcinoma, both dural-based and intraparenchymal lesions, are rare and when noted are usually represent a terminal event with death in less than 1 year [3–6]. Cerebral metastases from any primary malignancy, including prostate carcinoma, may present as a meningeal mass, and differentiating the lesion from a meningioma can be a diagnostic challenge [4,5,7,8]. We herein report the clinical and neuroimaging features of two patients with dural metastases from prostate carcinoma, discuss the differentiation of metastatic lesions from meningioma and compare differences in radiological findings between these cases and those in the literature. In both patients, it appeared that the prostate carcinoma had been successfully treated, and neither patient was found to have any other metastases at the time of diagnosis of the dural lesions.

2. Case reports

2.1. Case 1

A 71-year-old man with a diagnosis of prostate carcinoma 4 years previously treated with surgery and radiotherapy was seen due to a 1-week history of headaches and progressive change of consciousness. The patient had no history of head trauma. Physical examination was normal, and no neurological deficits were noted. Magnetic resonance imaging (MRI) of the brain was done at 1.5 T (Signa LX2; GE Medical Systems, Milwaukee, WI, USA), using standard T1-weighted (T1W) and T2-weighted (T2W) sequences. The MRI revealed a bilateral, frontoparietal, extra-axial mass lesion with a crescent shape (Fig. 1). The signal was isointense on T1W and slightly hypointense on T2W, with heterogeneous enhancement and some nodularity on contrast-enhanced T1W. There was a

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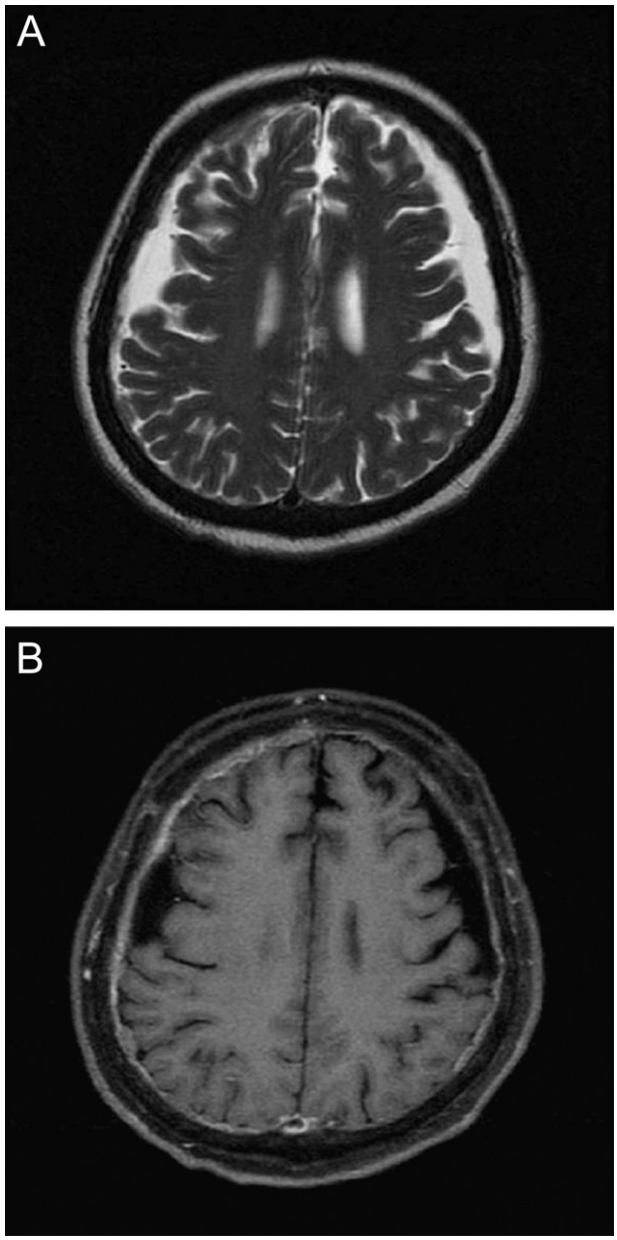

Fig. 1. Case 1. Axial T2W image (A) shows a bilateral frontoparietal subdural mass lesion with hypointensity and a bilateral frontal subdural fluid with hyperintensity. After gadolinium administration (B), there was heterogeneous enhancement with some nodularity of the bilateral subdural mass lesion.

bilateral frontal subdural fluid collection suggestive of subdural hematoma. Preoperative differential diagnoses included subdural metastasis or malignant meningioma. Serum prostate specific antigen (PSA) was elevated; other tumor marker levels were within normal limits. No evidence of other metastases was found.

