

CASE REPORT

Pyocele of the middle turbinate: a case report

Orta konka piyoseli: Olgu sunumu

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Mucoceles are uncommon and the majority of cases occur in the frontoethmoidal complex. The accumulation of mucous secretion and eventual secondary infection may result in the formation of a pyocele of the middle turbinate, which is exceptionally rare. This case report presents a patient with a large pyocele of the middle turbinate invading the orbit. A 48-year-old woman presented with a three-week history of nasal obstruction, slight rhinorrhea, and headache. There was an external swelling of the nasal pyramid just near the medial canthus and right exophthalmos with bulging of the medial canthus of the ipsilateral eye. A computed tomography scan revealed a rounded, expansive lesion of soft tissue density. There was a thin compact bone at the margin. Under general anesthesia, resection of the lateral and inferior walls of the middle turbinate was performed. The large cystic mass was filled with pus. Exophthalmos and bulging of the medial canthus immediately disappeared. Histologic examination showed the mucocele wall with a ciliary respiratory epithelium.

Key Words: Mucocele/radiography; paranasal sinuses/radiography/surgery; turbinates/ radiography/pathology/surgery.

Mukosel sıklıkla frontoetmoidal bölgeden kaynaklanan nadir görülen bir patolojidir. Mukus salgısının birikimi ve bunun enfekte olması piyoseli meydana getirir; bu patolojide orta konka yerleşim ise çok nadirdir. Bu makalede, orta konkadan kaynaklanan, orbitayı invaze eden bir piyosel olgusu sunuldu. Üç haftadan beri devam eden baş ağrısı, burun tıkanıklığı ve akıntısı olan 48 yaşındaki kadın hastanın muayenesinde burun piramidinin medial kantusa komşu bölgesinde şişlik ve aynı tarafta gözde eksoftalmi gözlemlendi. Bilgisayarlı tomografide, yumuşak doku yoğunluğunda, yuvarlak şekilli ve çevre dokulara uzanan kitle görüldü. Kitlenin kenarlarında ince kemik lamel bulunmaktaydı. Genel anestezi altında, orta konka olarak değerlendirilen yapının lateral ve inferior duvarları alındı. Geniş kistik kitlenin iltihap ile dolu olduğu görüldü. Medial kantus komşuluğundaki şişliğin ve eksoftalminin hemen düzeldiği gözlemlendi. Örneğin histopatolojik inceleme sonucu, silyalı solunum epiteli ile örtülü mukosel olarak bildirildi.

Anahtar Sözcükler: Mukosel/radyografi; paranasal sinüsler/radyografi/cerrahi; konka/radyografi/patoloji/cerrahi.

A mucocele is an epithelial-lined cavity containing mucus that fills the sinus and is capable of expansion. The majority of mucoceles (more than 70%) are situated in the frontal and/or ethmoidal sinuses.^[1] In the ethmoidal sinus, the anterior cells are most frequently affected.^[2] Pneumatization of the anterior

part of the middle turbinate is a potential site for a mucocele. The accumulation of mucous secretion and eventual secondary infection may result in a pyocele of the middle turbinate, though this is exceptionally rare. Hertzanu et al.^[3] reported the first case of pyocele of the middle turbinate in 1983. The con-

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cha bullosa mucocele with destruction of the anterior ethmoid bone and invasion to the orbit is a very rare occurrence. Armengot et al.^[4] described a patient with a large concha bullosa mucocele invading the orbit. To our knowledge, there are only nine reported cases of concha bullosa mucocele/pyocele in the literature. This paper describes a patient with a large concha bullosa pyocele invading the orbit.

