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Case Report

Exophthalmos Revealing an Ethmoid Osteoma

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ABSTRACT

Osteomas are slow-growing, benign bony tumors. Most are asymptomatic that produce clinical signs depending on their size and location. They are usually originates from the frontal and ethmoid sinus and much less frequently seen in the maxillary and sphenoid sinuses. An osteoma of the paranasal sinus is usually asymptomatic. Headache, proptosis, epiphora, diplopia, dizziness, facial deformity, face pain and cerebral complications are possible symptoms. The treatment of the paranasal osteomas are controversia.

Keywords: Exophthalmos; Ethmoid Osteoma; Surgery

Introduction

Osteomas are frequent, benign osteogenic tumors of con-nective tissue arising from the proliferation of cancellousor cortical bone. Craniofacial osteomas occur frequently, especially in the paranasal sinuses [2].

The osteoma is the most frequent benign neoplasm of the paranasal sinuses, and is located mainly in the frontal sinus (57 to 80%), followed by the ethmoidal sinuses (20%) [1].

An osteoma located away from the sinus ostium usually does not cause symptoms for a long time, although symptoms arise when the osteoma enlarges or is located in the drainage pathway of the sinus. Symptoms of ethmoid osteoma occur earlier than osteoma of the frontal sinus because of the small volume of the sinonasal cavity [6]. Headache localized over the area of osteoma, facial pain or deformity, rhinorrhea, anosmia, and epistaxis are common symptoms [4].

Histopathologically osteoma is hard and lobulated with an ivory-like appearance often mixed with a course granular component. The bone is compact or cancellous, with vascular or connective tissue components [7].

CT allows precise estimation of the size and location of the osteoma, as well as concurrent sinus pathology [5].

Surgery is the treatment of choice for symptomatic ethmoid osteoma. However, the approach is under discussion and depends on the extension and occurrence of complications [4].

Presentation of Case

A 36-year-old female, with no relevant medical or family history, who has presented with chronic headache with exophthalmos evolving for 6 months (Figure 1) with a decrease in visual acuity associated with a nasolateral nasal obstruction. The CT of the face objectified a giant ethmoid osteoma invading the eyeball and the base of the skull and compressing the optic nerve (Figure 1). The patient benefited from a significant tumor reduction with a slight regression of the expophthalmos and stationary visual acuity with a 6-month follow-up.

Discussion

Osteomas are the most common benign tumors of the paranasal sinuses, usually found in the frontal sinus (57-80 %) and less often in the ethmoid sinus, also lamina papyracea, (20 %), maxillary sinus (6.3 %) or sphenoid sinus (4.9 %). Osteomas are slow-growing neoplasms and affect 0.43-1 % of the population with a male dominance and in fourth decade. The tumors larger than 30 mm in diameter are considered giant tumors [6].

Osteoma is the most common benign tumor of nose and paranasal sinuses. Its incidence varies from 0.43% to 3%, and it's generally located in the frontal sinus (57-80%) followed by the ethmoidal sinuses (16-25%) [1].

Paranasal sinus osteomas may be asymptomatic and can be diagnosed incidentally on radiographs, but many present similarly to rhinosinusitis [7].

Ethomoid osteomas canproduce symptoms much faster than those located in thefrontal sinuses due to limited space in the ethomoid regionand, consequently, due to faster invasion of neighbouringstructures [2].

Osteomas can be divided 3 subgroups histologically.Cortical variant, sponge variant and mixed type (both cortical and sponge) [8]. The etiology of the osteomas are still unknown but there are 3 theories embryological, traumatic and infection theories [6].

Osteomas are generally diagnosed incidentally. They are usually asymptomatic. Only 5% of cases become symptomatic or require surgery [5]. Diagnosis is based on imaging studies, especially CT scan. When they become symptomatic, it is often related to the

location of the tumor. The most common symptom is headache [6]. Proptosis, epiphora, diplopia, dizziness, facial deformity, face pain and cerebral complications are the other possible symptoms. [6].

CT is an excellent tool for diagnosing osteomas, CT imaging studies provide a precise estimation of the size and location of the osteoma, as well as concurrent sinus pathology [5]. Earwaker reported that osteomas are classified into five patterns according to CT findings [4]: uniformly sclerotic, target-like lesion, partially corticated shell with heterogeneous matrix, heterogeneous matrix without a well-defined shell, and laminated pattern [8]. The treatment of the osteomas is controversial. The management of PNS osteoma is usually decided by symptoms, location, and size. Surgical removal is the generally accepted treatment of choice in symptomatic or rapidly growing osteomas, whereas conservative treatment is usually recommended for asymptomatic or small osteomas [5].

