A Case Report of Anterior Ethmoid Mucocele Showing Intraorbital Extension

Anterior Ethmoid Mucocele

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Abstract
Mucoceles are chronic cystic lesions of the paranasal sinuses. Although they are benign, they are expansile lesions which can lead to bony destruction and compression of surrounding structures. Common complaints for admission to hospital in patients with ethmoid mucocele extending the orbital region are proptosis, diplopia and headache. Herein, we presented a case of ethmoid mucocele which extended into intraorbital region through by destruction of the lamina papyracea with its clinical and radiological findings and also with a review of the literature.

Keywords
Mucocele; Ethmoid Sinus; Computed Tomography

Özet
Mukoseller, paranazal sinüslerin kronik kistik lezyonlarıdır. İyi hüylü olmalarına rağmen etraf dokulara kemik destrüksiyonuna ve bacağı neden olabilecek expansil lezyonlardır. Ontal bölgeye yayılmış frontoetmoid mukozellilerde yaygın başvurular şokpletici göze да ilerim, diplopıa ve başağırısır. Burada, lamina papyracea üzerindeki destrüksiyonun yatırılmasının göze da ilerim ve orbitada bulguları ve aynı zamanda literatür incelemesi ile sunuldu.

Anahtar Kelimeler
Mukocele; Etmoidal Sinüs; Bilgisayarlı Tomografi

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**Introduction**

Mucoceles are slow-growing cystic lesions covered with respiratory epithelium and occur as a result of clogging of paranasal sinus ostia. They occur most frequently in the frontal sinus and less frequently in the ethmoid, maxillary and sphenoid sinuses [1-2]. Unless infected they are filled with clear yellowish mucoid secretion. Although mucoceles are benign, over time, they can show extension into the orbit and cranium by pushing the surrounding bony structures with the pressure which they cause and/or by destroying bony tissues with the effect of prostaglandin E2 and collagenases enzymes secreted from inflammatory cells [1-3]. For this reason, untreated mucoceles may be an important cause of morbidity and mortality according to their locations. In this paper, we aimed to present radiological and ophthalmological findings of a mucocele case which is originated from anterior ethmoidal region and extended into the intraorbital region with a review of literature.

**Case Report**

35 year old female patient admitted to the eye clinic with increasing complaints of diplopia, proptosis of the left eye, left-sided headache, obstruction and intermittent discharge in the left nasal passage within the last month. Visual acuity was 100/100 in both eyes. Diplopia was present in the Worth’s four dot test. Intraocular pressure and fundus examinations were normal. The left eye was proptotic and deviated to outward and also downward (figure 1) and also there was minimal upwards and inwards eye movement restriction. Laboratory tests for thyroid function were normal and orbital Magnetic Resonance Imaging (MRI) and paranasal sinuses Computed Tomography (CT) showed a cystic mass originated from paranasal region and extended into the orbital region.

In the nasal endoscopic examination, a cystic lesion covered with normal mucosa occupying the left middle meatus was observed. There was no evidence of active infection in the nasal mucosa. The patient had no history of trauma or nasal surgery. Axial CT and orbital MRI showed a cystic lesion extending from ethmoidal sinus into into the ethmoid cells and then by destroying lamina papyracea extended into orbit. This dense signaling cystic mass in the orbit located extraconally and was indenting lamina papyracea like as our case. Clinical picture in patients varies according to the location of the mucocele. In orbital involvement, patients may present with proptosis, visual loss, diplopia or headache. The most important complications are visual loss, diplopia and orbital mucopyocele. Mucocele extending into the brain from frontal sinus can cause subdural empyema, epidural or brain abscess, and pneumoencephalocele. Posterior ethmoid sinus mucoceles can cause headache, nasal occlusion, visual impairment and diplopia. Mucoceles of the sphenoid sinus can cause damage to important surrounding structures, such as the dura mater, pituitary gland, the cavernous sinus, sfenopalatine ganglion and cranial nerves. Extention into orbital region can cause restriction of eye movements, diplopia, proptosis and headache. The diagnosis is usually put forth by neuroimaging after the medical history is taken and physical examination is made. Unless infected, they are monitored as in the form of air-free, contrast-free, homogeneous and isoointense soft tissue masses with in Computed tomography (CT). Changes in the surrounding bone tissue like as expansion, thinning or erosion are better visualized with CT [3,6]. Magnetic resonance imaging (MRI) provides information about the surrounding soft tissue and it is more useful in critical locations involvement such as intracranial and intraorbital extension. Also contrast-enhanced MRI is the most preferred imaging modality in distinguishing paranasal sinus tumors from mucoceles [7]. Treatment options vary according to the case but the surgical removal or drainage is the only way to prevent intracranial and/or orbital complica-
Surgery approaches can be external, endoscopic or both. Surgical treatment consists of functional endoscopic sinus surgery, craniotomy and craniofacial approaches applied with or without sinus obliteration. More aggressive interventions may be needed for cases where middle fossa or orbita infiltrated by the mucocele[8-9].

The preference of imaging modalities (CT and MRI) is very useful in reaching a correct diagnosis of mucocele.

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