

# Giant Concha Bullosa with Secondary Maxillary Sinusitis.

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## ABSTRACT

Concha bullosa is a frequently observed anatomical variant of lateral nasal wall characterized by pneumatization and enlargement of middle turbinate. Concha bullosa is usually asymptomatic, but sometimes it can cause nasal obstruction and paranasal inflammation. Studies on association of concha bullosa with paranasal sinusitis have given contradictory findings. Here we are reporting a case of giant concha bullosa with secondary maxillary sinusitis in a 24 year old patient.

**Keywords:** Concha bullosa, FESS, OMC, middle turbinate, sinusitis.

## INTRODUCTION

Concha bullosa is one of the most common anatomical variant of middle turbinate with varied definitions among studies. Some authors have defined concha as any pneumatization (aeration) of middle turbinate, even if the aeration is restricted to upper non-bulbous portion of the turbinate. Some others have restricted the definition of concha bullosa to those cases where in aeration extends caudally into bulbous portion of middle turbinate. Stallman et al has defined concha as a middle turbinate pneumatization extending caudally at least 50% of vertical height of middle turbinate.<sup>[1,2]</sup> Various studies have reported an incidence of concha bullosa ranging between 14-53%.<sup>[3]</sup> The association of concha bullosa with paranasal sinus diseases is still debated.<sup>[2, 4-8]</sup> The first case of massive concha bullosa causing secondary maxillary sinusitis was reported by Lee et al in 2008.<sup>[3]</sup> Here we are reporting a case of unilateral maxillary sinusitis secondary to a giant concha bullosa

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## CASE REPORT

A 24 year old female presented to the outpatient unit of our department with complaints of right side nasal obstruction and head ache for several months. On anterior rhinoscopy, the nasal mucosa was appearing congested, the middle turbinate was hypertrophied on the right side almost filling the nasal cavity and

there was a septal deviation to the left side. A diagnostic nasal endoscopy (DNE) was done for the patient. On endoscopic examination, thick mucopurulent discharge was present in the middle meatal region. With a provisional diagnosis of right hypertrophied middle turbinate with left side septal deviation, the patient was given a course of antibiotic, nasal decongestant, mucolytic and analgesic and reviewed after 1 week.

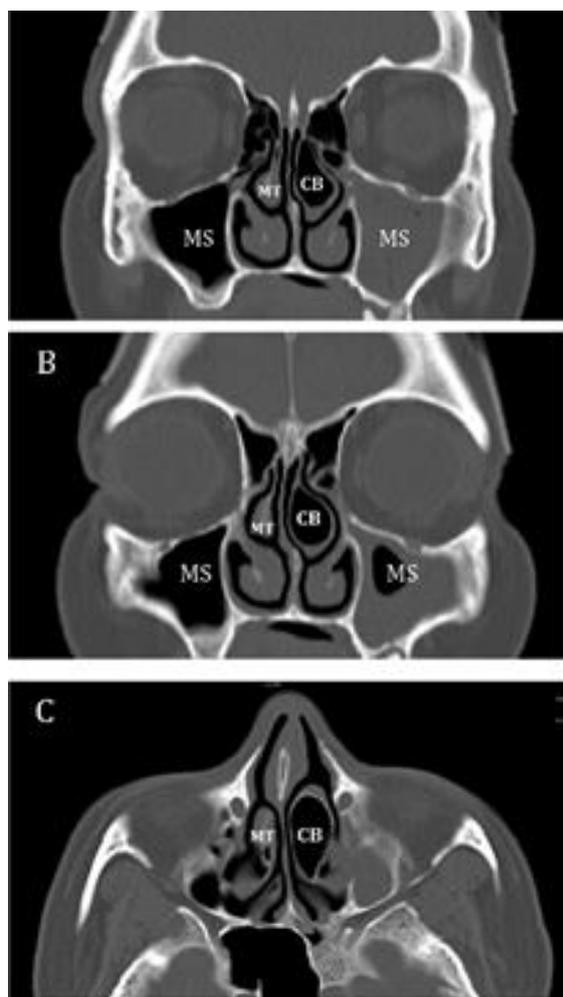
At the end of 1 week, Computed Tomographic (CT) Scan of nose and paranasal sinuses was done with 0.65mm cuts in axial and coronal planes. The scans revealed a giant concha bullosa causing obliteration of left osteomeatal complex (OMC) and left maxillary sinusitis [Figure 1]. The patient underwent a functional endoscopic sinus surgery (FESS) under general anesthesia. During the surgery, the lateral lamella of concha was excised. The medial lamella was trimmed and sutured to septal wall for stabilization and to prevent adhesion with lateral wall obscuring the OMC post operatively. A middle meatal antrostomy (MMA) was performed for the patient. Histopathologic reports of the excised tissue reported only features suggestive of chronic inflammation. Patient was discharged on 3rd day and was called up for review at 2nd week, 6th week, 3rd month and 6th month.

The patient was symptom free during the follow up periods. Nasal breathing and headache were significantly improved. An endoscopic examination of nasal cavity showed clear nasal passages with an adequate MMA.

## DISCUSSION

Concha bullosa is a very common anatomical variation of the middle turbinate with an incidence

ranging from 14-53%.<sup>[3]</sup> The pneumatization of middle turbinate can originate from frontal recess, anterior ethmoidal cells or directly from middle meatus.<sup>[3]</sup> Bolger et al classified pneumatization of middle turbinate into three different groups; Lamellar concha is characterized by pneumatization of vertical lamella, Bulbous type defined by pneumatization of bulbous segment and Extensive type defined as pneumatization of both components.<sup>[9]</sup>



**Figure 1:** (A) Coronal section at the level of bulbous portion, (B) Coronal section at level of lamellar portion, (C) Axial section. MS – Maxillary sinus, MT – Middle turbinate, CB – Giant Concha bullosa.

The association of concha bullosa with paranasal sinus diseases is still debated.<sup>[2, 4-8]</sup> A recent study by Javadarshid et al has concluded that there exists no significant relation between the presence of concha

bullosa and paranasal sinusitis.<sup>[8]</sup> However, in our case the giant concha bullosa was obstructing the left OMC causing ipsilateral maxillary sinusitis.

A proper DNE and CT Scan are essential for diagnosis and surgical planning in patients of chronic rhinosinusitis. A thorough knowledge of normal anatomy of nasal cavity and its variations are critical in order to navigate safely through the nose during basic endoscopic sinus surgeries or anterior skull base surgeries to avoid complications. In cases of giant concha bullosa causing secondary sinusitis, the treatment of choice is FESS with resection of lateral wall of concha.

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