The patient underwent surgical removal of the mass. The surgical report indicated the tumor was extra-axial in origin and attached to the dura. Chronic subdural hematoma was also noted. Histopathological examination was consistent with metastatic prostate carcinoma. The patient's final diagnosis was bilateral transdural metastases secondary to prostate carcinoma. Computed tomography scan of the chest, abdomen and pelvis was normal, and no evidence of bony metastasis was identified by bone scan. Postsurgical radiotherapy was performed, but the patient died of pneumonia complicated by sepsis 2 months later.

2.2. Case 2

A 70-year-old man with a diagnosis of prostate carcinoma 1 year previously treated with surgery and radiotherapy was

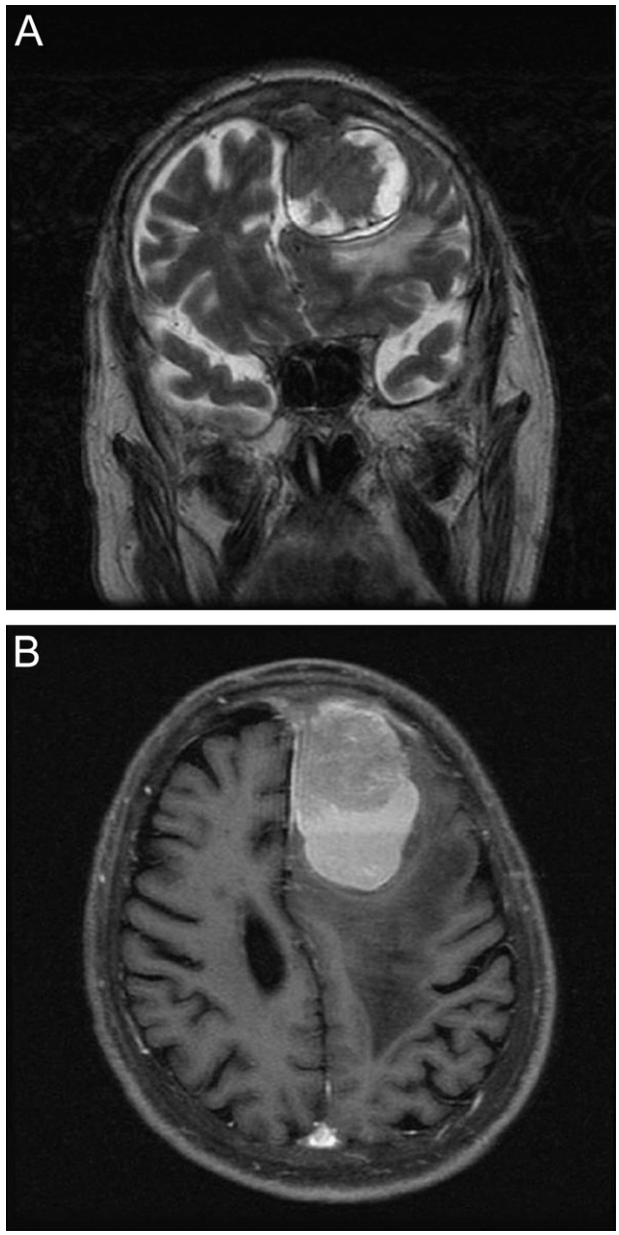

Fig. 2. Case 2. Coronal T2W image (A) revealed a left frontal mass lesion with mixed isointensity and hyperintensity and white matter edema. After gadolinium administration (B), heterogeneous enhancement of the tumor mass lesion with bone involvement was observed.