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Letter to the editor

The hidden dangers of nasotracheal intubation: incomplete middle turbinate avulsion

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To the Editor,

Nasotracheal intubation (NTI) is commonly used in oral and maxillofacial surgery to enable unobstructed oral access. We report the case of a man who presented with unilateral nasal obstruction after NTI.

NTI is generally considered a safe technique, but it involves blind passage through the nasal cavity. This poses a risk of mechanical trauma to the nasal and nasopharyngeal structures, as well as laryngeal or tracheal injury[1,2]. While minor mucosal trauma is relatively common, traumatic turbinate avulsion, in which the nasal turbinate is inadvertently injured or removed, and skull base trauma are rare but severe complications[3,4]. Injuries to the middle turbinate are particularly important because of its attachment to the cribriform plate, and turbinate injuries pose a risk of skull base trauma and cerebrospinal fluid (CSF) leakage. The turbinates, or nasal conchae, play a crucial role in maintaining normal respiratory function, and their damage can lead to a range of immediate symptoms, such as nasal obstruction and bleeding, as well as long-term complications, including impaired mucociliary clearance and sinus infections[5]. Traumatic turbinectomy typically occurs when excessive force is used during intubation or when anatomical variations, such as a deviated septum or enlarged turbinates, hinder the passage of the endotracheal tube. Additionally, manipulation of the tube within the nasal cavity may lead to inadvertent fracture of the turbinate. The management of turbinate avulsion depends on the extent of injury and symptoms. Some patients prefer conservative treatment. This case highlights the importance of maintaining a low threshold for ENT evaluation if nasal complaints persist after NTI.

We report the case of a 34-year-old Caucasian male who presented with persistent right unilateral nasal obstruction at our ENT clinic with no other complaints. Nasal obstruction began after a dental procedure under general anesthesia, for which NTI was performed six months before presentation at the clinic. The patient had no relevant medical history. During the procedure, epistaxis was observed on the right side of the nose, which was self-limiting, and no ENT evaluation was conducted immediately after surgery.

Nasal endoscopic examination at the clinic revealed an aberrant anatomy with an incompletely avulsed right middle turbinate, which was curled posteriorly with only a small attachment remaining (Fig. 1). The nasal mucosa was intact, and there were no signs of inflammation or CSF rhinorrhea. Cone beam Computed Tomography (CBCT) of the paranasal sinuses showed no skull base fractures and good aeration of the paranasal sinuses (Fig. 1).

Given the persistent symptoms of nasal obstruction months after the trauma, a decision was made to remove the turbinate via endoscopic surgery. The procedure was performed under general anesthesia. Cottonoids soaked in 5% cocaine hydrochloride were used for nasal decongestion. Under endoscopic view, the avulsed turbinate was resected using through-cutting instruments by cutting the remaining stalk at the lateral nasal wall (Fig. 1).

Limited bleeding occurred, which stopped without further intervention. The patient was instructed to rinse the nose with saline five times daily postoperatively. The postoperative course was uneventful. Three weeks later, clinical examination showed fully healed nasal mucosa. The patient reported relief from nasal obstruction without any other complaints.

In conclusion, middle turbinate trauma is a rare but important risk factor for NTI. This complication should be considered in cases of prolonged epistaxis after difficult intubation. Selection of the appropriate nasotracheal tube size, use of atraumatic insertion techniques and nasal decongestants, adequate lubrication of the tube, and choosing the more patent nostril are important to minimize the risk of complications such as turbinate and skull base trauma.

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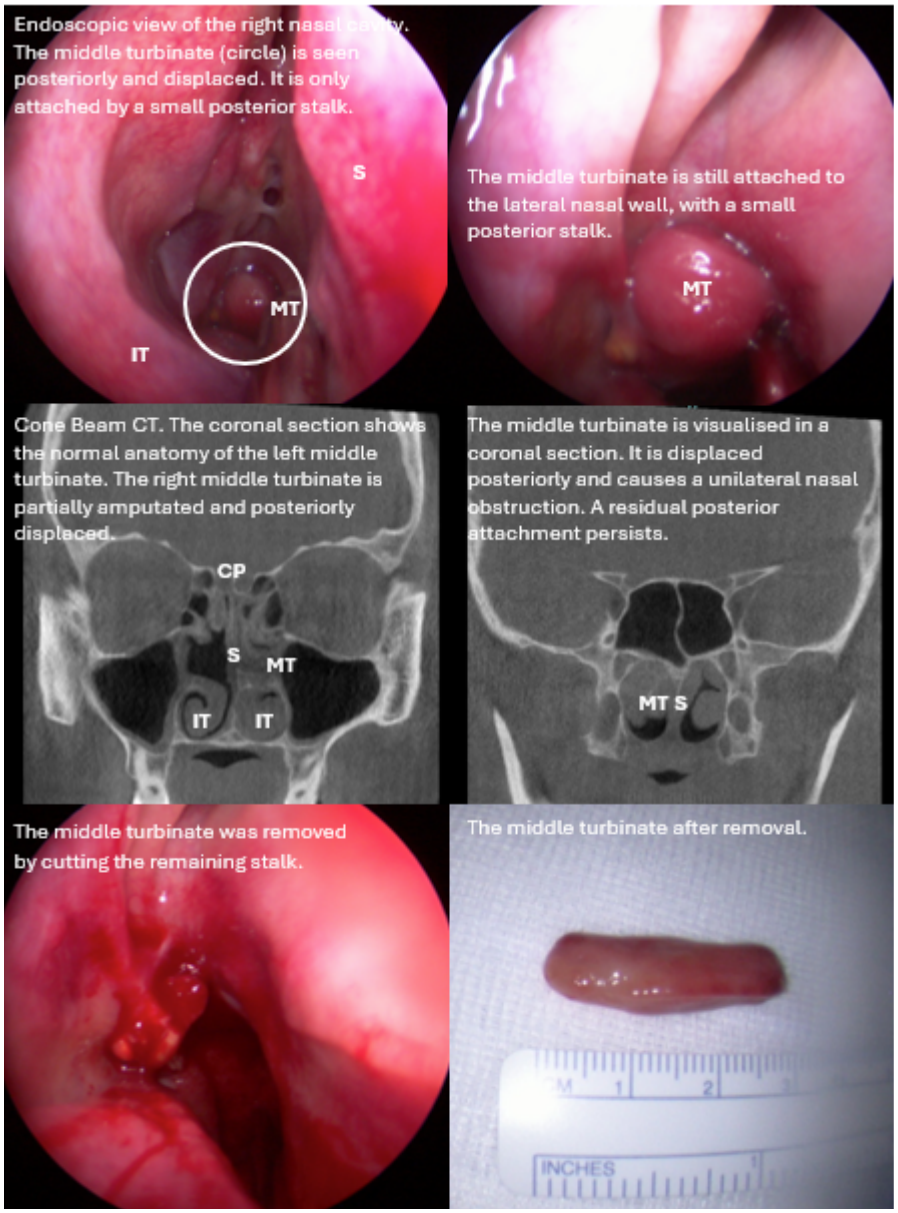

Fig. 1 — Endoscopic views and Cone Beam CT images.
IT= inferior turbinate; MT = middle turbinate; S = septum; CP = cribriform plate.

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