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Mucopyocele of the Concha Bullosa: A Report of Two Cases

Konka Bülloza Mukopiyoseli: İki Olgunun Sunumu

CASE REPORT
OLGU SUNUMU

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ABSTRACT
ÖZET

Concha bullosa mucopyocele is a rare entity that presents with persistent nasal symptoms. This paper presents two female patients, aged 34 and 26 who were admitted with persistent nasal complaints and headache. Anterior rhinoscopy of both patients showed enlarged middle turbinates obstructing the nasal cavities. Computerized tomography scans revealed homogenous hypodense lesions in the middle turbinates. With the diagnosis of concha bullosa mucocele, lateral parts of the affected middle turbinates were resected with an endoscopic approach. There were no intraoperative or postoperative complications. Nasal obstruction and headache of the patients vanished postoperatively. Both of the patients were followed up for one year and neither recurrence nor synechiae were observed. In the presence of persistent nasal obstruction in patients who do not respond to medical therapy, concha bullosa mucopyocele should also be considered in the differential diagnosis, although it is rarely seen.

Key words: Mucocele, turbinates, nasal obstruction

Konka bülloza mukopiyoseli persistan nazal semptomlarla seyreden nadir bir antitedir. Bu yazıda 34 ve 26 yaşlarında sürekli burun tıkanıklığı ve başağrısı şikayetleri ile başvuran iki olgu sunuldu. Her iki olguda da anterior rinoskopik muayenede görülen alt konkaların üzerine yerleşmiş düzgün yüzeyli lezyonların burun pasajlarında obstrüksiyona yol açtığı izlendi. Bilgisayarlı tomografilerde bu lezyonlar homojen hipodens yapıda gözlendi. Konka bülloza mukoseli tanısı ile olgular, endoskopik yaklaşımla tedavi edildi. Ameliyat esnasında ve sonrasında komplikasyon gelişmedi. Tedavi sonrası her iki olgunun da burun tıkanıklığı ve başağrısı şikayetleri geriledi. Olgular girişim sonrası 1'er yıl sonra kontrol edildi ve herhangi bir nüks veya sineşiye rastlanmadı. Medikal tedaviye yanıt vermeyen persistan burun tıkanıklığı şikayeti ile başvuran hastalarda konka bülloza mukopiyoseli ihtimali göz önünde bulundurulmalıdır.

Anahtar kelimeler: Mukosel, konka, burun tıkanıklığı

Introduction

A pneumatized middle turbinate is called concha bullosa, and was first described in 1893 by Zuckerkandl (1). The pneumatization of the middle turbinate can affect only the vertical (laminary), the inferior (bulbous), or both parts, the last type being the most frequent (2). A blockage in the drainage of the concha bullosa can cause a mucocele, which is referred to as mucopyocele if infected (3). In the sinonasal system, mucoceles and pyoceles are most commonly seen in the fronto-ethmoidal complex (4). Pyocele of the concha bullosa is a rare entity and it is different from an infected concha bullosa with its destructive potential and possible orbital invasion (5). To the best of our knowledge, up to now according to the literature in English, 12 cases of concha mucopyolecele have been reported. This paper presents two cases of concha bullosa mucopyolecele who were treated with endoscopic surgery.

Case Reports

Case 1

A 34-year-old female patient applied with a history of nasal obstruction, postnasal drip and headache, which had been present for almost a year. Symptomatic treatment with decongestants and nasal steroids were not beneficial. Systemic and otorhinolaryngological history revealed no former diseases.

In anterior rhinoscopy, it was observed that excessive growth of the right middle turbinate was obstructing the right nasal cavity, and the septum was deviated towards the left side. No crusts or pus were present in the nasal cavity, and the nasal mucosa seemed to be normal.

In the paranasal sinus computerized tomography (CT), the concha bullosa was enlarged, filling the right nasal cavity and shifting the septum to the left and a hypointense soft tissue mass was seen filling the middle turbinate (Figure 1).

The patient was operated on with a prediagnosis of concha bullosa mucocele. The content of the middle turbinate was drained anteriorly with a vertical incision. Specimen obtained was sent for bacteriological and micological ex-

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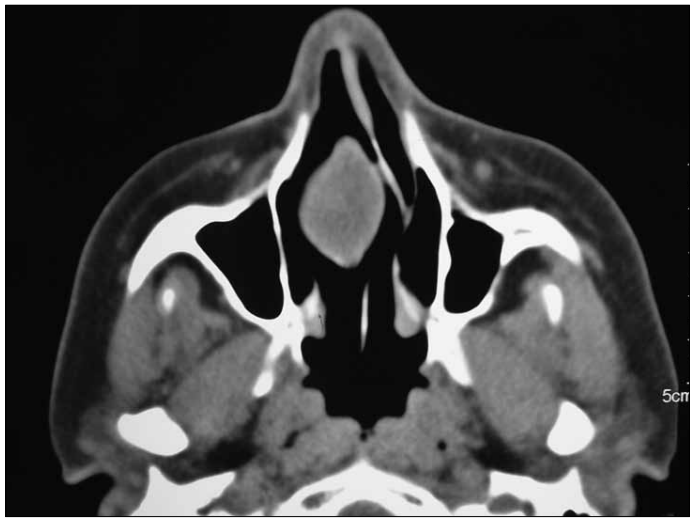


