



## Case Report

### Frontoethmoidal Orbital Osteoma As A Cause of Intracerebral Abscess: Case Report

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#### Abstract

We report a case of a 33 year-old-man who presented with a left frontal intracerebral abscess which was associated with a frontoethmoidal orbital osteoma. Erosion of the frontobasal dura mater by the expanding osteoma caused this rare presentation. The patient underwent evacuation of the abscess followed by resection of the osteoma. Although osteomas tend to remain quiescent in most of the patients, they rarely become symptomatic to such an extent that, as in the present case, they deserve to be considered in the differential diagnosis of intracerebral abscesses.

**Keywords:** Intracerebral abscess, osteoma, craniotomy

### İntraserebral Abse İle Görülen Frontal Osteom Olgusu

#### Özet

Bu çalışmada sol frontal abse ile görülen 33 yaşındaki erkek frontoethmoidal osteoma olgusu bildirilmiştir. Büyüyen osteoma tarafından dura materin erode edilmesi bu nadir duruma sebep olmuştur. Hastada abse drenajını takiben frontal osteom eksizyonu uygulanmıştır. Osteomalar bir çok hastada sessiz kalsalar da nadiren semptomatik hale gelebilirler, ve intraserebral abselerin ayırıcı tanısında düşünülmelidirler.

**Anahtar Kelimeler:** İntraserebral abse, osteom, kraniyotomi

#### INTRODUCTION

Osteomas are benign lesions of the paranasal sinuses most of which tend to remain asymptomatic. Trauma, infection and development are alluded as the origin of these lesions. When symptomatic, they cause local complaints such as headaches, proptosis, facial deformity and diplopia. Rarely do they extend intracranially causing dural defects which may result in intracerebral abscess formation as in our patient. Herein, we report a case of a 33 year-old-man who presented with a left frontal intracerebral abscess which was

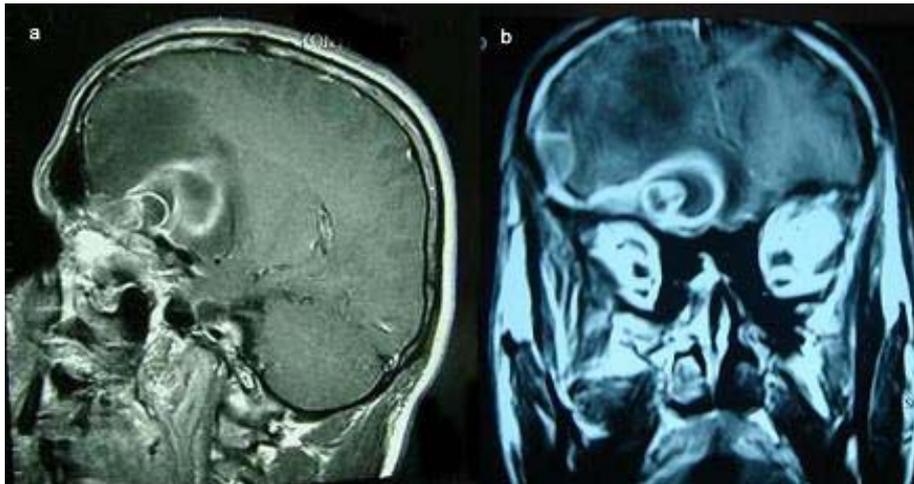
associated with a frontoethmoidal orbital osteoma.

