Author's response to reviews

Title: A presentig with concha bullosa in another concha bullosa: a case report

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Author's response to reviews: see over
**Author’s response to reviews**

**Title:** A presenting with concha bullosa in another concha bullosa: a case report

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**Author's response to reviews:** see over
Reviewer’s report

**Title:** A concha bullosa inside another concha bullosa: a case report

**Version:** 2 **Date:** 4 July 2011

**Reviewer:** Lum Chee Lun

Which of the following best describes what type of case report this is?: Unexpected or unusual presentations of a disease

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: No

Is this case worth reporting?: Yes

Is the case report persuasive?: No

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: No

Will the case report make a difference to clinical practice?: No

Is the anonymity of the patient protected?: Yes

**Comments to authors:**

A well written report of a rare condition.

**Quality of written English:** Acceptable

**Declaration of competing interests:**

I declare that I have no competing interests

*Reviewer #1 has no suggested changes for the manuscript.*
Reviewer's report

Title: A concha bullosa inside another concha bullosa: a case report

Version: 2 Date: 4 August 2011

Reviewer: kin choo pua

Reviewer # 2

Which of the following best describes what type of case report this is?: Unexpected or unusual presentations of a disease

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: No

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

Interesting case,

Discussion was too long.

Discussion was clipped. References reduced from fifteen to eleven.

Fields written by red were removed.

Discussion and references corrected as follows.
Discussion

Significant improvements have been made in paranasal sinus surgery along with the advances in endoscopic techniques. However, frequent and miscellaneous anatomic variations of this region increase the risk for possible complications of ESS. Axial and coronal paranasal sinus CT imaging, in addition to endoscopic examination, is of great importance both for identifying the pathology and for defining regional anatomy and variations prior to the surgery. The ethmoid bone is undoubtedly one of the most complex anatomic structures, and the cells are generally referred to according to the site of drainage as the anterior and posterior ethmoidal cells. However, the anterior and posterior ethmoidal cells as well may show a number of variations. The anterior and posterior ethmoidal cells are considered responsible for the pneumatization of the middle concha in approximately 55% and 45% of concha bullosa cases, respectively [1,2].

Bolger et al. [2] classified pneumatization of concha bullosa into three groups. Pneumatization localized to the vertical lamella of the middle concha was referred to as “lamellar”, pneumatization localized to the inferior (or bulbous) pair of the concha was referred to as “bulbous”, and extensive pneumatization to both the vertical lamella and the bulbous part of the of the concha was referred to as “extensive” concha bullosa. The degree of pneumatization is directly proportional to the severity of symptoms. While lamellar and bulbous types are usually asymptomatic, extensive bulbous concha manifests symptoms [2]. While Bolger et al. [2] reported the incidences of extensive, lamellar, and bulbous concha bullosa to be 15.7%, 46.2% and 31.2%, respectively, Tonai et al. [3] reported the incidences of extensive, lamellar, and bulbous concha bullosa to be 52%, 28% and 19%, respectively.

Scribano et al. [4] reported a large ethmoidal bulla in 5.4% of the cases. Concha bullosa is the most common paranasal anatomic variation that causes nasal obstruction and sinusitis. Its
prevalence ranges between 8% and 60% [1-4].

Based on intraoperative video images, Setliff et al. [5] classified 214 ethmoidal bullae in three main categories as simple (47%), compound (26%) and complex (27%) in reference to the association with other ethmoidal cells. Presence of another cell in the ethmoidal bulla was referred to as complex bulla [5]. Due to the lack of a distinct posterior wall, Wright and Bolger [6] suggested that the ethmoidal bulla was not a separate cell but rather a bony lamella.

The present paper reports an extremely rare form of concha bullosa. This form of concha bullosa contains another structure inside (the ethmoidal bulla). The patient had both such a large concha bullosa in the right side that obstructed the nasal passage and a large ethmoidal bulla invaginating into the concha bullosa. Although the same variation was seen in the left side, another cell was observed in the giant concha bullosa.

Asymptomatic concha bullosa does not require surgical intervention; however, medical treatment is based on using antibiotics, antihistamines, and nasal sprays containing topical steroids. Topical decongestants can be given to provide short-term symptomatic relief.

The definite treatment of concha bullosa is surgical. Although asymptomatic concha bullosa does not require treatment, concha bullosa cases that cause obstruction of the ostiomeatal complex and disease in the paranasal sinuses, or that cause airway obstruction only are treated via ESS. Resection of the lateral lamella of the middle concha is an effective and the most commonly used surgical technique [5]. Bhatt [6] advocated being more conservative in concha surgery and recommended submucoperiosteal resection. In this case, the lateral segments of both bullous conchae were excised endoscopically, and septoplasty was performed. On her control visit 18 months postoperatively, it was observed that her nasal obstruction and headache complaints were completely relieved. Concha bullosa may not only progress asymptptomatically, but may also present with symptoms such as nasal obstruction,
headache, and hyposmia by means of completely filling the nasal cavity. Such a large concha bullosa may impair ventilation and drainage of the ostiomeatal complex and thus, lead to sinus pathologies.

The relationship of concha bullosa with sinusitis and septum deviation has been a subject of many studies. Aktas et al. [9] established a significant relationship between unilateral concha bullosa and the frequency of nasal septal deviation. Uygur et al. [10] suggested that septal deviation did not give rise to the formation of concha bullosa, but augmented the pneumatization of the middle turbinate depending on the degree of deviation angle.

Stallman et al. [7] as well found a strong association between the presence of a concha bullosa and contralateral deviation of the nasal septum, but did not demonstrate a causal relationship because of air passage between concha bullosa and the nasal septum. Moreover, the authors suggested that this association depended on neither the size of concha bullosa nor the degree of septal deviation. Yousem et al. [8] reported that the size of concha bullosa, but not its presence, may cause sinusitis. Mucociliary transport of concha bullosa is often directed to the frontal recess, but rarely to the adjacent air cells and to the hiatus semilunaris. When two mucociliary surfaces contact with each other for any reason, mucociliary transport is inhibited in the area of contact. Various studies in the literature have shown that the obstruction of the ostiomeatal complex due to concha bullosa also plays a role as a predisposing factor in sinusitis development [9-11].

References


Extra cut of CT scan will be more comprehensive.

**One more Coronal paranasal computed tomography scan image added.**
English spelling corrections were made according to the rules.

Declaration of competing interests:

'I declare that I have no competing interests'