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Dural metastasis from prostatic adenocarcinoma mimicking meningioma: Report of a case with unilateral loss of vision

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Summary

We report a case of PCa (prostatic adenocarcinoma) with transdural metastasis which radiologically simulated a meningioma. During the course of the disease, the patient complained of progressive unilateral loss of vision as the first presentation of intracranial, extra-axial metastasis.

Key words: dural tail • magnetic resonance imaging • prostatic adenocarcinoma • metastasis • loss of vision

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Background

Prostatic adenocarcinoma (PCa) is the second most common malignancy in men which metastasizes mostly to pelvic lymph nodes, lungs and skeletal system. Intracranial metastasis is uncommon and usually involves leptomeninges, cerebrum and cerebellum. However, dural metastasis of PCa is exceedingly rare and only a few reports have been published in the literature. Recently, Dorsi et al. have reported a case of dural metastasis from PCa [1]. They described dural metastasis with subdural hematoma mimicking the appearance of an epidural hematoma in a patient with prostate adenocarcinoma (PCa). We also diagnosed a case of PCa with transdural metastasis that mimicked a meningioma on cranial magnetic resonance imaging (MRI).

Case Report

Our patient, a 62-year-old man who was known to have PCa (metastatic to lumbar vertebrae), presented with unilateral loss of vision in the course of the disease. He complained of progressive loss of vision on the right eye, present for 4 weeks. Neurological examination was normal. Computerized tomography (CT) of the chest, abdomen and pelvis was negative for visceral organ metastasis. However, cranial MRI revealed a solitary, lobulated mass in the right frontal area and antero-superior part of the right cavernous sinus at the level of the upper part of the midbrain, which appeared isointense on both T1- and T2- weighted images, with an

extensive dural tail. T1-weighted images on the other hand revealed hyperintense areas in the mass. Moreover, in the right frontal area and anterior part of the right cavernous sinus, the mass was extending into the subdural area. On postcontrast T1-weighted images, a wide dural-based, enhancing subdural mass with a maximum thickness of 7 millimeters was detected. The lesion was minimally extended from the right to the left frontal area. An extensive dural tail was noticed on postcontrast images, simulating a meningioma. As the mass was located in the anterior part of the optic chiasm, the right optic nerve was compressed (Figure 1).

Clinically and on imaging, no other evidence of central nervous system (CNS) dissemination was observed. Because of the location and size of the metastatic lesion, local radiotherapy was proposed instead of surgical resection.

Discussion

In the paper by Dorsi et al., lentiform dural metastasis and subdural collection simulated an epidural collection on noncontrast CT. When CNS involvement is observed in a PCa patient, it might be a result of vertebral metastases. A common route of seeding to the spinal dura mater is via the valveless vertebral venous system (Batson's plexus) or by a direct extension of calvarial lesions into the underlying dura [2]. Nevertheless, some authors believe that all metastases occur by way of the arterial system, with prior lung implantation being another causative factor [3].

