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Case Report

Mucopyocoele of the Concha Bullosa- Unusual Pathology in an Anatomical Variation

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Abstract

We present a case report of a forty-year-old female who complained of a progressively swelling mass over the right medial canthus for over a decade. The patient experienced waxing and waning swelling with dull aching pain but had no other nasal or visual complaints. Physical examination revealed a 2 x 2cm ill-defined, tender, cystic swelling with erythematous overlying skin and telecanthus. Anterior rhinoscopy indicated bilateral atrophic rhinitis, and contrast-enhanced computed tomography (CT) revealed a non-enhancing expansile lesion involving the right frontoethmoidal sinuses and the orbital space. A diagnosis of right frontoethmoidal mucocele was made, and the patient underwent endoscopic decompression. Intraoperatively, the concha bullosa was found to be continuous with the anterior ethmoid and frontal sinus due to bone erosion. Postoperatively, the patient's symptoms resolved, and nasal endoscopy at the two-month follow-up showed well-healed mucosa. This case highlights the importance of considering mucoceles in concha bullosa and emphasizes the role of CT imaging in surgical planning for these rare presentations. Functional endoscopic sinus surgery with adequate drainage is a preferred treatment option for such cases.

Keywords: Mucopyocoele; Concha Bullosa; Pathology

Introduction

A forty year old female presented with complaints of swelling over the right medial canthus for 10-12 years. The swelling was insidious, with a waxing and waning character and was associated with dull aching pain. There was no history of nasal stuffiness, nasal bleeding, altered or decreased sense of smell, nasal discharge or any visual complaints. On examination, a 2 x 2cm, ill defined, cystic, swelling over right medial canthus was noted which was tender on palpation. The skin overlying the swelling was erythematous and smooth. Telecanthus was present (Figure 1). Visual acuity assessed using a standard Snellen's chart was found to be within normal limits. Extra ocular movements were free, full and painless in all directions. Anterior rhinoscopy revealed bilateral roomy nasal cavities and dried mucopurulent discharge suggesting features of atrophic rhinitis. There was an enlarged middle turbinate abutting the septum medially and to the lateral wall on right side with non-visualisation of middle meatus (Figure 2). Contrast enhanced computed tomography (CT) of nasal cavity and PNS was performed and showed a non-enhancing expansile lesion with 1.5 x 1.3cm of orbital component and 2 x 2.3 x 2.5cm of ethmoidal component involving right frontoethmoidal sinuses extending into the orbital space and compressing right medial rectus muscle. Bony remodeling and demineralization were noted in the right frontoethmoidal region and lamina papyracea (Figure 3).

A diagnosis of a right frontoethmoidal mucocele was made, and the patient was taken up for endoscopic decompression. Intraoperatively, when the concha bullosa was opened, copious amount of pus was released (Figure 4). The lateral wall of the concha bullosa was resected. The concha bullosa was continuous with the anterior ethmoid and frontal sinus due to bone erosion with expansion of ethmoidal cells and supraorbital cells. Right maxillary sinus was contracted and lamina papyracea was eroded. Sphenoid sinus was normal.

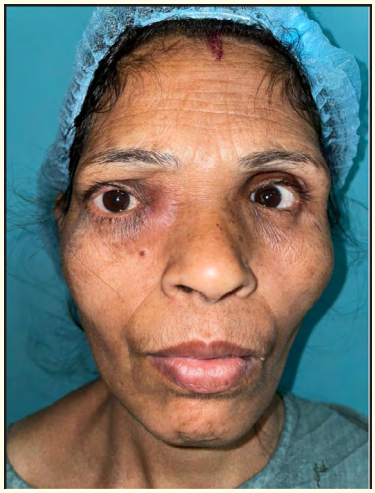

Figure 1: Pre-operative photograph showing size and location of the swelling.

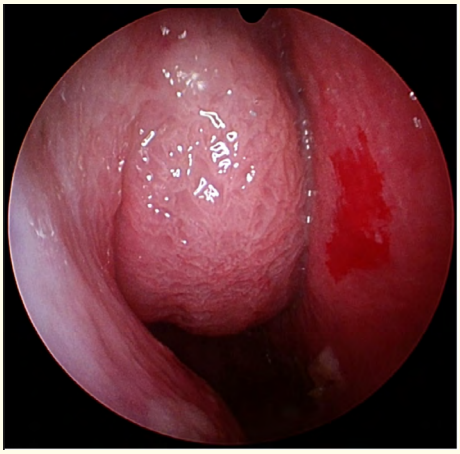

Figure 2: Endoscopic view- Right nasal cavity shows concha bullosa. Note the deviated septum and middle turbinate in contact with the septum.