Figure 1. Axial CT scan of patient 1 shows a hypointense soft tissue filling the middle turbinate and shifting the septum

amination, which later indicated no presence of fungi, but a growing microorganism: *Pseudomonas aeruginosa*. The lateral lamella and anterior-inferior part of the medial lamella of the right middle turbinate were excised. Histopathological examination showed findings of sinonasal mucosa with chronic inflammation. In addition, septoplasty was performed in the same session. Postoperative ampicillin/sulbactam therapy was given for ten days.

During the postoperative follow up, the patient's nasal obstruction, headache and postnasal drip complaints had totally disappeared. Nasal examination in the third month after the operation showed that the nasal cavity was clean and the mucosa was normal.

Case 2

A 26-year-old female patient applied with complaints of headache and nasal obstruction, which had been present for a year. She had no previous surgical or medical treatment. Her systemic and oto-rhinolaryngological history were unremarkable. In the anterior rhinoscopy, a conchal hypertrophy which was obstructing the right nasal passage and a left-sided septal deviation were observed. The nasal mucosa was evaluated as normal (Figure 2a).

In the paranasal CT scan, a mass, with the density of soft tissue, was observed obstructing the right nasal passage. The mass also seemed to depress the medial portion of the right orbita (Figure 2b). The patient was taken for an endoscopic surgical procedure in which a vertical incision to the middle turbinate was implemented, and a discharge of pus was observed (Figure 2c). Samples for aerobic and anaerobic microorganisms were taken. The lateral lamella and the anterior-inferior part of the medial lamella of middle turbinate were excised. Some specimens were obtained for histopathological evaluation. The diagnosis was chronic inflammation.

Discussion

Concha bullosa, the most frequent anatomical variation of the middle turbinate, is reported to have a percentage of 14 to 53% (2, 5). The middle turbinate, the center of the three processes that are suspended from the lateral wall of the nasal cavity, projects over the ethmoid bulla and the uncinate process. It is attached superiorly to the cribriform plate, and its free border slopes inferiorly and posteriorly. The base of the middle turbinate can be invaded by ethmoid air cells, which can enlarge the turbinate; an enlarged turbinate is known as a concha bullosa (6). It is usually asymptomatic and rarely large enough in size to cause sinus ostium and nasal obstruction. In such cases, surgical management is required (7). In general, concha bullosa drains into the frontal recess or the middle meatus, and it is possible that variations in this drainage occur (8-10).

Mucoceles of the paranasal sinuses develop due to an obstruction of the related sinus ostium, leading to a slowly expanding mass that becomes symptomatic as it impinges on nearby structures (10). Mucopyocele, the infected form of mucocele, can cause local bone erosion, diplopia and nasal obstruction. In both of the presented cases, the mucopyocele caused nasal obstruction, headache, and septal deviation.

Mucoceles and mucopyoceles are common in paranasal sinuses, but not in a concha bullosa (3). The mucoceles of the sinonasal system exist in the frontal, ethmoid, and maxillary sinuses, with the frequencies of 66%, 25% and 10%, respectively (11).

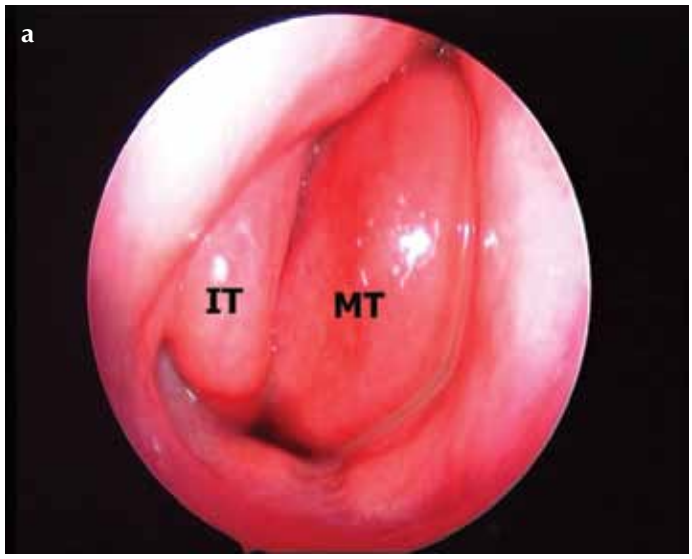
The differential diagnosis should be carried out carefully when evaluating an intranasal mass. Coevaluation of endoscopic and radiological findings would be appropriate. The likelihood of a nasal mass observed in one side of the nasal cavity being a polyp, papilloma, or tumor should be taken into consideration (12).

