



## CASE REPORT

# ETHMOID SINUS OSTEOMA COMPRESSING THE NASOLACRIMAL DUCT

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### SUMMARY

Osteoma is the most common benign tumor of the paranasal sinuses, affecting from 0.43% to 1% of the population. Paranasal sinus osteomas are most commonly seen in the frontal sinuses, it is less common in the ethmoid and maxillary sinuses and is almost never seen in the sphenoid sinus. In this article, a female patient with complaints of right sided epiphora and facial pain is represented. A 39 year-old female patient represented with a about 6 months history of right sided epiphora and facial pain that lasted since 1 month. Visual acuity is not affected and intraocular pressure was within normal limits. An axial and coronal sectioned computed tomography scan of the orbit and paranasal sinuses revealed a large bony mass in the right ethmoid sinus which also blocks the nasolacrimal canal. The osteoma was removed with success through endoscopic sinus surgery. The patients postoperative course was uneventful. Epiphora resolved within days postoperatively. In her follow-up after 1 months, she was without symptoms. Since ethmoid sinus osteoma which compresses the nasolacrimal duct is rare, the case was reported.

*Keywords: epiphora, ethmoid sinus osteoma, nasolacrimal duct, endoscopic sinus surgery*

### NAZOLAKRİMAL KANALA BASI YAPAN ETMOİD SİNÜS OSTEOMU

#### ÖZET

Osteomlar paranasal sinüslerin iyi huylu tümörleri içerisinde en sık izlenenidir, popülasyonun yaklaşık %0.43 ile %1 arasını etkilemektedir. Paranasal sinüs osteomları en sık olarak frontal sinüste izlenirler, etmoid ve maksiller sinüslerde daha azdır, sfenoid sinüs içerisinde hemen hemen hiç izlenmezler. Bu makalede, yüzünün sağ tarafını tutan ağrı ve epifora yakınması olan bir kadın hasta sunulmaktadır. Son 6 aydır sağ epifora ve son 1 aydır da yüzünün sağ tarafını tutan ağrı yakınması olan 39 yaşındaki kadın hasta polikliniğe başvurdu. Görme keskinliğinde bir bozulma yoktu ve intraoküler basınç normal sınırlarda idi. Orbita ve paranasal sinüslerin aksiyel ve koronal kesit bilgisayarlı tomografisinde sağ etmoid sinüsü kaplayan ve nazolakrimal kanala bası yapan büyük bir kemik kitlesi saptandı. Osteom endoskopik sinüs cerrahisi ile başarı ile çıkartıldı. Hastanın ameliyat sonrası dönemi sorunsuz geçmiştir. Epifora yakınması ameliyat sonrasında bir kaç gün içerisinde kaybolmuştur. Bir ay sonrasında yapılan kontrolünde hastanın hiç bir yakınmasının kalmadığı izlenmiştir. Nazolakrimal kanala bası yapan etmoid sinüs osteomları nadir olarak izlendikleri için bu vaka sunulmuştur.

*Anahtar Sözcükler: epifora, etmoid sinüs osteomu, nazolakrimal kanal, endoskopik sinüs cerrahisi*

## INTRODUCTION

Osteoma is the most common benign tumor of the paranasal sinuses, affecting from 0.43% to 1% of the population. This neoplasm mainly affects males in comparison with females. The greater preponderance of sinus osteomas in man is attributed to men's greater exposure to trauma and the larger size of their sinuses<sup>1</sup>. Paranasal sinus osteomas are most commonly seen in the frontal sinuses, it is less common in the ethmoid and maxillary sinuses and is almost never seen in the sphenoid sinus<sup>2,3,4</sup>.

Osteomas are generally well-circumscribed discrete lesions that grow either very slowly or not at all. Despite their size, which can often attain several centimeters, they most often remain asymptomatic<sup>5</sup>. When symptoms do occur, they are usually a result of rapid expansion of the osteoma or secondary to obstruction of sinus drainage.

The most common symptoms is unilateral frontal headache from direct pressure or sinusitis secondary to obstruction of sinus drainage<sup>6</sup>. Extension beyond the sinus borders may also produce a number of symptoms. Extension into the orbit may lead to ocular symptoms; such as exophthalmos, diplopia, optic disc edema, optic disc atrophy, and eyelid edema<sup>1</sup>.

Erosion through the posterior table of the frontal sinus may lead to neurological complications such as subdural abscess, meningitis, or intracranial pneumatocele<sup>7,8</sup>.

In this article, a female patient with complaints of right sided epiphora and facial pain is represented.

