

Perforation of the Nasal Septum Identified During a Preoperative Otorhinolaryngology Consultation: A Case Report

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Nasal intubation is often required during oral surgery; however, nasal intubation can cause various complications including bleeding associated with nasal mucosal trauma during intubation and obstruction of the endotracheal tube. Two days before surgery, a nasal septal perforation was identified using computed tomography during a preoperative otorhinolaryngology consultation for a patient planned to undergo a nasally intubated general anesthetic. Subsequently, nasotracheal intubation was successfully performed after confirming the size and location of the nasal septal perforation. We used a flexible fiber optic bronchoscope to safely perform the nasal intubation while assessing for inadvertent migration of the endotracheal tube or soft-tissue damage around the perforation site. Careful preoperative planning in cooperation with the otorhinolaryngology department and use of computed tomography is recommended when a nasal abnormality is suspected.

Key Words: Nasal septum perforation; Nasal intubation; Otorhinolaryngology; Dentistry; Oral surgery.

CASE PRESENTATION

A 54-year-old woman (height 155 cm; weight 54 kg; body mass index 22.5 kg/m²) was scheduled to undergo right partial glossectomy to treat squamous cell carcinoma of the tongue. Upon admission 2 days before surgery, the patient reported for the first time to the consulting anesthesiologist that she had undergone nasal surgery 20 years earlier. Although the patient did not have any subjective symptoms, the details of the prior nasal surgery were unknown. The anesthesiologist determined that it may impede nasotracheal intubation, and thus, the patient was promptly referred to our hospital's department of otorhinolaryngology.

After evaluation, she was found to have undergone a septoplasty. Preoperative endoscopy and computed tomography (CT) revealed a nasal septum perforation

measuring 14 mm vertically and 24 mm horizontally (Figure 1). In addition, the otorhinolaryngologist reported that intubation through the left nasal cavity was likely to cause the endotracheal tube (ETT) to migrate through the perforation and into the right nasal cavity, which carried an increased risk of bleeding. It was therefore recommended that nasotracheal intubation be performed through the right nasal cavity. Nasotracheal intubation was planned to follow oropharyngeal intubation to first secure the airway so that nasotracheal intubation could be performed carefully due to the septal perforation.

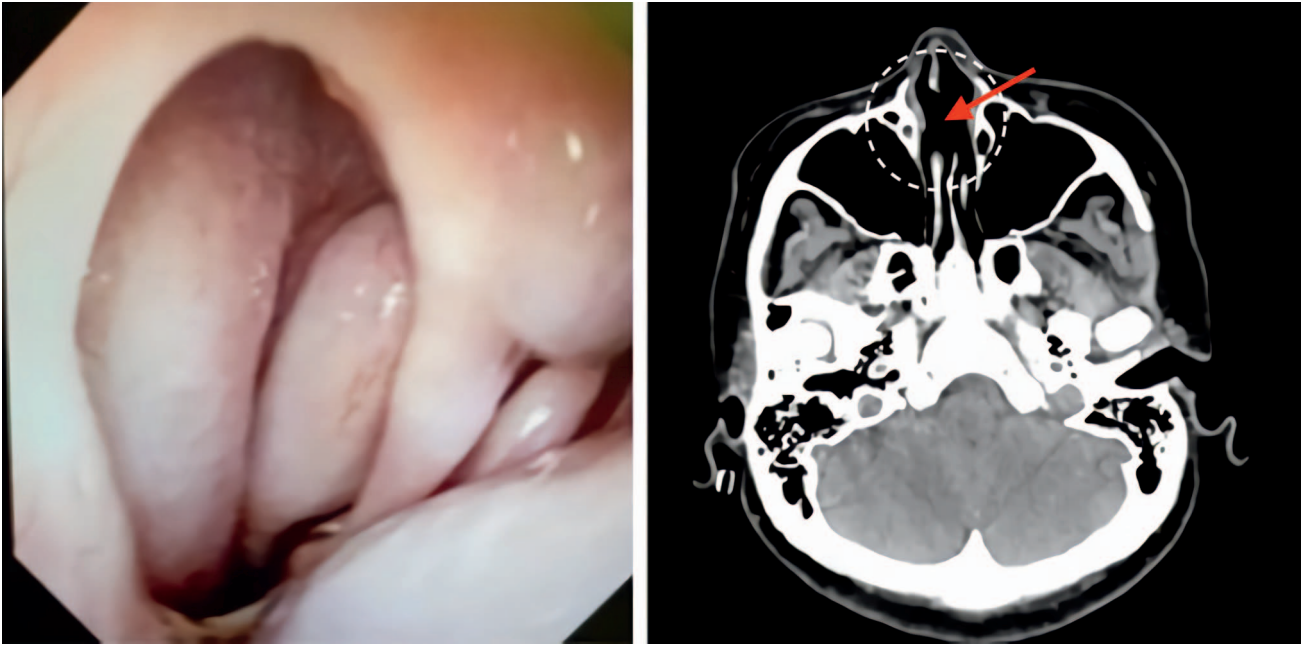
Rapid sequence induction was performed, and the airway was secured by oropharyngeal intubation. The septal defect's position and size was visually confirmed bilaterally using a fiber optic bronchoscope inserted through the nares. The bronchoscope was inserted through the left nasal cavity to confirm successful passage of the ETT through the right side past the septal perforation. A bronchoscope was placed in the left nasal cavity at the perforation site to observe the insertion of the ETT from the right nasal cavity. First, a moderately flexible 16-Fr suction tube, which would be used to suction blood should bleeding occur, was selected as a guide. The suction tube was inserted in