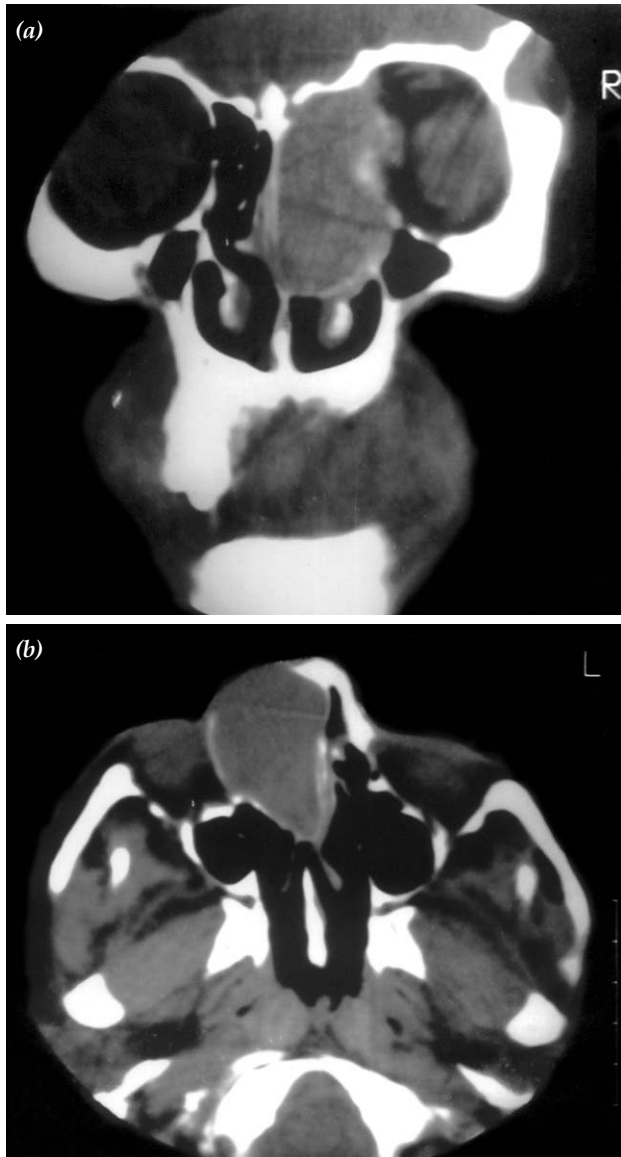


Fig. 1 - (a) Coronal computed tomography scan showing a mass with a thin shell, causing bone defects of the medial wall of the right orbit and pushing the nasal septum to the left side. (b) Axial scan shows expansion of the mass to the neighbouring nasal bone and invasion to the orbit. The mass filled the right nasal fossa and caused septal deviation.

CASE REPORT

A 48-year old woman presented with a three-week history of nasal obstruction, slight brown colored rhinorrhea, and headache. There was an external swelling of the nasal pyramid just near the medial canthus. Examination revealed right exophthalmos with bulging of the medial canthus of the ipsilateral eye. There was no diplopia. The nose was examined under local anesthesia by 0° and 30° nasal telescopes. There was a firm fleshy mass occluding the right nasal passage and arising from the lateral wall of the nose. It was red in colour and tensely cystic. There were no signs of overt infection in the nasal cavity or in the nasopharynx. The computed tomography (CT) scan showed a rounded, expansive lesion with homogeneous structure of soft tissue density. There was a thinned compact bone at its margin. It expanded against the neighbouring nasal bone, thinning and invading the orbit (Fig. 1a, b).

Following endoscopic evaluation under general anesthesia, resection of the lateral and inferior walls of the right middle turbinate was performed. The mass was found to be a large cyst filled with pus. The medial wall of the orbit was thinned by pressure necrosis and was even absent in places. The ethmoid cells were similarly filled with pus and were opened. The exophthalmos and bulging of the corresponding medial canthus immediately disappeared. After removal of the cyst, the maxillary ostium was noted to be adequately patent and no further drainage procedure was required. Histologic examination of the specimen showed the mucocele wall with a ciliary respiratory epithelium (Fig. 2). The microbiological examination of the pus from the concha bullosa yielded *Staphylococcus aureus*. The patient was discharged on the fourth day with oral antibiotics and examination in the first postoperative month showed that her nasal airway was open.

