

Sequential Oral-to-Nasal Tube Exchange as a Rescue Strategy in Fiberoptic Equipment Failure for a Difficult Airway: When the Light Goes Out

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Fiberoptic intubation (FOI) is considered the gold standard for managing anticipated difficult airways with restricted mouth opening [1]. However, unforeseen equipment failure can jeopardize airway security and necessitate immediate alternative strategies [2]. We report a case where a sequential oral-to-nasal tube exchange served as a rescue approach following fiberoptic malfunction.

A 32-year-old male with carcinoma of the buccal mucosa, severe trismus (~1.5-finger mouth opening), Mallampati class IV, narrow nasal nares, and limited neck extension was scheduled for composite resection with pectoralis major myocutaneous flap reconstruction. Anticipating a difficult airway, an awake nasal FOI was planned with appropriate airway preparation and backup strategies. After insertion of the scope, the fiberoptic light source failed. It was challenging for us to insert the laryngoscope blade for intubation, as the patient had a restricted mouth opening.

Laryngoscope blades differ in their radius of curvature and flange width; therefore, selecting a blade that conforms to the patient's facial contour and airway anatomy is essential to optimize insertion and glottic visualization. As the patient was already prepared for awake FOI, we utilized the opportunity to attempt awake laryngoscopy to assess which blade could be

accommodated within the limited oral aperture. Among the available options, we selected the blade with a curvature that provided the most favorable alignment and ease of insertion, compared with the C-MAC® or D-blade, which are more angulated for use in restricted mouth openings. Considering the possibility of better relaxation and improved jaw opening after administration of a muscle relaxant, we decided to proceed under general anesthesia.



Figure 1- Sequential oral to nasal tube exchange

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After confirming adequate mask ventilation, a muscle relaxant was administered. Laryngoscopy under general anesthesia revealed a Cormack–Lehane Grade III glottic view. Applying external laryngeal pressure and the LeHeR maneuver, the posterior part of the vocal cords became minimally visible (from Grade III to Grade IIb glottic view).

Given the risk of trauma and bleeding during direct nasal intubation, which could further compromise the already difficult airway, a staged oral-to-nasal tube exchange was planned [3] (Figure 1).

A lubricated bougie was passed orally along the posterior epiglottic path, and the 6.0 mm oral endotracheal tube (ETT) was railroaded over it, and ventilation was confirmed. A smaller diameter oral tube was intentionally selected to allow simultaneous passage of a nasal bougie alongside it.

The nasal bougie was then gently introduced through the right nostril; the oral tube cuff was deflated, and the nasal bougie advanced into the trachea alongside the oral ETT under visual guidance. A 6.5 mm flexometallic nasal ETT was threaded over the bougie and advanced to the oropharynx. After adequate suctioning, the oral ETT was withdrawn while simultaneously railroading the nasal tube into the trachea. Tube placement was confirmed by capnography and bilateral air entry.

The surgery proceeded uneventfully. After reversal, the patient was shifted to the SICU with the nasal tube in situ on the T-piece, breathing spontaneously. The patient was extubated uneventfully on the next day.

This case highlights three key lessons: preparedness for equipment failure, proper selection of a laryngoscope blade with suitable curvature is critical, and sequential staged strategy. Oral-to-nasal bougie-assisted exchange can minimize trauma and secure the airway effectively, especially in patients with a difficult airway.

Even the best-planned airway may be compromised by unforeseen equipment issues. Adaptability, familiarity with multiple airway techniques, and stepwise rescue strategies remain essential to maintain oxygenation and patient safety.

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