A 23-year-old woman presented with right-sided nasal obstruction with sticky mucoid discharge for 3 years, associated with progressing right-sided proptosis since 1 year. Nasendoscopy showed polypoid mass in the nasal cavity and middle meatus. Computed tomography (CT) scan revealed opacities in the right nasal cavity and all the ipsilateral sinuses, with multiple prominent radio-dense areas in the maxillary sinus and ethmoids (Figure 1). The disease was extensive enough to push the septum medially and lamina papyracea laterally. Another cut at the level of the middle turbinate (B: coronal; bone window) shows a small concha bullosa on the left side (arrow). However, no discernible anatomic landmarks can be noted on the affected side (A and B).

At surgery, the maxillary sinus and the ethmoids were found to harbor dense concretions of fungal debris, polyps, allergic mucin, and pockets of pus. During the endoscopic procedure, presence of a small bulbous concha in the right middle turbinate was realized; it did not interfere with procedures in the middle meatus, especially during debulking the huge disease load. However, because of some difficulty to address the medial-most portion of the ground lamella and the adjacent bony septa of the ethmoids, and also considering the extensive nature of the disease, a lateral partial turbinoplasty was decided. On opening up the concha, it was found to be filled with dense fungal mud and inflamed, edematous mucosa (Figure 2; video). The lateral lamella was completely resected and the fungal debris carefully removed. The ethmoids were then fully cleared, and the surgery was completed after the rest of the sinuses were meticulously checked for disease.

Concha bullosa connotes migrated anterior ethmoid cell characteristically pneumatizing the anterior third of middle turbinate. It is a common anatomic variation and remains innocuous when small. However, a large concha might compromise the middle meatus and frontal recess area, and hinder the normal transport of secretions from the sinuses.1,2 Also, it results in mechanical hindrance for the endoscopic surgeon when access to the middle meatus and sinuses draining into the ethmoidal infundibulum is attempted.2 Accordingly, the lateral lamella of the concha often needs to be resected. The decision to resect and the extent of resection are situational and need-based. This step is often bypassed when the concha is

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much smaller or rudimentary radiologically and does not cause mechanical or visual obstruction during endoscopic surgery. However, as demonstrated from the present experience, such a concha, even if small and incidental, might harbor the disease and result in its persistence if not addressed. Such is especially true for mycotic infections where meticulous and complete debridement is the rule, and when such fungal infestation is as extensive as in this patient. Considering the unpredictable migratory pattern of anterior ethmoid cells, the more common variants, like the agger, frontal cells and concha bullosa should be inspected for disease in the CT scan and addressed during surgery. A concha bullosa should be inspected, and if appropriate, explored through lateral partial turbinoplasty in extensive sinonasal diseases. For a small concha bullosa, I would prefer lateral partial turbinoplasty over crushing, because any hidden disease cannot be addressed adequately with the latter procedure. During surgery in the present patient, attention was primarily on debridement of the fungal load from the sinuses, and the small concha was initially ignored. Furthermore, the disease bulk often does not allow to perceive a small concha in the CT scan, as happened in this patient. In such cases, a high index of suspicion should be maintained during surgery to purposefully look for a concha, especially when there is one on the opposite side (a concha bullosa can be bilateral in ~40% cases). If present, it should be explored to exclude hidden disease.

Author’s Note
This article has a short video. It has been made available at the Editorial Office of the journal during the submission process.

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Figure 2. Endoscopic views (A and B) within the incidentally found small concha bullosa on the diseased (right) side following partial removal of the lateral lamella (LL) show dense fungal concretions (white arrow) and edematous mucosa (black arrow). L, lateral nasal wall; MT, middle turbinate; the asterisk shows the inside view of the concha bullosa.