CASE REPORT

Giant concha bullosa

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SUMMARY

Concha bullosa is the most frequently encountered anatomical variation of the lateral nasal wall characterised with pneumatisation of the middle concha. The incidence of middle concha bullosa varies between 14% and 53%. Patients may often complain of nasal congestion and may in some cases suffer episodes of recurrent acute rhinosinusitis. In this article we present a case of nasal obstruction with an unusually large concha bullosa.

BACKGROUND

Concha bullosa is the most frequently encountered anatomical variation of the lateral nasal wall characterised with pneumatisation of the middle concha. The incidence of middle concha bullosa varies between 14% and 53%.¹ The middle concha plays a role in the sense of smell, air humidification and airflow regulation.² The focus responsible for the pneumatisation of the middle concha is not clear; frontal recess, middle meatus, lateral sinus, ethmoid infundibulum and agger nasi are the possible regions.³⁻⁴ Concha bullosa of the middle turbinate is usually asymptomatic, but sometimes it may cause nasal obstruction and inflammatory sinus disease.⁵

CASE PRESENTATION

A 35-year-old female patient presented to our clinic with long-term nasal obstruction, headache and frequent attacks of acute sinusitis. On the anterior rhinoscopy a mucosal surfaced mass, almost completely filling the right nasal cavity, reaching the nasal floor and compressing the right lower concha was seen. The concha bullosa expanded to the anterior ethmoid cells, deviating the nasal septum to the left and compressing the right lower concha (figure 1).

INVESTIGATIONS

The CT scan revealed a giant concha bullosa causing obliteration of the right nasal cavity (figure 2).

DIFFERENTIAL DIAGNOSIS

Turbinate hypertrophy, benign nasal polyposis and sinonasal neoplasia.

TREATMENT

Functional endoscopic sinus operation was performed under general anaesthesia. The lateral wall of the concha bullosa was excised. The length of the middle concha reaching the nasal floor on a vertical plane was reduced. The middle concha was sutured to the septum for stabilisation. Suturing is often preferred in our experience because this technique prevents osteomeatal complex obliteration.

Figure 1 Endoscopic examination showing the concha bullosa expanded to anterior ethmoid cells, deviating the nasal septum to the left (star) and compressing the right lower concha (arrow).

The middle turbinate had pneumatised in preference to the anterior ethmoid cells.

OUTCOME AND FOLLOW-UP

No perioperative or postoperative complications were seen. On the postoperative follow-up, the patient had no symptoms and the nasal passages were clear. Nasal breathing and headache were significantly improved after the surgery and the patient was free of nasal problems during a 6-month follow-up.

DISCUSSION

The incidence of concha bullosa in patients with symptomatic sinus diseases on paranasal CTs is 34%.¹ Bolger *et al* divided the middle concha pneumatisation into three groups. Lamellar type characterised with pneumatisation of the vertical lamella, bulbous type characterised with

Figure 2 Coronal CT image showing giant concha bullosa causing obliteration of the right nasal cavity.

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To cite: Derin S, Deveer M, Sahan M, *et al*. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-200524

pneumatisation of the bulbose segment and extensive type characterised with pneumatisation of both components.⁶

We present a case of extensive concha bullosa type which is seen very rarely. This anatomical variant of concha disrupted the normal nasal airflow and resulted in frequent episodes of acute sinusitis. The giant concha bullosa is attached directly to the skull base superiorly and is attached to the lamina papyracea laterally. Also, the anterior ethmoid cells were undeveloped and the concha bullosa reached the basal lamella. Unexpected complications may occur due to the altered anatomy.

Consequently, a detailed endoscopic examination, paranasal sinus CT inspections and anomaly detection are of utmost importance. The knowledge of the anatomical variations of the nasal wall

is crucial for the surgeon who is performing the endoscopic sinus surgery. During endoscopic surgery, preoperative identification of the anatomic variations of the lateral nasal wall will guide the surgeon. It will also lower the rate of complications.⁷

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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Learning points

- Unusually large variations in the size of pneumatised middle turbinates can occur and cause significant nasal obstruction.
- The knowledge of the anatomical variations of the nasal wall is crucial for the surgeon who is performing the endoscopic sinus surgery.

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