DISCUSSION

Concha bullosa is one of the most common anatomic variants of the middle turbinate in patients with sinusitis.^[5] It has two routes for drainage. Most commonly, drainage occurs through the conchal ostium, which is located near the frontal recess. Less commonly, the concha bullosa drains along the basal lamella to open directly into the adjacent air cells.^[6] The accumulation of

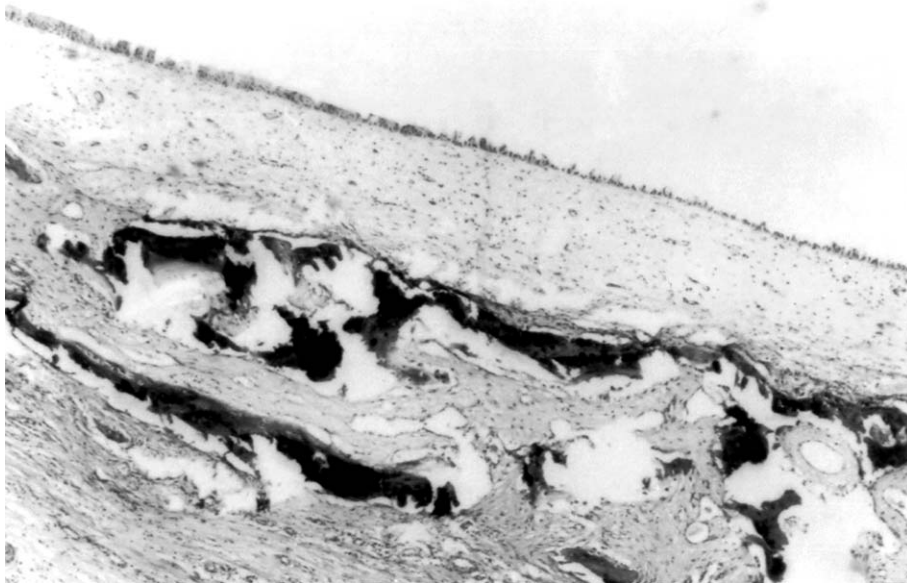


Fig. 2 - Histologic appearance of the mucocele wall with ciliary respiratory epithelium (H-E x 20).

mucus when the ostium is blocked is in the formation of a mucocele or, in the presence of an infection, a pyocele. The obstruction may be due to local inflammatory edema, nasal polyps, surgery, trauma and benign tumors.^[2] Cystic fibrosis, diabetes mellitus, and fungal sinusitis may also act as a predisposing factor in the pathogenesis of a concha bullosa pyocele. However, none of these predisposing factors was present in our patient.

Concha bullosa mucocele is exceptionally rare. There are only nine reported cases of concha bullosa pyocele in the literature.^[2-4,6-11] In the formation of a true mucocele, there is local bone destruction and expansion, especially into the superomedial orbit. Ocular disturbances are, therefore, common presenting complaints. In this case, erosion to the medial wall of the orbit was noted, resulting in compression of the orbit and exophthalmos. Diplopia was not observed.

Computed tomography plays an important role in delineating concha bullosa mucoceles as well as demonstrating surrounding bony destruction. It demonstrates the expanded middle turbinate, thinning of the compact bone at its margins, and eventual deviation of the nasal septum to the contralateral side.^[6] The finding of a bony margin on CT evaluation allows to differentiate a conchal mucocele from other nasal fossa masses.^[6]

Intranasal endoscopic surgery is an adequate management option in patients with a mucocele. In this case, satisfactory results were obtained with the use of endoscopic surgery.

In conclusion, concha bullosa may give rise to large mucoceles, which, in turn, may even invade the orbit. Computed tomography plays an important role in delineating paranasal sinus lesions as well as demonstrating surrounding bony destruction. Surgical removal of the lesion is the only treatment.

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