Mucocele of Concha Bullosa: A Case Report

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ABSTRACT

MUCOELE in middle turbinate is rare occurrence. Most common site is frontal sinus. Next comes the ethmoid sinus. It occurs due to obstruction of drainage pathway of sinuses causing retention of secretion lead to its formation. It commonly present with very common complaints similar to other diseases of nose such as nasal obstruction and headache. Pre-endoscopic era it was very difficult to examine it properly, CT is the investigation of choice. It was successfully treated endoscopically.

Keywords: middle turbinate, mucocele, concha bullosa

INTRODUCTION

There are various anatomical variation in nasal cavity, concha bullosa is the most common. The aerated middle turbinate is called concha bullosa and may be unilateral or bilateral. It is detected in 10% of cases and symptomatic in 30%.

Concha bullosa causes obstruction of drainage of sinuses that leads to mucosal lining inflammation of sinuses results in nasal obstruction, sinusitis, post nasal discharge, headache, snoring and fever. This will require surgical correction to restore a normal airway and sinus ventilation and drainage, obstruction of a concha bullosa can results in mucocele formation and secondary infection of it results in mucopyocele. Here we report a case of mucocele mimicking an intranasal mass in a thirty-five-year-old man treated endoscopically.

CASE REPORT

A thirty-five-year-old male presented with complaints of left side nasal obstruction since one and half year. It was gradually progressive and associated with headache, decreased sense of smell and watery discharge from left side nasal cavity for four months. There was no history of nasal allergy, trauma, blood stained discharge, snoring, fever and sinus surgery. A detailed general physical examination, systemic examination along with local examination was


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done. Nasal endoscopy was carried out to study the lesion and Furstenberg’s sign was negative. On anterior rhinoscopy- lobulated spherical mass occupying entire left nasal cavity, cough impulse was negative, mass sensitive to touch does not bleed on touch, probe can be pass around the mass but not superiorly.

CT shows hypertrophy of left middle turbinate. Routine blood investigations, chest x-ray, ECG and NCCT of Nose and paranasal sinus was carried out to study the detail of the anatomical abnormality and rule out any intracranial connectivity.

Patient was shifted in operation theatre after preanesthetic checkup. The operative procedure was carried out endoscopically and using thick bore needle cheesy off-white material was aspirated and diagnosis was confirmed. Medial side of middle turbinate was resected under local anesthesia and the discharge was sucked out. Hemostasis was achieved and antibiotic soaked Abgel nasal packing was done. Patient was shifted to postoperative recovery room. Patient was discharged subsequent day and was called for follow-up after one week. All the complaints were resolved completely. Follow up was done at 1 month and 3 months. No recurrence found. Patient was relieved of all previous symptoms.

DISCUSSION

Embryologically middle concha is derived from medial part of the ethmoid bone. Pneumatization of the middle concha almost always occur from the anterior ethmoidal cells. Pneumatization through the posterior air cells or both can occur but is very rare. Concha bullosa is the pneumatization of the middle turbinate and one of the most frequent variants noted. Infrequently, pneumatization can be found in the superior and inferior turbinate.\(^6\)

Image 1: CT scan coronal cut shows that the mucocele obliterating left nasal cavity and extends to left inferior turbinate in left nostril.

Table 1: Gender and SNAQ-11 score

Image 2: In sagittal cut, the huge mucocele is also seen obliterating the left nasal cavity.

Image 3: CT scan shows that the mucocele in left nasal cavity, as shown in this axial cut.

Fig 1: various sections of CT scan showing mucocele of middle turbinate

A- Image shows thick white cheesy

B-post-op image with clear nasal cavity

Fig 2: A- Intra-operative and B-post-operative images

Pneumatization of the concha was classified by Bolger et al\(^7\) into 3 types:

1) Lamellar type concha bullosa: pneumatization is localized to the vertical lamella of the middle turbinate.
2) Bulbous type concha bullosa: pneumatization of the inferior bulbous part of the middle turbinate.
3) True or extensive type concha bullosa: is pneumatization of both the vertical lamella and the inferior part of the middle turbinate.
Though the incidence of concha bullosa is common (14-53%), it is rare for mucocele to occur in them. Studies reveal that concha bullosa has its own mucociliary clearance mechanisms. Commonly it drains into frontal sinus recess. Any obstruction to their drainage channels can potentially lead to formation of mucoceles. Commonest site for mucocele is frontal sinus followed by ethmoids, then sphenoid and maxillary sinuses.

Headache and nasal obstruction and rhinorrhea were the most common symptoms with a nasal mass finding on physical examination.

Mucoceles are epithelium lined mucus filled cystic masses and results from obstruction of drainage. Mucus accumulation causes enlargement of the mass with associated sinus bony wall expansion that is considered to be sine qua non for this entity. Prostaglandins and collagenases aid in osteolysis and further enhance the expansile nature of the cysts.

Mucocele occur when concha bullosa is filled with fluid and pus. It occurs due to blockade of opening of concha bullosa due to which air flow between concha bullosa cavity and surrounding structure, such as the frontal recess, ethmoidal cells or middle meatus is obstructed. In concha bullosa mucoceole epithelium remains intact. Thickening of mucosa and polyp formation is rare. It occurs when inner surface of concha bullosa is lined with mucous membrane and inflammatory process occur on it.

When comes in contact with nasal mucosa can lead to headache even in absence of Sino nasal inflammation. CT is the preferred imaging modality where mucocele appears as an expanded, airless sinus filled with homogeneous material. The walls of the sinus may be either normal or remodeled, with thickening, erosion to various degrees often within the same sinus. The distinction between a mucocele and a mucous retention cyst can be made by the presence of air outlining the upper surface of the retention cyst.

Hence, a good radiological examination with a high degree of suspicion is an invaluable tool for early diagnosis of this condition. MRI is superior than CT for soft tissue study. The advantages of endoscopic mucocele marsupialization is the preservation of the bony framework of the sinus involved and decreased operative time, no external incisions and decreased hospitalization costs as the surgery may be performed on an out-patient basis. With this approach the mucosal lining and function of the sinus are preserved.

In our case we did endoscopic guided medial excision of middle turbinate and antibiotic soaked ABgel packing.

**CONCLUSION**

Concha Bullosa is rare entity. On anterior rhinoscopy it can be confused with benign nasal mass. We can get 3D information about this unapproachable area with NCCT Nose & PNS, so that we can assess easily. Once diagnosed it can be easily managed with endoscopic treatment.

**REFERENCES**