An 81-year-old woman presented with a 6-month history of anosmia to the Department of Otolaryngology of our university hospital. She complained of rapid loss of smell. She did not have a history of upper respiratory illness, relevant head trauma, toxic exposures, nasal obstruction, nasal surgery, or medication.

Her olfactory test (the Korean version of the Sniffin Sticks test) performed in the outpatient office revealed anosmia. Nasal endoscopy revealed no specific findings except right double middle turbinate and left middle turbinate hypertrophy (Figure 1). Computed tomography scans showed no opacity in the sinuses or olfactory cleft. However, they showed bony dehiscence of the right superior orbital wall, and the adjacent soft tissue in the roof of the right ethmoid sinus was bulging. In addition, the right uncinate process was bent medially, and its superior end was turned medially and attached to the middle turbinate (Figure 2).

Under a provisional diagnosis of idiopathic olfactory loss, the patient was treated with oral prednisone for 2 weeks and was administered mometasone furoate nasal spray (2 puffs per nostril), once a day for 3 months. The patient’s olfaction showed no response to the treatment.

The nasal turbinates are important anatomical structures extending from the lateral nasal walls into the nasal cavity. The precursor structures of nasal turbinates, the ethmoturbinal and maxilloturbinal, appear between the eighth and tenth weeks of fetal life. The maxilloturbinal gives rise to the inferior nasal turbinate, whereas the ethmoturbinal forms the uncinate process, middle turbinate, superior turbinate, and, when present, the supreme turbinate. During embryological development, lateral nasal wall variations can occur.

The rigid nasal endoscope allows for detection of any lateral nasal wall variations such as a double middle turbinate or a bifid inferior turbinate. According to previous studies, the appearance of a double middle turbinate can indicate a secondary middle turbinate (SMT) or an accessory middle turbinate (AMT). An SMT has been defined as a bony structure arising from the lateral wall of the ethmoid bulla. An AMT has been defined as a medially bent and anteriorly folded uncinate process. The present case corresponds to a type of AMT based on the endoscopic and radiologic findings.
A double middle turbinate may have three clinical implications. First, an SMT or AMT can be easily mistaken for a polyp during endoscopic examination. Second, the ostiomeatal complex is composed of the middle turbinate, the bulla ethmoidalis, and the uncinate process, which define the middle meatus. Any anatomical variations such as an SMT or an AMT may lead to narrowing in the middle meatus, which makes the patient vulnerable to sinusitis. Third, an intranasal contact point is known to cause secondary headaches; hence, a contact point in a middle meatus due to an SMT or an AMT may be associated with secondary headaches.

Declaration of Conflicting Interests
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

References
1. Bolger WE. Anatomy of the paranasal sinuses. In: Kennedy DW, Bolger WE, Zinreich SJ, eds. Disease of the sinuses. London, UK: B.C. Decker Inc., 2001:1–12.
2. Bae SH, Lim SC. Accessory middle turbinate. Otolaryngol Head Neck Surg. 2010;142(5):770–771.
3. El-Shazly AE, Poirrier AL, Cabay J, Lefebvre PP. Anatomical variations of the lateral nasal wall: the secondary and accessory middle turbinates. Clin Anat. 2012;25(3):340–346.
4. Cho JH. Frontal sinusitis caused by first and second secondary middle turbinates co-existing with an accessory middle turbinate. Jpn J Radiol. 2013;31(5):352–356.
5. Lee JH, Koh SH. A variant form of bifid inferior turbinate. Ear Nose Throat J. 2011;90(9):E33–E34.

Figure 2. Coronal CT scan shows no opacity in any of the sinuses or in the olfactory cleft. It shows bony dehiscence of the right superior orbital wall and the adjacent soft tissue in the roof of the right ethmoid sinus is bulging. It also shows a medially bent right uncinate process, with its superior end turned medially and attached to the middle turbinate (short arrow: uncinate process, long arrow: middle turbinate). CT indicates computed tomography.