A detailed assessment of the margins of the tumour and definition of its relation with the surrounding structures is required in order to choose the most precise approach Endoscopic surgery, external approach or both are the main treatments for symptomatic osteomas of the sinuses. The choice must consider several factors such as tumor location, extension, dimension and the experience of the surgeon [6]. Endoscopic surgery is considered to be the treatment of choice for paranasal sinus osteomas. Ethmoidal osteomas without extrasinusal extension can obviously be removed endoscopically. In some cases, gentle orbital compression allowed medialization of the osteoma and removal of the lateral part of the orbital extension. Small osteomas (less than 1 cm) can be removed by an en bloc resection [7].

Figure 1: Showing a Exophthalmos

Figure 2A: Computed tomography of face, axial cut showing a ethmoid osteoma invading the eyeball and the base of the skull and compressing the optic nerve

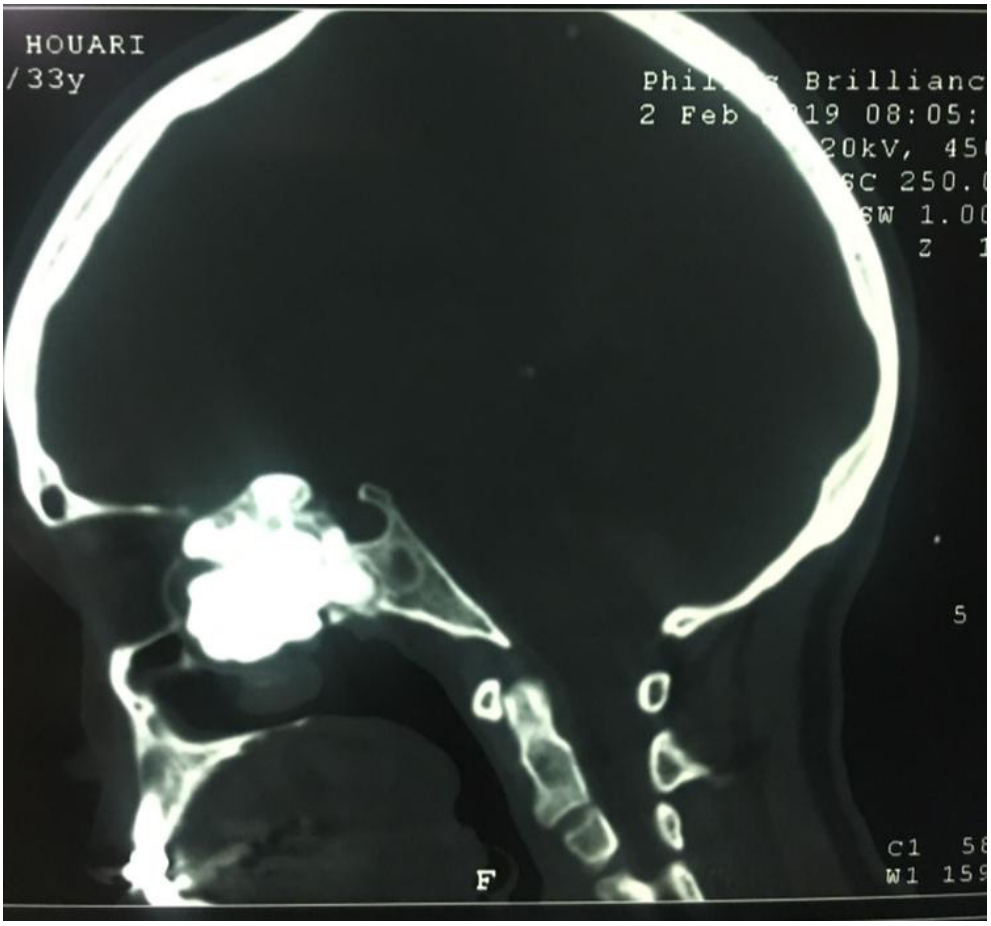

Figure 2B: Computed tomography of face, sagital cut, radiopaque lesion, occupying the right ethmoidal sinus

Conclusion

The ethmoid sinus is an uncommon location for an osteoma. These tumors can be asymptomatic and are typically detected incidentally on CT scans, but it is often responsible for frontal sinusitis and orbital complications.

Treatment of ethmoid sinus osteoma is surgical and the endoscopic approach offers the possibility of a safe removal with cosmetic advantages.

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