



## CASE REPORT

# ENDONASAL ENDOSCOPIC RESECTION OF ETHMOID SINUS OSTEOMA WITH ORBITAL EXTENSION

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### SUMMARY

Osteomas are the most common benign neoplasms of the nose and paranasal sinuses. They are commonly seen in the frontal sinus, rarely in the ethmoid sinuses. A 42-year-old female patient presented with intermittent frontal headache and blurred vision. Paranasal computed tomography scans revealed a bony mass in the left ethmoid sinus. Tumor was resected via the endoscopic endonasal approach. After surgical removal, patient became free of her symptoms. Follow-up of two years showed no recurrence.

*Keywords: Osteoma, ethmoid sinus, endoscopic resection, ocular symptoms*

### ORBİTAYA UZANAN ETMOİD SİNÜS OSTEOMUNUN ENDONAZAL ENDOSKOPİK YAKLAŞIMLA ÇIKARILMASI

#### ÖZET

Osteom burun ve paranasal sinüslerin en sık görülen benign tümörleridir. Sıklıkla frontal sinüste görülmekle beraber nadiren de olsa etmoid sinüslerde görülebilirler. Aralıklı frontal baş ağrısı ve bulanık görme şikayetiyle başvuran 42 yaşındaki bir bayan hastanın paranasal sinus bilgisayarlı tomografisinde sol etmoid hücrelerde kemik dansitesinde bir kitle tespit edildi. Osteom ön tanısıyla planlanan operasyonda tümör endonasal endoskopik yaklaşımla çıkarıldı. Operasyon sonrasında hastanın semptomları tamamen düzeldi. Hastanın iki yıllık takibinde rekürrens düşündürülen bir bulgu ile karşılaşılmadı.

*Anahtar Sözcükler: Osteom, etmoid sinus, endoskopik rezeksiyon, oküler bulgular*

### INTRODUCTION

Osteomas are the most common benign neoplasms of the nose and paranasal sinuses<sup>1-6</sup>. They are commonly asymptomatic, being an incidental finding in 1% of plain sinus radiographs<sup>7,8</sup> and 3% of computed tomography (CT) scans of the sinus<sup>1,2,9,10</sup>. They are commonly seen in the frontal sinus, less frequently in the ethmoid, rarely in the maxillary and quite exceptionally in the sphenoid sinuses<sup>2,7,11,12,13</sup>. They may occasionally grow rapidly affecting not only the paranasal sinuses, but also surrounding structures as well<sup>7</sup>. The symptoms include headache localized over the area of the osteoma, facial pain or deformity, rhinorrhea, anosmia, and sometimes sinusitis or ocular symptoms<sup>1,9,14</sup>. In this article we report a case of ethmoid osteoma presented with intermittent frontal headache and blurred vision and resected via endonasal endoscopic approach.

### CASE PRESENTATION

A 42-year-old woman presented with a one-year history of intermittent headache localized at the frontal area involving the glabella and dryness of nasal cavity especially in the left side.

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Two months before the presentation to our clinic, patient has presented ophthalmology department with the symptoms of left periorbital numbness and blurred vision of the left eye. She had a diagnosis of astigmatism and a pair of spectacles was recommended. When the ocular complaints remain the same and headache gets worse, she referred to the otolaryngology department. In physical examination there was no facial deformity, globe protrusion or limited eye movements. The other clinical findings were normal. Coronal paranasal sinus CT revealed a 2x1 cm bony mass in the left anterior ethmoid cells (Fig.1).



**Figure 1:** Coronal paranasal sinus CT revealed a 2x1 cm bony mass in the left anterior ethmoid cells



The mass which was considered as osteoma was removed by dissecting from surrounding structures with endonasal endoscopic approach (Fig.2). A bony defect was determined in lamina papyracea. Histopathological examination confirmed the diagnosis of osteoma.