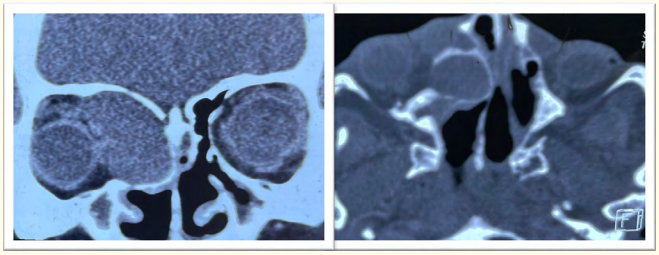

Figure 3: Contrast enhanced computed tomogram, coronal and axial sections showing intraorbital extension of the lesion.

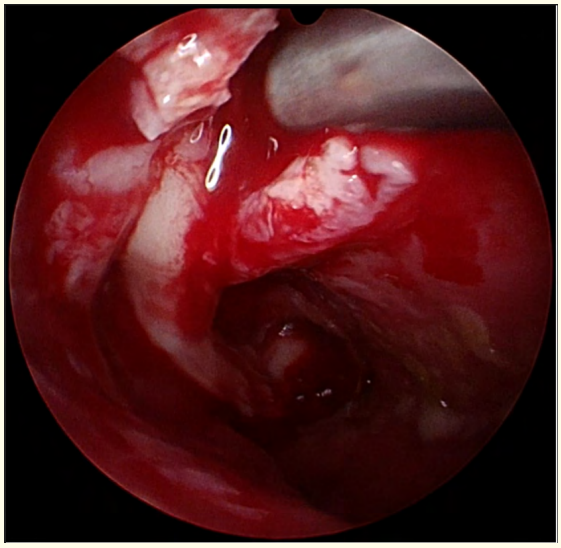

Figure 4: Intraoperative Endoscopic view- Pus evacuated after opening the concha bullosa.

Post operatively, the patient was followed up till two months. There was clinical resolution of symptoms. Nasal endoscopy was done at two months follow up which revealed well healed mucosa.

Discussion

Concha bullosa can be either unilateral or bilateral and is usually present in 14 to 53% of the population (10). Unless large enough to obstruct the sinus ostia, it is often asymptomatic.

Mococoeles of the paranasal sinuses are considered as benign true mucus containing cysts. Pyocele, an infected mucocele is formed secondary to bacterial infection caused in an obstructed

ostium following trauma, polyps, surgery, or a tumour [6]. The majority of mucopyoceles occur in the frontoethmoidal complex and have a tendency to expand by local bone destruction and remodelling by stimulation of fibroblasts and release of bone-resorbing factors. Expansion occur mainly into the superomedial orbit, causing swelling and ocular disturbances.

Anterior rhinoscopy and endoscopy provide limited information about a conchal mass and its obstructive effect on the nasal passage. With the advancement of cross-sectional imaging, the diagnosis of various intranasal masses has been greatly facilitated. Axial and coronal CT images yield valuable information about the extent and margins of the mass the nasal cavity, nasal and paranasal structures. Magnetic Resonance imaging helps in diagnosing the intracranial and intraorbital extension and complications of PNS diseases. Radiologic imaging is always used in conjunction with endoscopy for determining the diagnosis [6].

The differential diagnosis of massive concha bullosa mucopyocele consists of neoplasia and various benign lesions of the nose. This has been reported previously in a case of massive concha bullosa masquerading as an intranasal tumor and on a case of concha bullosa mucocele with invasion of the orbit. Concha bullosa pyocele and ethmoidal pyocele or mucocele should also be differentiated radiologically and intraoperatively. A concha bullosa mucopyocele shows a prominent soft-tissue mass well circumscribed by the bony framework of the concha bullosa. Endoscopically it reveals an enlarged body of the middle turbinate that is in contact with nasal septum medially and bulges laterally into the nasal wall [7]. In our case both CT findings and endoscopic view supported the diagnosis of concha bullosa mucopyocele. Surgery is the mainstay treatment with a goal to drain and eradicate the disease and to re-establish ventilation of the sinus and prevent recurrences. Functional endoscopic sinus surgery with marsupialization of the cyst and adequate drainage is the preferred surgery due to its minimally invasive nature, preservation of the bony structure, shorter operation time, avoidance of external incisions and a lower hospitalisation cost.

Conclusion

A concha bullosa may develop a mucocele or mucopyocele. In a mucopyocoele, there is expansion, local bone destruction ,remodelling and thus these patients can present with extranasal complications. Computed tomography is a good imaging modality to evaluate middle turbinate pathology and to formulate a road map for surgery. Mucopycocoeles are very rare in the concha bullosa and must be considered as a differential in symptomatic patients with a hyperemic nasal mass.

Patient's Perspective

I had a swelling on my face for almost a decade. When it did not get better and kept increasing, my family members brought me to the hospital. Here I was advised some tests which showed a mass in my nose. I was advised surgery to treat the condition. Though I was afraid of surgery initially, I wanted to get cured. After surgery, my swelling has reduced and I am free of pain. I am lucky that it was diagnosed and treated before it affected my eyesight.

Disclosure of Interests

The authors declare no conflicts of interest.

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