A Case of General Anesthesia for a Young Infant in Whom Intubation Was Suspected to Be Difficult Because of a Thyrolingual Cyst

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This is a case report of an infant who underwent thyrolingual cystectomy under general anesthesia. Two tracheal tubes were used: 1 for nasopharyngeal airway and the other for fiberoptic intubation. With this method, nasal intubation was successfully performed without hypoxia and hypercapnia even in a 3-month-old infant. We concluded this is a useful intubation method for infants who are predicted to be a difficult intubation.

Key Words: Thyrolingual cyst; Infant; Difficult intubation; Nasopharyngeal ventilation; Nasal fiberoptic intubation.

Thyrolingual cysts are formed when a remnant of epithelial canalization connecting the thyroid gland to the foramen cecum of the tongue fills with mucus. This condition is rare and may cause upper airway obstruction requiring emergency surgical treatment in infants.¹

We herein report a case of an infant who underwent thyrolingual cystectomy under general anesthesia. The infant was a 3-month-old boy weighing 5.75 kg, who suffered from inspiratory stridor from an age of 2 months. He was admitted to our hospital on an emergency basis due to aggravated stridor following milk intake. A semiemergency operation was scheduled.

Before surgery, an endoscopic examination and magnetic resonance imaging of larynx were performed (Figures 1 and 2). The results showed that the thyrolingual cyst at the base of the tongue had bent the epiglottis towards the larynx and was obstructing the tracheal entrance. Tracheal intubation using a conventional laryngoscope was judged to be difficult as cyst damage and bleeding were considered likely. Therefore, we selected fiberoptic intubation via 1 nostril while the

patient was under assisted ventilation using a nasopharyngeal airway via the other nostril. Sevoflurane anesthesia was performed. Mask ventilation was not difficult. After induction of anesthesia, an intravenous line was secured, and atropine sulfate 0.02 mg/kg was administered. In order to prevent nasal bleeding, a sterile cotton swab impregnated with 1:5000 dilute adrenaline was inserted into the nasal cavity. Simultaneously the size of the nasal cavity was confirmed with a cotton swab to predict the ease of passage of the tracheal tube. After removal of the swab, an uncuffed endotracheal tube with an inner diameter of 3.5 mm was inserted into the left nasal cavity. An outer diameter 2.2 mm bronchofiberscope was advanced into the trachea via the tube lumen, and intubation was attempted after confirming the tracheal bifurcation. However, the tracheal tube failed to advance due to the patient's body movements in response to intubation. As a result, this effort was abandoned, and intubation was attempted again by administering 1 µg/kg of fentanyl. Given the possibility of respiratory depression by fentanyl and prolonged apnea during the intubation process, an inner diameter of 3.5-mm uncuffed endotracheal tube was inserted through the right nasal cavity into the oropharynx and connected to the anesthetic circuit. After confirming the tracheal branch, the tracheal tube in the left nasal cavity was advanced to complete the tracheal intubation. Oxygen saturation was kept within the normal range during the process. Using this method,

Received November 17, 2014; accepted for publication February 27, 2015.

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Anesth Prog 65:127–128 2018 | DOI 10.2344/anpr-65-02-04
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Figure 1. Preoperative pharyngeal fiberoptic view. Epiglottis is pressed over the larynx by the thyrolingual cyst (†).

nasal intubation was successfully performed without hypoxia or hypercapnia in this 3-month-old infant.

This method of nasal fiberoptic intubation with nasopharyngeal ventilation has been performed with older children and adults² but hitherto not reported with infants. The present case illustrates that this technique can be used with good effect with infants in whom intubation may otherwise be difficult.

This research was originally published in the *Journal of the Japanese Dental Society of Anesthesiology*. 2015;43:223–225.

Figure 2. A magnetic resonance image (T2) of the pharynx. A thyrolingual cyst (†) is recognized in the base of the tongue.

Acknowledgments

The authors wish to express their gratitude to James R. Valera for his help in editing the manuscript.

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