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Case Report

Giant epidermoid cyst of the occipital area with bone invasion: A case report

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ABSTRACT

Epidermoid cysts are slowly growing pseudotumors usually measuring <2 cm in diameter. Large epidermoid cysts invading bones have been rarely reported in the literature. They may be a source of diagnostic difficulties before pathological analyses, and radiological examinations are essential to determine the extension of the cyst and to guide the surgical technique. We report, herein, on a patient having an unusually large epidermoid cyst located in the left occipital area invading the occipital bone.

Keywords: Bone invasion, Giant epidermoid cyst, occipital area

Introduction

Epidermoid cysts are slowly growing, rounded subcutaneous benign lesions usually measuring <2 cm in diameter. They are elastic with variable degrees of hardness, with the skin above the lesion remaining unaffected.[1] They may occur at any age, varying from about 1 year to more than 80 years of age. They rarely occur in the central nervous system where their incidence has been estimated at 0.2–1.8% of brain tumors.[2] We report, herein, on a patient having a very large epidermoid cyst located in the scalp invading the occipital bone that has been rarely previously reported in the literature.

Case Report

A 68-year-old man presented in with an asymptomatic subcutaneous mass in the left occipital area. Clinical examination revealed an elastic and soft lesion measuring 5 cm in its greatest diameter which was mobile but adherent to the scalp. Neurological examination was unremarkable. The patient had been operated on 12 years before for a small subcutaneous lump located in the same area. The slowly growing mass had recurred 3 years before his admission in our neurosurgery department. Radiological examinations using computed tomography (CT) and magnetic resonance imaging (MRI) revealed a subcutaneous cystic mass, isointense on T1-weighted images, and hyperintense on T2-weighted images, with destruction of the left occipital bone [Figure 1]. A complete surgical resection of the lesion and of the underlying invaded bone was performed, followed by a cranioplasty using cement. Post-operative recovery was uneventful and there was no evidence of recurrence 2 years after surgery.

The surgical specimen was composed of a rounded bone fragment bordered by a cystic lesion measuring 5 cm × 4.5 cm × 3.5 cm filled with a cheesy material which appeared to partially infiltrate the compact bone and diploe. Histological examination revealed a unilocular cystic wall lined by a well-differentiated flattened squamous epithelium covering osseous tissue [Figure 2a]. The lesion partially invaded the occipital bone without complete perforation [Figure 2b]. The cyst was filled with anucleate horny material arranged in laminated layers and was outlined by the occipitofrontal muscle [Figure 2c]. The squamous epithelium contained keratohyalin granules [Figure 2d]. No malignant features were observed.

Discussion

Epidermoid cysts usually manifest as slow-growing, painless, and well-circumscribed swellings that enlarge over years or decades. Giant epidermoid cysts with bone invasion have been rarely reported in the literature. They may be suspected using CT showing rounded expansile lesions with smooth sclerotic margins, but MRI appears to be the tool of choice, displaying a lesion possessing well-circumscribed margins,

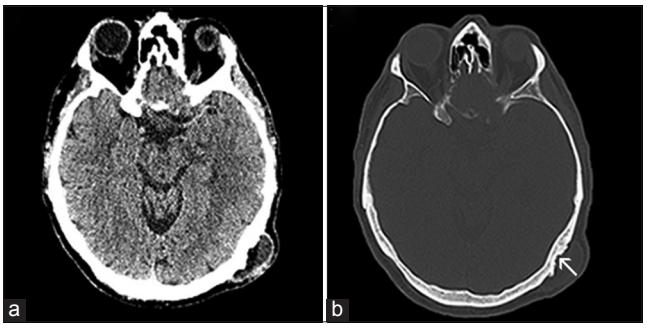

Figure 1: Imaging studies of the lesion. (a) Axial view of the cranium on computed tomography revealing a mass on the left occipital area with no apparent perforation of the occipital bone. (b) T1-weighted magnetic resonance imaging axial section displaying a cystic lesion with focal destruction of the occipital bone (arrow)

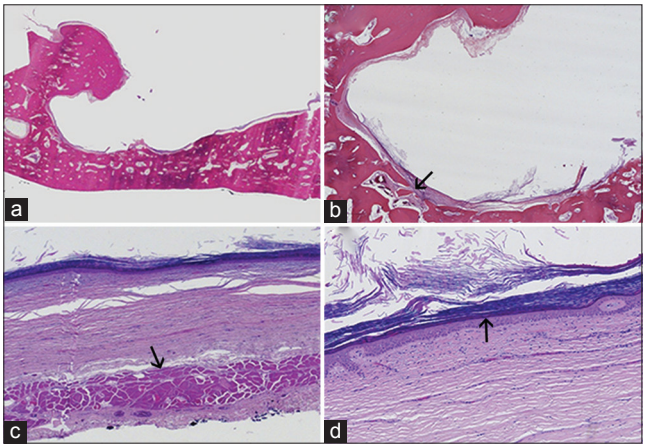

Figure 2: Histological hallmarks of the lesion. (a) Cystic wall of the lesion bordering the occipital bone (Hematoxylin and eosin [HE] staining; original magnification ×63). (b) With focal extension into the interosseous spaces with superficial erosion of bone lamellae (arrow) (HE staining; original magnification ×100). (c) At higher magnification, the cyst was lined by a stratified squamous epithelium with a lamellar keratinous material typical of a benign epidermoid cyst whose fibrotic wall was outlined by the occipitofrontal muscle (arrow) (HE staining; original magnification ×200). (d) And with the presence of a granular layer producing nucleate and anucleate squames (arrow) (HE staining; original magnification ×400).

classically iso- or hypointense on T1-weighted images, and hyperintense on T2-weighted images, but with homogeneous or heterogeneous hyperintensities depending on the content of the cyst, with no enhancement after gadolinium injection.[3] In 2003, Ambo *et al*. reported on an epidermoid cyst located on the left occipital scalp measuring 3 cm in diameter with total perforation of the occipital bone. These authors hypothesized that the bony defect was due to long-term continuous pressure by the cyst resulting in the bone defect that they called scalloping.[4] Histological examination should always be performed after cyst removal to confirm the diagnosis, to rule out other diagnoses, and to make sure that there is no developing squamous cell carcinoma within the cyst. Although very infrequently observed, malignant degeneration has already been reported. Whatever the location, malignant transformation should be considered in cysts with sudden increase in size or with ulceration.[5] The treatment consists in surgical resection with or without the overlying skin.

Conclusion

Although epidermoid cyst is a slow-growing benign lesion, it can cause diagnostic difficulties before pathological examination, especially when located in the scalp area with cranial bone invasion. CT and MRI are essential to determine the extension of the cyst and to guide the surgical technique. All removed epidermoid cysts should be examined histologically, with particular attention to total removal of the capsule and to any thickened areas of the cyst wall that provides essential information for the long-term prognosis.

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