

Giant Concha Bullosa with Skull Base Extension: Case Report

Kafa Tabanı Yayılımlı Dev Konka Bülloza

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ABSTRACT Concha bullosa is the most common anatomic variation of osteomeatal complex region and is defined as different degrees of pneumatization of middle turbinate. It is usually asymptomatic. The incidence of concha bullosa is 13-53%. In this article, we report a case of giant concha bullosa with skull base extension in a 36-year-old man. He presented with a three years history of nasal obstruction. Anterior rhinoscopic and endoscopic nasal examination revealed hypertrophy of right middle turbinate. Computed tomography of paranasal sinuses showed a giant concha bullosa with skull base extension on the right nasal cavity. Unilateral partial endoscopic concha bullosa resection was performed under local anesthesia.

Key Words: Skull base; nasal obstruction; turbinates; nose diseases

ÖZET Konka bülloza, osteomeatal kompleks bölgesinin en sık görülen anatomik varyasyonudur ve orta konkanın çeşitli derecelerdeki pnömatisasyonu olarak tanımlanır. Genellikle asemptomatiktir. Konka büllozanın insidansı 13-53% arasındadır. Bu makalede, 36 yaşında, orbital uzanımı olan dev konka büllozalı erkek hastayı yayımladık. Hastanın üç yıldır burun tıkanıklığı mevcuttu. Anterior rinoskopik ve endoskopik burun muayenesinde sağ orta konkanın hipertrofik olduğu görüldü. Paranasal sinüs bilgisayarlı tomografide sağ nazal kavitede kafa tabanı uzanımlı dev konka bülloza saptandı. Lokal anestezi altında endoskopik olarak unilateral parsiyel konka bülloza rezeksiyonu yapıldı.

Anahtar Kelimeler: Kafa tabanı; nazal tıkanıklık; kıvrıntılar; burun hastalıkları

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Concha bullosa is the most common anatomic variation of osteomeatal complex region that is generally seen in the middle turbinate, and rarely in the superior and inferior turbinate as well.¹⁻³ The degree of pneumatization may be variable. Minimal pneumatization may appear on only one section of the CT scan. In contrast, it may be so severe that involves bilateral middle turbinates, expands like balloons, come into intimate and extensive contact with large areas of the nasal septum and the entire lateral wall of the nose. Pneumatization of the middle turbinate may originate from the frontal recess, anterior ethmoids or directly from the middle meatus. Ventilation of the air cells within a concha bullosa comes from the area where the pneumatization originates.² Concha bullosa is usually asymptomatic, but sometimes nasal obstruction, headache, postnasal drip and hyposmia can be seen.⁴ The definitive diagnosis, contain anterior

rhinoscopy or nasal endoscopic examination and CT scan of paranasal sinuses.⁵ The most appropriate treatment option is endoscopic sinus surgery as minimally invasive procedure. We report a case of giant concha bullosa with skull base extension which has caused nasal obstruction for three years.

CASE REPORT

A 36 year old man was admitted to our clinic who complains of nasal obstruction for three years. Anterior rhinoscopic and endoscopic examination revealed a hypertrophic right-sided middle turbinate that completely obstructed the ipsilateral nasal passage and also partially obstructed the left nasal passage by deviating the nasal septum. CT scan of paranasal sinuses demonstrated a giant middle concha bullosa with skull base extension, which compressed the nasal septum (Figure 1).

After giving information about the surgery to the patient informed consent form received. Then under local anesthesia resection of lateral half of the middle turbinate and septoplasty was performed unilaterally by endoscopic technique. At follow-up 3 months later, the patient had no complaint and no sign of recurrence.

DISCUSSION

The incidence of concha bullosa is %13-53.^{6,7} Anterior ethmoidal cells and posterior ethmoidal cells are responsible for pneumatization respectively ap-

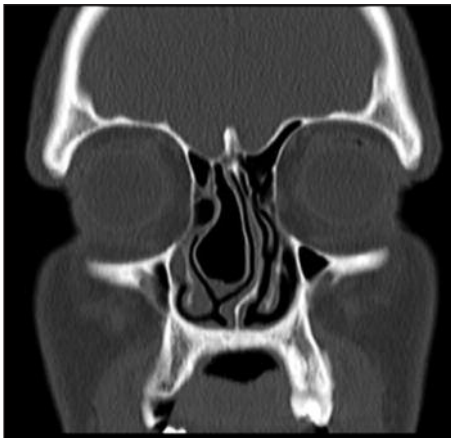


FIGURE 1: A giant middle concha bullosa with skull base extension.

proximately %55 and %45 of the cases. Bolger et al. classified patients into three groups according to pneumatization degree of concha bullosa and localization. These are lamellar, bullous and extensive types. In the lamellar type, pneumatization is located in the vertical lamel of middle turbinate. In the bullous type, it is located in the inferior segment while in the extensive form all middle turbinate is pneumatized.⁷ The severity of symptoms caused by concha bullosa is closely related to degree of pneumatization. Especially, in cases with impaired ventilation and drainage of osteomeatal unit can cause sinonasal pathologies. The lamellar and bullous types are generally asymptomatic, while the extensive type associated with mechanical obstruction due to nasal blockage. The development mechanism of concha bullosa is not fully understood. Stammberger et al. on this issue suggested two different theories. According to the first theory, after the formation of septum deviation, the air flow pattern of nasal cavity and on the opposite side of the space provokes the development of concha bullosa.² According to another theory, the concha bullosa and septal deviation are two different anomalies. Another study reviewed nearly %80 of patients with a dominant concha bullosa have a concurrent deviated septum.⁸ There is also a strong association between unilateral concha bullosa and contralateral septal deviation.

The treatment of concha bullosa is endoscopic partial middle turbinate resection. Surgical resection of concha bullosa entails careful preservation of medial lamella (which attaches to the skull base) and resection of only lateral half of turbinate. The extent of middle turbinate pneumatization is evaluated on CT scans and this allows the surgeon to anticipate points of safe entry into the lumen of concha bullosa. The most unwanted complication during the surgery is cerebrospinal fluid leak from anterior skull base. To avoid this complication the surgeon must be gentle and make soft maneuvers during medialization and resection of the concha bullosa. Differential diagnosis on such case is vital in order to make an accurate treatment. Thus paranasal sinus CT is essential to exclude anterior skull base pathologies as nasal encephalocele, meningocele and glioma.

We performed septoplasty and unilateral endoscopic partial middle turbinate resection under local anesthesia. At follow-up 3 months later, the patient had not complaint of nasal obstruction and neither recurrence, nor complications.

In conclusion it is important to determine the origin of concha bullosa with axial section paranasal sinus CT to minimize the complications in case of skull base extension when surgical intervention is considered.

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