## CASE REPORT

A 39 year-old female patient represented with about 6 months history of right sided epiphora, and facial pain that lasted since 1 month. Her past and familiar histories are without notice. Visual acuity is not affected and intraocular pressure was within normal limits.

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Received: 16 September 2004, revised for: 20 September 2004, accepted for publication: 21 December 2004

An axial and coronal sectioned computed tomography scan of the orbit and paranasal sinuses revealed a large bony mass in the right ethmoid sinus which also blocks the nasolacrimal canal (Figure 1 and 2). The osteoma was removed with success through endoscopic sinus surgery. The patients postoperative course was uneventful. Epiphora resolved within days postoperatively. In her follow-up after 1 months, she was without symptoms.



Figure 1.

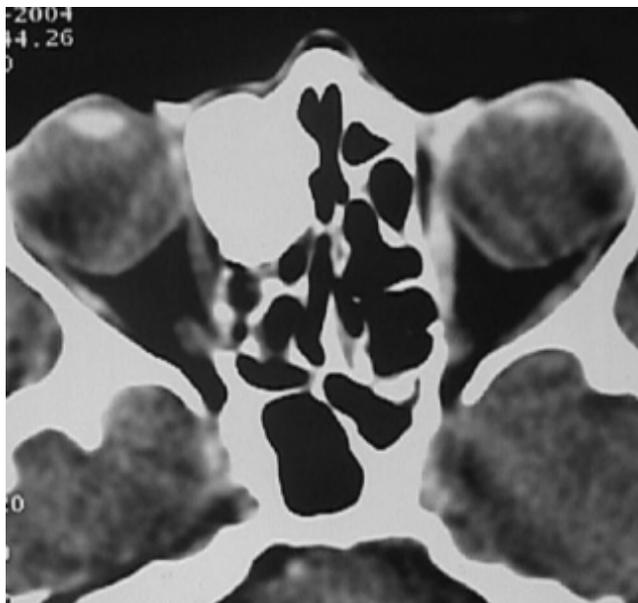


Figure 2.

## DISCUSSION

The precise etiology of osteoma is unknown, three hypotheses have been proposed to explain their development<sup>5</sup>. The developmental theory postulates that osteomas develop at the sites of fusion of tissues of different embryological origin such as occur at the junction of the embryonic cartilaginous frontal and

ethmoid bones<sup>9</sup>. This would account for the occurrence of frontal sinus osteomas, but it does not explain the occurrence of sinus osteomas in distant sites. Trauma and infection have also been implicated as causative factors, but many patients with osteoma deny any preceding history of these<sup>10</sup>. Thus although these theories may partially explain the etiology of osteomas, other factors seem to be in play as well.

To our knowledge, 7 ethmoidal osteoma cases which obstructs the nasolacrimal duct have been reported<sup>1</sup>.

Although symptoms are generally connected to the tumor size, both small osteomas with important symptoms and completely asymptomatic massive osteomas have been reported<sup>11</sup>.

In most of the cases, since the lesion is slow growing, symptoms may not be present and are sometimes misleading. There is no risk for malign transformation for osteomas.

Secondary orbital involvement is a rare event, in fact osteoma incidence varies from 0.9% to 5.1% of all orbital tumors in different series of cases. Cases presenting primary endo-orbital osteomas without sinusal involvement are exceptional<sup>12</sup>.

Since in our case, the orbital involvement is not present, ophthalmic symptoms such as diplopia, eyelid edema and orbital cellulitis are not present. Epiphora started months before the facial pain, but it is ignored by the patient.

Ethmoid osteomas tend to cause symptoms earlier than those in the frontal sinus because of the restricted space in the ethmoid region and consequently earlier encroachment on neighboring structures<sup>13,14</sup>.

The treatment of osteomas remains controversial. Generally, just observation is recommended for asymptomatic osteomas, with the exception of sphenoid osteomas, since it may compress optic nerve and cause blindness. For the symptomatic osteomas, surgical removal is the treatment of choice. Endoscopic removal of the osteomas is favored, since it has less morbidity, less or no cosmetic deformity and postoperatively less pain and earlier mobilization. The surgical approach has to take into account the following factors: protection of the vital structures especially optic nerves and cribriform plate, complete resection, and minimal deformity<sup>1,14</sup>.

## CONCLUSION

Paranasal sinus osteomas may represent themselves with a variety of symptoms; from just



mild facial pain to blindness. In the management of osteomas, the localisation of the osteoma and the symptoms of the patients should be taken into account.

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