CASE REPORT

Giant calvarial intraosseous angiolipoma: a case report and review of the literature

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Abstract

Intraosseous angiolipomas are very rare tumors occurring most commonly in the ribs and mandible. Only two cases with intracranial involvement have been reported in the literature. We report a case of a giant calvarial angiolipoma and its surgical treatment in a 30-year-old female who presented with a slowly expanding skull mass and discuss relevant radiological, histological and surgical findings.

INTRODUCTION

Intraosseous angiolipomas are extremely rare, slow-growing tumors. They are composed of mature adipose tissue admixed with arteries, veins, sinusoids and capillaries [1]. Although angiolipomas can occur anywhere in the body, intraosseous angiolipomas are most commonly reported to involve the ribs and mandible [2–7]. An English language review of the literature revealed only two reported cases of intracranial involvement [1–9]. These lesions may mimic angiomatous, lipomas, fibrous dysplasia or meningiomas on computed tomography (CT) and magnetic resonance imaging (MRI), and as such, are included in the differential diagnosis of an expanding skull mass [8].

We present the case of a 30-year-old woman with a 5-year history of a right parietal region mass that began expanding after pregnancy.

CASE REPORT

A 30-year-old female presented to our clinic with an enlarging right parietal region mass. She first noted the lesion 5 years prior to presentation but reported that it began to enlarge after her pregnancy in 2010. She denied any history of a similar lesion. She also denied any history of trauma in that region or cranial irradiation. She complained of altered sensation over the right parietal region without any pain with palpation. She reported no weakness or numbness with her extremities, or any difficulties with coordination or fine finger movements. She denied any seizure-like activity or visual disturbances.

On physical examination, she was a well-developed, well-nourished female with no apparent distress. She had no visual field deficits, papilledema or cranial nerve deficits. She displayed no apraxia or coordination difficulties. She had symmetric strength and reflexes in her upper and lower extremities. She had no nystagmus or other neurological deficits.

Received: December 27, 2015. Accepted: March 6, 2016

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extremities with a normal gait. She did not have any sensory dysfunction.

Her medical history was significant for pulmonary artery stenosis, which was surgically repaired at age 8 and irritable bowel syndrome, which was managed medically. She denied any tobacco use, alcohol consumption or illicit drug use. She did not use contraceptive medications.

Figure 1: CT bone window with sagittal (A) and axial (B) views provided. A large right parietal calvarial mass expanding into the diploic space and exerting mass effect on the right parietal lobe is demonstrated.

DISCUSSION

Intraosseous angiolipomas are extremely rare lesions mostly noted to involve extra-cranial locations such as the mandible and ribs [2–7]. There are only two reported cases of intraosseous angiolipoma that involve the cranium, where they present as a slow-growing mass [2, 9].

Intraosseous angiolipomas share imaging features with angiomatas, lipomas, fibrous dysplasia and meningiomas [8]. Intraosseous angiolipomas, on CT imaging, appear as hypo-dense lesions that involve the full thickness of the cranium with bony spicules [2, 9]. Angiographic studies often show hypervascularity associated with the lesion, and with MR imaging they are hyperintense on T1- and T2-weighted images and enhance with gadolinium [2, 9].

Some clinicians elect to initially follow these lesions with serial evaluation but ultimately surgery is the treatment of choice. Yu et al. [9] reported the natural history of an intraosseous angiolipoma over an 11-year period demonstrating that growth was secondary to the vascular component. This growth usually manifests with a cosmetic deformity as the lesions expand the calvarium [1].

In conclusion, calvarial intraosseous angiolipomas often present as slow-growing, extra-axial lesions without any associated neurological dysfunction. It is an admixture of adipose and vascular tissue, which can mimic other pathologies. The slow-growing nature of these lesions may afford an observational management strategy, but with the lack of lesion-specific imaging characteristics or biochemical tests, early surgical resection should be considered.

PATIENT CONSENT

The patient has consented to the submission of the case report to the journal. No institutional approval was required due to retrospective nature of the report.
The authors have no disclosures and no competing interests.

All authors contributed to the paper conceptualization, data acquisition, drafting of manuscript and/or critical review of the manuscript. All authors approve submission of the manuscript.

None declared.

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