Computerized tomography (CT) gives valuable information about nasal and paranasal structures, and it is also very helpful in the diagnosis of turbinate pathologies. On the other hand, magnetic resonance imaging (MRI) shows orbital and intracranial pathologies in inflammatory paranasal sinus diseases better than CT. However, it is not appropriate for bony structures and is more expensive (5). In the cases presented in this paper, CT was the only imaging technique used.

The presence of concha bullosa, especially when unilateral, is considered to be unrelated to any sinus disease (5). In our cases, there were no clinical and radiological findings of any sinus disease, in parallel with the literature.

The advised therapy for concha bullosa is endoscopic surgery (13, 14). Four methods used in surgical management are lateral marsupialization, medial marsupialization, crushing, and transverse excision (15). In both of the cases presented here, the method of lateral lamella excision was used. In addition, the medial lamella of the middle turbinate was partly resected in patients. The nasal septum, depressed by the concha bullosa mucopyocele, was reshaped in the same surgical session in patient 1 in order to obtain an open nasal passage.

In previous reports, the bacterial cultures yielded microorganisms such as *S. aureus*, *Diphteroids, S. pyogenes* and *Fusobacterium* (3, 15). In contrast to the cases in the literature, *P. aeruginosa* and *S. epidermidis* were the bacteria that grew in the cultures of patients 1 and 2, respectively. Because it was a sensitive strain, ampicillin/sulbactam therapy was given to patient 1 and no antibiotic therapy was given to patient 2 during the postoperative period.



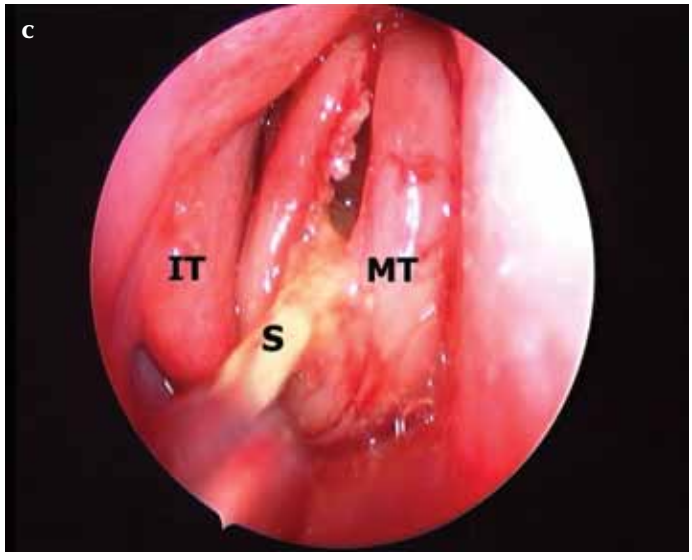


Figure 2. (a) Preoperative endoscopic view of the right nasal cavity showing an enlarged middle turbinate (MT: middle turbinate, IT: inferior turbinate) in a 26-year-old female patient. (b) Coronal CT scan of the patient shows a hypointense soft tissue filling the middle turbinate and depressing the septum. The depression of the medial portion of the right orbit can also be seen. (c) Purulent secretion discharging from the vertical incision of the middle turbinate in the patient
MT: middle turbinate, IT: inferior turbinate, S: secretion

Conclusion

In the presence of persistent nasal obstruction in patients that do not respond to medical therapy, concha bullosa mucocele should also be considered in the differential diagnosis, although it is rarely seen.

Conflict of Interest
The authors declare that they have no conflicts of interest.

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Informed Consent: Written informed consent was obtained from patients who participated in this study.

Authors' contributions: Conceived and designed the experiments or case: İK, MİŞ. Examination and follow-up of the patient: İK, YU. Analyzed the data: AV, MİŞ. Wrote the paper: İK, MİŞ, AV. All authors have read and approved the final manuscript.

Çıkar Çatışması
Yazarlar herhangi bir cıkar catışması bildirmemişlerdir.

Hakem değerlendirmesi: Bağımsız hakemlerce değerlendirilmiştir.

Hasta Onamı: Yazılı hasta onamı bu çalışmaya katılan hastalardan alınmıştır.

Yazar katkıları: Çalışma fikrinin tasarlanması: İK, MİŞ. Hastanın muayenesi ve takibi: İK, YU. Verilerin analizi: AV, MİŞ. Yazının hazırlanması: İK, MİŞ, AV. Tüm yazarlar yazının son halini okumuş ve onaylamıştır.

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