

## Case Report

# Septated concha bullosa in an antrochoanal polyp patient

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### ABSTRACT

The term of septated concha bullosa has been described recently and it is an uncommon pneumatization anomaly of the middle turbinate. Solitary, benign soft tissue masses originating at the maxillary sinus and extending to the nasopharynx are called antrochoanal polyps. Antrochoanal polyp may be accompanied by concha bullosa. However, combination of septated concha bullosa and antrochoanal polyp has never been reported to the best of our knowledge. This paper presents a 45-year-old male patient who has a combination of septated concha bullosa and antrochoanal polyp.

**Keywords:** Antrochoanal polyp, Concha bullosa, Endoscopic sinus surgery, Septated

### INTRODUCTION

Concha bullosa (CB) is a pneumatization of the middle concha at several degrees and it is one of the most frequently seen variations of the nasal wall.<sup>1</sup> The term of septated CB has been described recently and it is an uncommon pneumatization anomaly of the middle turbinate. It was first described by Yanagisawa et al. In 2008.<sup>2</sup> Solitary, benign soft tissue masses originating at the nasal cavity and extending to the nasopharynx are called choanal polyps. They most frequently originate in the sinus and are termed antrochoanal polyps (ACP). ACP may be accompanied by CB.<sup>3,4</sup>

However, combination of septated CB and ACP has never been reported to the best of our knowledge. This paper presents a 45-year-old male patient who has a combination of septated CB and ACP.

### CASE REPORT

A 45-year-old male patient presented to our clinic with the symptoms of nasal obstruction and postnasal discharge that had been present for 2 years. His anterior

rhinoscopy and endoscopic nasal examination showed middle concha hypertrophy in the right nasal cavity, deviation in the left septum and a solitary polypoid mass extending to the choana. His paranasal sinus tomography scan was obtained. Soft tissue density originating in the antrum and extending to the choana, which was consistent with ACP, was observed on the left side.

An extensive-type CB with septation in the middle concha was observed on the right side and a lamellar type CB was observed on the left side.

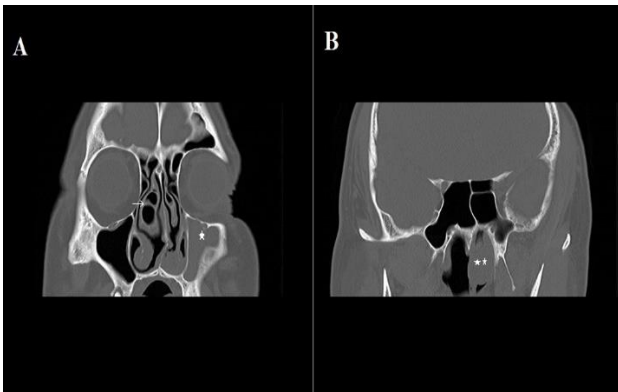
The patient underwent transnasal endoscopic surgery following septoplasty under general anesthesia. Lateral lamellar excision was performed on the middle concha on the right side. Following uncinectomy on the left side, the maxillary sinus ostium was expanded, and the ACP was totally excised including its cystic component in the antrum.

The patient did not develop any complications and he completely recovered from nasal obstruction in the post-operative period. No recurrences were detected in the 1-year follow-up of the patient.

## DISCUSSION

The middle turbinate is an important landmark of the lateral nasal wall. It is associated with many functions of the nasal cavity, including olfaction, humidification, lubrication of the upper airways, regulation of airflow and temperature and filtration.<sup>5</sup> Different types of anatomic variations of the middle turbinate have been described in the literature as pneumatized, lateralized, hypoplastic and hypertrophic, paradoxically curved, secondary and accessory, bifurcate and trifurcate middle turbinate.<sup>6-8</sup> CB is the most frequently encountered anatomical variations of the middle turbinate. Bolger et al. classified CB as lamellar, bullous and extensive depending on the degree of pneumatization and localization.<sup>1</sup>

Accordingly, they defined pneumatization on the vertical lamella of the middle concha as lamellar type, on the inferior segment of the middle concha as bullous type and on the entire middle concha as extensive type.<sup>1</sup> Our case had a CB of the extensive type. Septated CB has been rarely seen in the rhinological practice. Septated CB was first described by Yanagisawa et al. In 2008 and the second one was published by Peric et al in 2009.<sup>2,9</sup> Triple septated CB was first described by San ve ark in 2013.<sup>10</sup>



**Figure 1: A) Coronal CT scan showing a bony septum inside the extensive type CB cavity in the right side (arrow), lamellar type CB, septal deviation with spurting and maxillar soft tissue mass (star) in the left side. B) The soft tissue mass is demonstrated to extend towards the choana (double star).**

CB is generally asymptomatic; however, it may become symptomatic depending on the degree of pneumatization or its relationship with adjacent structures. When it is extremely pneumatized, it may disrupt the nasal airflow, thereby resulting in nasal obstruction, sinusitis attacks in cases where it disrupts the ventilation and drainage of ostiomeatal unit and contact headaches as a result of contact with the nasal septum. Our case only had nasal obstruction secondary to extreme pneumatization. Yanagisawa et al reported a case where CB was accompanied by recurrent ethmoid sinusitis.<sup>2</sup>

Turbulent air flow and gravity are local factors that may play a role in the development of CP. Septum deviation and CB changes the air flow within the nose. Balıkcı et al. identified septum deviation in 50% and CB in 17.6% of ACP patients.<sup>3</sup> As for Tatlıpınar et al, they identified septum deviation in 60.86%, CB in 13.04% of the patients.<sup>4</sup> As for the presence of a CB with septa in an ACP patient, it has not been reported so far. We are convinced that the fact that our case had septal deviation on the same side as ACP and extensive-type CB on the opposite side disrupted the air flow, thereby playing a role in the development of ACP.

Given that middle concha surgery is disposed to complications due to the close relationship between the concha and skull base, a very good preoperative assessment should be carried out. Especially the septations seen in the concha may cause the anatomy to become more complex, thereby leading to increased complication rates. Any septations in the concha and other sinonasal pathologies that may accompany it should be well identified in the paranasal sinus tomography scan to be taken preoperatively.

## CONCLUSION

In conclusion, septated concha bullosa is a very rarely seen anatomic variation. Sinonasal pathologies such as antrochoanal polyp may be simultaneously present. Determining any the septations and accompanying sinonasal pathologies in the concha via sinus tomography is of essential importance to avoid complications.

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