

Accidental penetration of a vocal cord by a nasogastric tube

KIYOSHI TAKEMOTO, KIYOSHI TAKEDA, NORIKO HAMANAKA, HIDETOSHI TAMURA, and HISATOSHI OHSUMI

Department of Anesthesia, Osaka National Hospital, 2-1-14 Houenzaka, Chuo-ku, Osaka 540, Japan

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To the editor:

Nasogastric (NG) tubes are widely used perioperatively to prevent gastric fluid regurgitation. Under general anesthesia, however, it is sometimes difficult to insert the NG tube properly without patient cooperation, and NG tube-associated laryngeal complication have been reported [1-3].

A 53-year-old woman, whose chief complaint was hoarseness, underwent microlaryngoscopic resection of a polypoid vocal cord under general anesthesia. Preoperative laryngofiberoptic examination revealed bilateral polypoid lesions which covered the entire vocal cords. Anesthesia was induced with thiopental (200 mg) and succinylcholine chloride (50 mg). Although manual ventilation with a mask was slightly difficult, her trachea was intubated with a 6.5-mm inside diameter (ID) endotracheal tube without any difficulty. Following intubation, the NG tube (16F Salem sump tube) was inserted. Although gastric fluid was not obtained, her oral cavity was examined briefly by direct



Fig. 1. Preoperative laryngofiberoptic view of the larynx. A, epiglottis; B, polypoid vocal cord

Address correspondence to: K. Takeda

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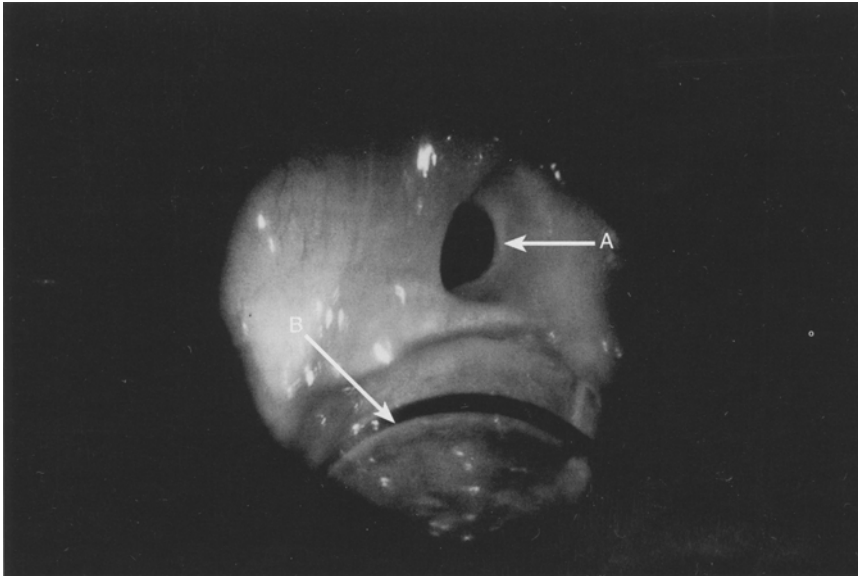


Fig. 2. Intraoperative microlaryngoscopic view of the larynx. *A*, site of nasogastric tube penetration; *B*, endotracheal tube. This photo was taken immediately after the nasogastric tube had been pulled out

laryngoscopy, and the NG tube was thought to have been inserted properly into the esophagus. After setting up of the microlaryngoscopic apparatus, the surgeon pointed out that the NG tube penetrated the polypoid lesion of the right vocal cord and that it had entered the distal trachea over the endotracheal tube cuff. The NG tube was pulled out and the resection of polypoid lesions, which included the site of penetration, was performed as scheduled (Figs. 1, 2). The patient's postoperative course was uneventful and she left the hospital on the 7th postoperative day.

With regard to the laryngeal injury, Ibuki et al. reported a case of vocal cord paralysis caused by a direct trauma to the recurrent laryngeal nerve [3]; however, there has not been any report documenting a direct vocal cord injury caused by a NG tube. Under general anesthesia, patients cannot respond to untoward events associated with NG tube misplacement. In our case, vocal cord penetration and intratracheal insertion of the NG tube was recognized by direct visualization of the vocal cord. However, in other operations, laryngeal injury or misplacement might have been overlooked during surgery and would have resulted in more serious

sequelae. In anesthetizing patients who complain of hoarseness, we recommend a preoperative otolaryngological examination and we should be aware of the complications associated with NG tube insertion. In the case of microlaryngosurgery, we routinely use small-bore endotracheal tubes (6.0–6.5 mm ID) to offer a good operative field. It is probable that the smaller the endotracheal tube, the more frequent the intratracheal NG tube misplacement. We did not employ CO₂ monitoring, however, periodic measurement of CO₂ outflow, which synchronizes with the ventilatory cycle, is the most reliable way to detect intratracheal NG tube misplacement.

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