



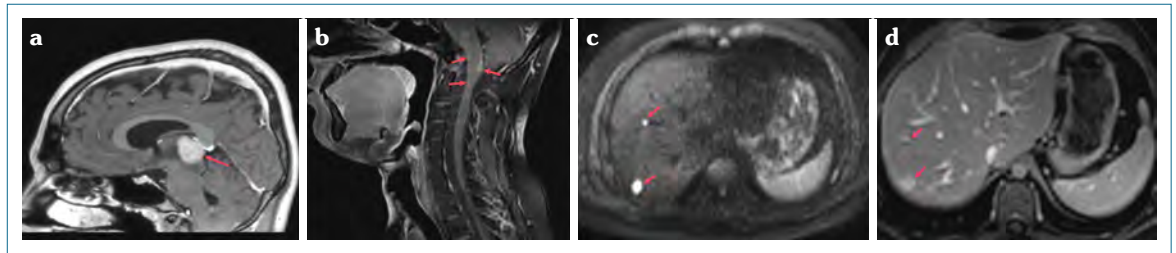
## Intracranial Germinoma Metastasizing to the Liver

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Hematogenous metastases of primary brain tumors are extremely rare and often overlooked (1). Glioblastoma, medulloblastoma, germ cell tumors, and ependymoma are the most common primary brain tumors that can present with hematogenous metastasis (2).

A 21-year-old male patient was referred for an abdominal ultrasound due to elevated liver enzymes. He had been diagnosed with pineal germinoma with spinal drop metastases 11 months ago (Fig. 1a, b), and was treated with gamma knife radiosurgery and craniospinal radiotherapy. The abdominal ultrasound revealed hypoechoic liver nodules. Magnetic resonance imaging (MRI) showed multiple small liver nodules with diffusion restriction and peripheral enhancement, indicating metastases (Fig. 1c, d). A liver biopsy confirmed the diagnosis of liver metastasis of intracranial germinoma. Systemic chemotherapy was initiated, and the two years of follow-up were uneventful.

Metastases should be considered in the differential diagnosis when nodular lesions are detected in solid organs in patients with aggressive brain tumors.



**Figure 1. (a) Preoperative sagittal contrast-enhanced T1-weighted MR image of the brain shows a hypervascular mass in the pineal region (arrow). (b) Preoperative sagittal contrast-enhanced T1-weighted MR image of the cervical spine shows small enhanced nodules (arrows) compatible with leptomeningeal metastases. (c) Axial diffusion-weighted MR image of the upper abdomen shows small nodules with diffusion restriction (arrows). (d) Axial contrast-enhanced T1-weighted MR image of the upper abdomen shows enhanced liver nodules (arrows) compatible with metastases**

MR: Magnetic resonance

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