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Figure 1. Clinical and Radiographic Imaging of the Nasal Septal Perforation.



Size and location of nasal septal perforation as seen through the left lateral nasal cavity by bronchoscope and computed tomography.

the right nasal cavity along the nasal cavity floor. Upon confirming the passage of the suction tube in the right nasal cavity and the absence of bleeding around the nasal septal perforation using the bronchoscope, the suction tube was inserted into the pharynx. Then, the suction tube was used as a guide or stylet to insert a nasal RAE ETT with soft seal cuff and an inner diameter of 6.0 mm (Portex, Smiths Medical). As the ETT was advanced by the perforation site, Lucae forceps were placed through the perforation from the left nasal cavity to prevent migration of the ETT into the left nasal cavity and to guide the tube through the right nasal cavity (Figure 2). The oral ETT was removed under direct laryngoscopy with a Macintosh blade and replaced with nasal ETT to resecure the airway. The surgery was uneventful, and the patient was extubated awake after confirming adequate spontaneous ventilation.

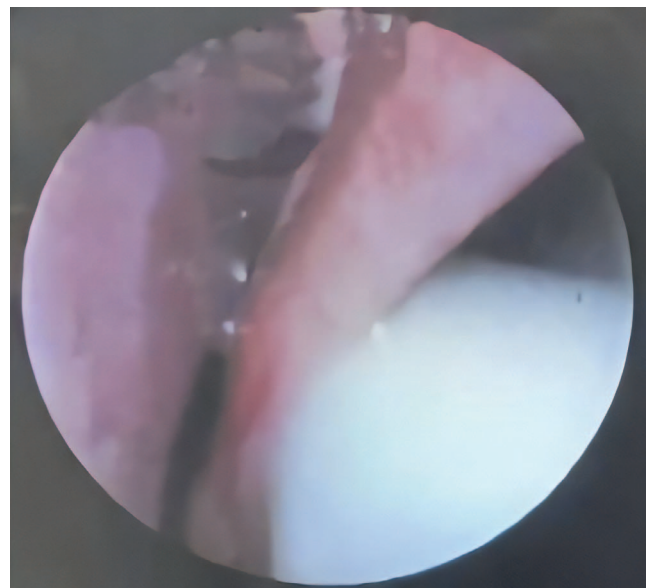
DISCUSSION

Epistaxis is frequently associated with nasotracheal intubation and carries increased risk if intranasal structural abnormalities such as a nasal septal perforation is present. Formation of crust due to bleeding and/or mucosal sloughing may cause nasal obstruction. Moreover, mucosal edema posterior or proximal to the septal perforation resulting from ETT insertion may also cause airway obstruction. Kiesselbach's area is

located at the anteroinferior quadrant of the nasal septum and is a common site of epistaxis due to its rich blood supply. The anterior cartilaginous septum is the most common site of perforation; however, perforation can occur at any site from nares to choana.^{1–3}

Preoperative investigation using a CT scan of the nasal cavity and septum should be performed for

Figure 2. Contralateral Intranasal View During Intubation.



View of the nasal endotracheal tube as seen from the contralateral side of the septal perforation.

patients with risk factors for septal perforation so that a proper plan for anesthesia and nasotracheal intubation can be formulated.⁴ Therefore, clinicians can better understand the anatomy of any intranasal structural abnormalities and ensure the availability of necessary equipment to minimize intranasal trauma. Tailoring the anesthesia plan according to an individual patient's needs is important for anesthesia to be administered safely by taking precautions based on preoperative evidence. Prior to performing nasotracheal intubation, a detailed otorhinolaryngological examination and a CT scan should be performed if a nasal abnormality is suspected.⁵

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