**Figure 2:** Osteoma removed via endonasal endoscopic approach.

The postoperative course of the patient was uneventful. The headache complaint of the patient improved immediately after the surgery. The ocular symptoms of the patient resolved completely in seven days, so that she had no need to use spectacles anymore. Coronal paranasal sinus CT six months after the surgery demonstrated a minimally defective lamina papyracea in the left side and no sign associated with recurrence (Fig.3). At present, the patient is free from her symptoms for two years.



**Figure 3:** Postoperative coronal paranasal sinus CT demonstrated no sign associated with recurrence.

## DISCUSSION

Osteomas of the paranasal sinuses are generally small and characteristically asymptomatic<sup>2,7,9,11,13,15,16</sup>. The most common symptom of a paranasal sinus osteoma is headache localized over the area of the osteoma<sup>9,15,17-19</sup>. The most common ocular findings are proptosis,

extraocular muscle displacement, optic disk edema, choroidal folds, and orbital infection<sup>5</sup>. Other ocular findings include shooting retrobulbar pain and transient visual disturbances. In this case patient presented primarily with headache. Patient was suffering also ocular symptoms like periorbital numbness and blurred vision. Although the physical examination of the patient did not reveal a clinically evident proptosis, a defect in lamina papyracea following the removal of the osteoma which is an objective sign for the orbital extension may explain the blurred vision.

Plain-film radiography is the basis of the diagnosis of osteoma<sup>20</sup>. Osteomas are best visualized with CT<sup>21</sup>. Computed tomography is very important in the evaluation of bone extension of the tumor; also the site of origin (paranasal sinuses, orbital roof, ethmoid and sphenoid bone) may be often defined on the coronal scans<sup>12</sup>. In this case the diagnosis of ethmoid sinus osteoma achieved by CT findings.

The management of ethmoid osteomas remains controversial<sup>1,9</sup>. Generally osteomas treated conservatively. No treatment is recommended for asymptomatic osteomas, especially in elderly subjects<sup>2,9,12,22</sup>. Indications for surgery in paranasal osteomas include sphenoid osteomas, irrespective of size, presence of significant symptoms like unexplained headache, recurrent sinusitis, ocular symptoms, central nervous system symptoms, enlargement seen radiographically, extension beyond confines of the sinus, filling of more than 50% of the volume of the frontal sinus, location near the frontal sinus ostium, cosmetic deformity<sup>7,9</sup>. In this report patient presented with unexplained intermittent headache and ocular symptoms. Therefore, she was a good candidate for surgical treatment.

The surgical approach must protect the vital structures, while optimizing the ability to totally excise the osteoma with minimal cosmetic deformity<sup>7,9,11</sup>. For large osteomas of the ethmoidfrontal region, surgical excision, including the osteoplastic flap technique, lateral rhinotomy, or direct anterior surgical exposure were used whenever there was evidence of progressive growth and involvement of surrounding structures<sup>1</sup>. A dacryocystorhinostomy approach using a mastoid drill and perforating burr has been described<sup>1,23</sup>. Transcoronal removal with an osteotome has been also described<sup>1,11</sup>. The necessities of these open procedures for slow growing, benign, and encapsulated tumors continue to be debated<sup>1</sup>. In well-selected cases, endoscopic sinus surgery offers a convenient, safe, and effective alternative to open procedures with reduced morbidity and superior cosmetic results<sup>1,2,9,24,25</sup>. In this case the endonasal



endoscopic approach was used and ethmoid sinus osteoma dissected from surrounding structures. Patient was discharged immediately after the operation.

### CONCLUSION

Ethmoid sinus osteomas can cause headache and ocular symptoms. In suspicious cases radiological examination especially paranasal sinus CT will help the diagnosis. In symptomatic cases osteoma should be resected. In well-selected cases, endoscopic sinus surgery offers a convenient, safe, and effective alternative to open procedures with reduced morbidity and superior cosmetic results.

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