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Use of Esophageal Stethoscope as an Introducer during Nasotracheal Intubation

To the Editor:—We read with interest the case report by Williams *et al.*[1] of an accidental middle turbinectomy during nasotracheal intubation. Though the authors stated it as being the first case, there have been some earlier reports on middle turbinectomy.[2–4]

Prewarming of endotracheal tube (ETT) to soften, lubricating of the ETT, and using a vasoconstrictor have been recommended to reduce trauma during nasotracheal intubation. Nonetheless, severe nasal traumas have been reported.[1–8] Others have described a technique to facilitate the atraumatic passage of nasotracheal tubes, such as an intraluminal balloon.[9] However, this is not widely available. An alternative that might be useful is the esophageal stethoscope–ETT combination, which can be assembled at bedside by using readily available anesthetic materials. In addition, the esophageal stethoscope can be used alone after it used as a guide.

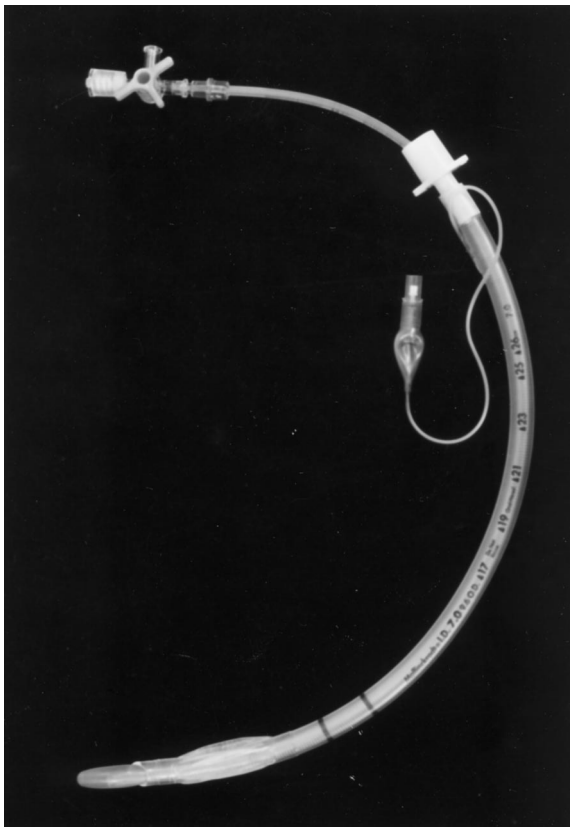

Fig. 1. Esophageal stethoscope and endotracheal tube (ETT) combination. Injecting about 6 ml of air and locking 3-way stopcock keeps the distal portion of esophageal stethoscope inflated to the same diameter of ETT.

A pediatric esophageal stethoscope (17 French: Mallinckrodt Medical, Athlone, Ireland) is positioned with its tip protruding about 2 cm out of the distal end of an ETT (internal diameter: 7.0 mm Mallinckrodt Medical). The proximal tip of esophageal stethoscope is connected to a syringe via a 3-way stopcock. Injecting about 6 ml of air and locking the 3-way stopcock keeps the distal portion of esophageal stethoscope inflated to the same diameter of the ETT (fig. 1).

If nasal trauma occurs during the advancement of ETT, this method would be effective in preventing the introduction of a torn part of nasal tissue into the trachea[5] or the obstruction of ETT by it,[7] because the end of ETT is obturated with esophageal stethoscope. For fiberscope-guided intubation, this method may prevent visual obstruction from mucus plug[10] or bleeding. During direct laryngoscopy, its distal tip provides a portion to grasp with intubating forceps, preventing ETT cuff damage.

When the esophageal stethoscope is inflated, the tip has a tendency to bend to the bevel side, which seems to be the drawback of this method. However, you can take advantage of the bent tip and direct the ETT away from the tubinates, which can avoid the possibility of turbinate trauma.

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Preparation for Nasotracheal Intubation

To the Editor:—May I comment about the case report on a complication of nasal intubation by Andrea R. Williams *et al.* on page 1782 in the June 1999 issue of ANESTHESIOLOGY.[1] This report describes an accidental middle turbinectomy during a nasal tracheal intubation. The authors note that lack of topical vasoconstriction may have contributed to the injury. There is another factor that should be considered before nasal intubation. In a large proportion of such patients, one nasal passage is smaller than the other. Thus, there is a 50% chance of inserting a nasal trachea tube in the narrower of the two. Having the patient sniff and inspection of the nares will not always reveal the narrower of the two passages. There is a maneuver performed before nasal intubation that could shrink the mucous membrane as well as reveal the narrower of the two passages. It was taught to the anesthesia staff at Grasslands Hospital in Westchester, New York by our chief, Harold Bishop in the 1960s. I don't think he claimed originality.

Two 6-inch cotton-tipped applicator sticks were dipped in neosynephrine (cocaine if an awake intubation was planned). Each cotton tipped stick was slid posterior along the floor of the nose. The mucosa was shrunk and palpation clearly revealed which passage was more patent. Obviously a wider passage will make an easier intubation with fewer complications.

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Middle Turbinectomy: A Complication of IMPROPER Nasal Intubation?

To the Editor:—Despite Williams *et al.* not being aware of an unintentional middle turbinectomy occurring during nasotracheal intubation,[1] it has been reported and discussed—albeit not with a 6.0 cuffed RAE endotracheal tube (Mallinckrodt Medical, St. Louis, MO)—in ANESTHESIOLOGY.[2,3]

I am particularly interested in the details of how the RAE was inserted from the nares into the nasopharynx. Williams *et al.* stated it was inserted "into the patient's right nares with the bevel of the tube facing medially." This is a bit ambiguous. Is the bevel the point or flat part (opening at the end of the RAE)? What was the opening "facing medial to" — the nasal septum or the turbinates? Was it inserted with the anesthesiologist standing or sitting cephalad to the patient's head? Lastly, but in all probability most important, was the RAE pulled cephalad at its acute angle (16–17.5 cm markings) after being inserted into the nares and while being passed into the nasopharynx?

Regardless of the type of nasotracheal tube used, turbinectomy is an avoidable complication if: (1) before anesthesia, the turbinates are shrunk using cocaine (4–10%) or a lidocaine-phenylephrine mixture[4,5]; (2) when inserting the tube into the nares, its tip lies alongside (parallel) to the nasal septum with the opening in the bevel facing the turbinates, and (3) maintaining this position, it is pulled cephalad as it is passed posteriorly into the nasopharynx. Pulling the nasotracheal