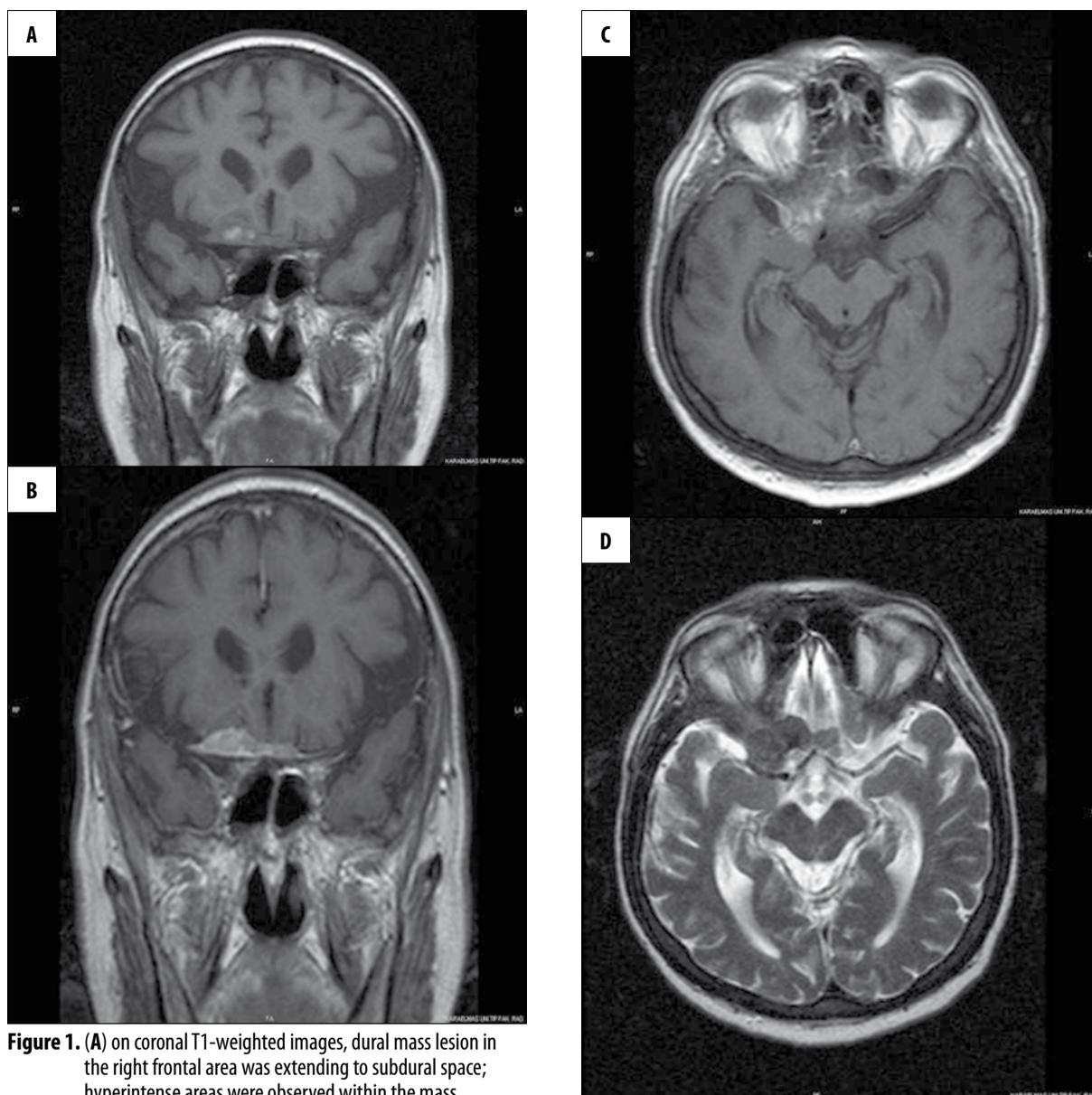


Figure 1. (A) on coronal T1-weighted images, dural mass lesion in the right frontal area was extending to subdural space; hyperintense areas were observed within the mass. (B) on postcontrast coronal T1-weighted images, a wide dural-based, enhancing subdural mass was seen. The lesion was minimally extended from the right frontal to the left frontal area. An extensive dural tail was noticed. (C) on axial T1-weighted images, an enhancing mass in the right frontal area and antero-superior right cavernous sinus at the level of the upper part of the midbrain was detected. (D) on axial T2-weighted images, a lobulated mass in the right frontal area and antero-superior part of the right cavernous sinus at the level of the upper part of the midbrain was seen.

Conclusions

In conclusion, we think that transdural metastases may mimic meningiomas in radiologic imaging, especially in patients with undiagnosed symptoms of prostatism or PCa. In older men with dural lesion(s), a possibility of PCa metastases must be considered and radiologic evaluation with MRI (rather than CT) should be performed in order to reach a definite diagnosis. In addition, men with PCa and vertebral metastases should be further evaluated by means of cranial MRI, particularly when any neurological problem was noticed.

References:

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