

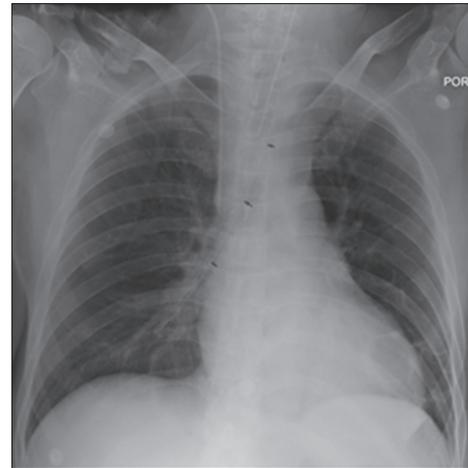
# Overcoming a difficult nasogastric tube insertion procedure with a video laryngoscope (C-Mac®)

Sir,

Nasogastric tube (NGT) placement is a basic procedure in a critical care unit, but it can be challenging even for experienced anesthesiologists. The failure rate in the first attempt with the blind method has been reported to be as high as 50%.<sup>[1]</sup> Variations in a patient's functional anatomy, anesthetized, and paralyzed patients, and the presence of endotracheal tube can further complicate an already difficult procedure. Although various techniques have been suggested to make NGT insertion easier, failure to insert or NGT malposition still occurs. The most frequent malpositioning of NGT occurs in the respiratory tract.<sup>[2]</sup> The complications of an endobronchial misplaced NGT can be very serious, with airway leakage and pulmonary edema, and may even lead to death. A study reported NGT placement in the left or right bronchus in 50 out of 2000 cases over a period of 4 years, with two mortalities.<sup>[3]</sup>

A 50-year-old man, with no known medical illness, was admitted to our intensive care unit for ventilator support due to traumatic brain injury. The patient had an oral cuffed endotracheal tube size of 8 mm. A soft NGT-size 14 Fr gauge was attempted by the blind technique. The passage of the tube was smooth, and its gastric placement was confirmed by instilling air into the feeding tube with a syringe while using a stethoscope placed over the stomach to listen for rushing air. A chest X-ray was taken before administering any medication through a feeding tube as per the institute's protocol. The X-ray revealed the course of the NGT into the right lower lobe bronchus [Figure 1]. Air insufflation and epigastric auscultation are commonly used signs of gastric placement. However, good sound transmission may cause misinterpretation even with bronchial misplacement of NGT. Benya *et al.* reported a 20% rate of false gastric confirmation by auscultation.<sup>[4]</sup>

The NGT was removed immediately without any complication. Subsequently, a new NGT-size 14 Fr gauge was reinserted by direct laryngoscopy and Magill



**Figure 1:** Chest X-ray showing nasogastric tube entering right lower lobe bronchus

forceps, but the malpositioning occurred again. This was confirmed by observing bubbles when the end of the feeding tube was placed under water; the appearance of bubbles indicating misplacement of the feeding tube in the respiratory tract.

A senior anesthetist was called for help. He attempted once with the blind technique using a cold (refrigerated) NGT but failed insertion due to coiling in the hypopharynx. Repeat attempt with direct laryngoscopy and Magill forceps was unsuccessful. We then decided to continue the procedure with the aid of video laryngoscope. C-Mac D-Blade video laryngoscope was used, and by visualizing the supraglottic area, the NGT could be easily inserted into the esophageal inlet and anchored at 60 cm. The placement was confirmed by a chest X-ray.

Usually, direct laryngoscopy guided by Magill forceps is the technique of choice if NGT insertion is unsuccessful with the blind method. However, the periglottic view seen by direct vision and the narrowing of oral space due to the endotracheal tube are limitations for this approach. In our case, video laryngoscope was very useful for placing the NGT easily and quickly, with less risk of trauma and malposition. Therefore, this method should be considered as an option in difficult situations.

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### Conflicts of interest

There are no conflicts of interest.

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