#### CASE PRESENTATION

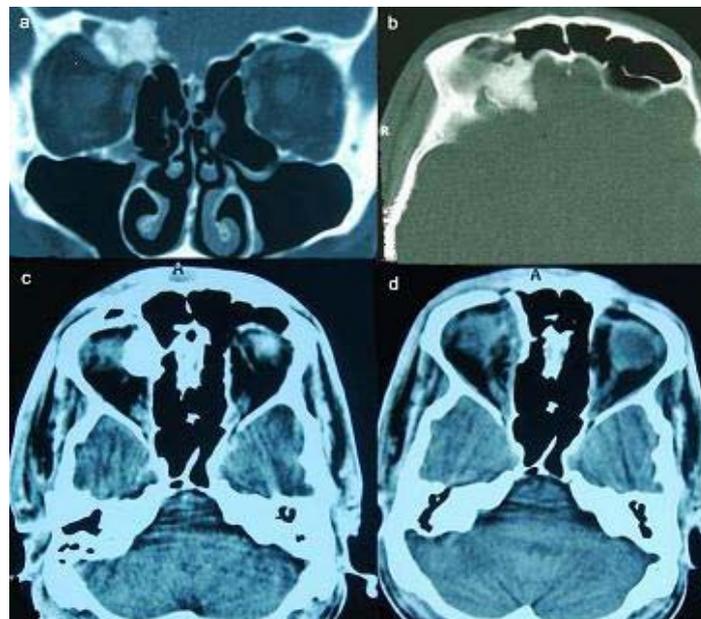
This 33-year-old man without remarkable medical history presented with severe frontal headaches for 10 days. His neurological examination revealed papilledema and left frust hemiparesis. A cranial MRI showed a right frontal 3x3 cm ring enhancing lesion with edema causing subfalcian herniation (Fig 1). The patient underwent a right frontal craniotomy which disclosed a walled-off abscess. The abscess was removed with the capsule and as intraoperative cultures were positive for

Streptococcus pneumoniae the patient was placed on antibiotherapy. When postoperative paranasal sinus CT (Fig 2a,b,c) showed a right frontoethmoidal and orbital bony lesion, the patient was operated on via the same route and approaching extradurally the lesion was removed using high speed diamond drill and curettage. The dural defect caused by

the erosion of the lesion was repaired in a watertight fashion with a vascularized pericranial tissue. Postoperative CT showed total removal of the lesion (Fig 2d). The patient did well after surgeries and upon completion of his course of antibiotics for 4 weeks was discharged free of any neurological deficits.



**Fig 1:** Contrast enhanced sagittal (a) and coronal plane (b) T1 weighted MRI scan showing right frontal 3x3 cm ring enhancing lesion with edema causing subfalcian herniation



**Fig 2:** Coronal (a), axial (b,c) paranasal sinus CT scan showing hyperdense right frontoethmoidal and orbital bony lesion presenting osteoma and axial CT scan showing reconstructed frontal sinus wall after removal of the osteoma (d).

## DISCUSSION

Osteomas are benign lesions of the paranasal sinuses most of which tend to remain asymptomatic. The origin of these lesions is a matter a debate and has been reported to be associated with trauma, infection and they were also reported as developmental. Their incidence in the general population has been reported to range between 0.014% to 0.43%<sup>(7,8)</sup>. They are most commonly seen in young males in the second through fifth decades. When symptomatic, they cause local complaints such as headaches, proptosis, facial deformity and diplopia<sup>(2,3,4,8)</sup>. Rarely do they extend intracranially causing dural defects which may result in intracerebral abscess formation as in our patient<sup>(1,5,6,8)</sup>. The most commonly isolated infectious agents from abscess of this kind are not surprisingly represents the natural or pathogenic inhabitants of the upper respiratory airways<sup>(1)</sup>. When considering treatment of an intracerebral abscess associated by a frontoorbital ethmoidal osteoma, the priority should be given to abscess which is a life threatening entity. Osteomas are well circumscribed lesions that can be removed totally at the same session with the abscess evacuation. When there is extensive extension into other sinuses a team approach with an ENT colleague may be beneficial for a satisfactory functional outcome.

In conclusion a high index of suspicion is necessary for the differential diagnosis of frontal abscesses for which paranasal sinus CT is invaluable. Resection of the osteoma either during evacuation of the intracerebral abscess or later, followed by watertight dural repair and appropriate antibiotherapy is the treatment of choice.

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