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CASE REPORT

Atypical intraosseous osteolytic meningioma mimicking calvarial metastasis

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Summary Meningiomas are common benign intracranial neoplasms. Among the subtypes of the meningiomas, primary intraosseous meningiomas are the most uncommon. The authors report a 68-year-old woman who has had headache, dizziness, and a progressively enlarged mass in the forehead for 2 months. Computed tomography of the brain showed an osteolytic skull lesion with brain and scalp invasion. A complete systemic survey for metastatic tumors was negative. The patient underwent Simpson grade I tumor resection via the frontotemporal approach, followed by cranioplasty with bone cement. The pathologic examination revealed atypical meningioma. Postoperatively, she received adjuvant fractionated conformal brain radiotherapy. The result was satisfactory. In this report, in addition to presenting the clinical manifestation and treatment of the patient, the authors emphasize the importance of considering atypical intraosseous meningioma in the differential diagnosis of osteolytic skull tumors.

1. Introduction

If an elderly person has a bulging mass on the head, a primary bone tumor or metastatic tumor is first considered.[1] A review of the literature shows that a meningioma originating in an extradural location presenting as an intraosseous mass is very rare.[2] In most cases such a tumor is characterized by

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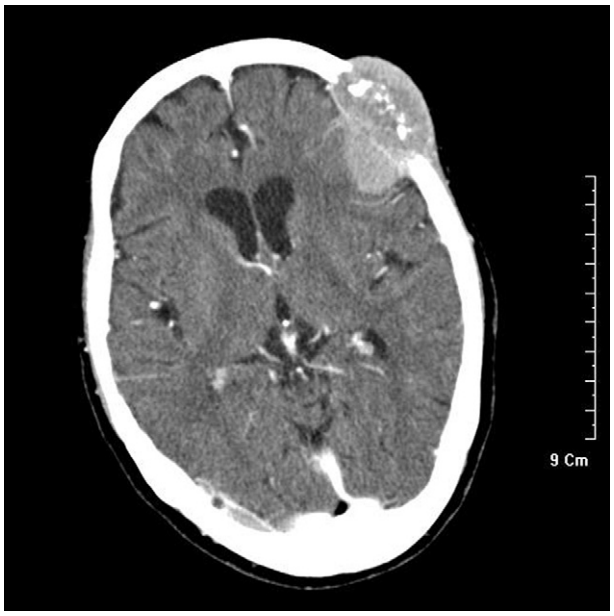

Figure 1 Computed tomography of the brain shows a 5 × 5 cm osteolytic mass in the left frontotemporal area.

osteoblastic or mixed osteoblastic-osteolytic changes without invading soft tissue.[3] We report a rare case of an atypical osteolytic intraosseous meningioma with scalp and brain invasion in a 68- year-old woman.

2. Case report

A 68-year-old woman was brought to the emergency room with the chief complaint of headache and dizziness, which she had been experiencing for several weeks. Noncontrast computed tomography (CT) of the head showed an osteolytic mass (5 × 5 cm) in the left frontal area of the head (Fig. 1). Under the impression of a metastatic tumor, a series of studies was performed. Tumor marker values, including those for cancer antigen 125 (CA-125; 14.7 U/mL), CA 15-3 (5.8 U/mL), CA 19-9 (13.4 U/mL), squamous cell carcinoma antigen (SCC Ag; 0.3 ng/mL), alpha-fetoprotein (AFP; 5.9 ng/mL), and carcinoembryonic antigen (CEA; 2.4 ng/mL), were within normal ranges. A complete systemic evaluation revealed no evidence of other disease.

The patient underwent Simpson grade I resection via the left frontotemporal approach followed by cranioplasty with bone cement. Craniotomy exposed a soft, mildly vascular tumor invading the subcutaneous layers of the scalp, skull bone, and cerebral parenchyma (Fig. 2). No new neurologic deficits developed after the surgery.

Pathologic examination revealed atypical meningioma (World Health Organization [WHO] grade II) (Fig. 3). The patient was discharged from the hospital on postoperative day 15. Three weeks after surgery, adjuvant fractionated conformal radiotherapy was initiated (dose, 5400 cGy in 30 fractions), covering the entire tumor bed. The patient is currently undergoing regular follow-up at the

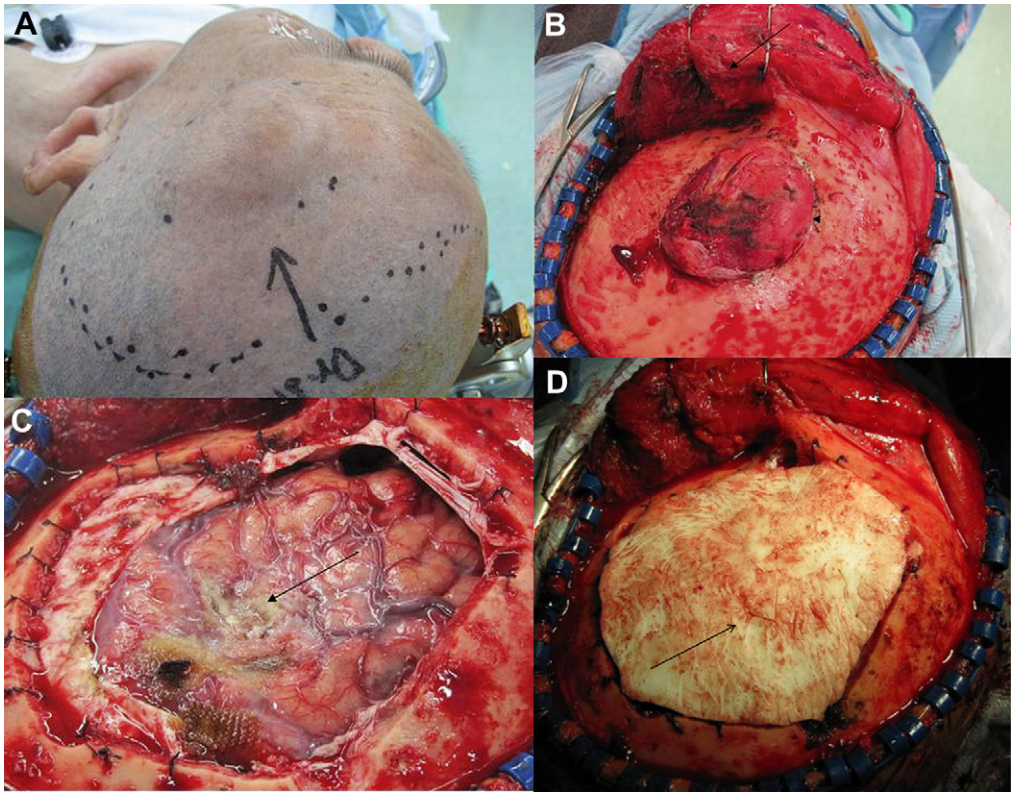

Figure 2 (A) A 5 × 5 cm protruding mass at the left frontal area (arrow). (B) Intraoperative finding of a well-defined, soft consistency with skull erosion (arrow) and scalp invasion (arrowhead). (C) Intraoperative finding of brain invasion (arrow) after removal of tumor. (D) Cranioplasty with bone cement after tumor excision.