

Use of malfunctioning fibre-optic bronchoscope as a rescue bougie!

Sir,

A fibre-optic bronchoscope (FOB) is an integral part of difficult airway cart. However, its use involves significant maintenance and is prone to damage and malfunctioning.^[1]

We describe successful management of an anticipated difficult airway using a dysfunctional FOB with a videolaryngoscope. A 19-year-old male who had sustained burns over face, neck, chest and upper limbs 5 years back was scheduled for release of contracture over axilla and chest under general anaesthesia [Figure 1]. The patient had undergone post-burn neck contracture release and skin grafting 3 months back under general anaesthesia where FOB under spontaneous ventilation was used to secure the airway.

Airway evaluation showed mouth opening to be two finger breaths, Mallampati grade IV, thyromental distance <5 cm, normal neck extension with limited mouth protrusion.

We planned to secure the airway using inhalation induction with sevoflurane to maintain spontaneous breathing and tracheal intubation using FOB, thereby allowing a rapid and safe airway control with the best possible tolerance.

The patient was pre-medicated with 2 mg of intravenous midazolam and 0.2 mg of intramuscular glycopyrrolate. Standard monitors of perioperative care were placed. The patient was pre-oxygenated with 100% oxygen for 5 min. Induction was performed using a circle-absorber breathing circuit primed with sevoflurane 6% in 50% air/oxygen with 6 L/min fresh gas flow rate (FGF) supplemented with fentanyl (1 µg/kg). After loss of the eyelash reflex, FOB-guided (OD-4.9 mm) intubation with armored tube of size seven was attempted. Per-procedural oxygen was administered through nasal prongs. In spite of routine pre-use checks for any malfunction, our FOB developed a snag in the form of malfunctioning light source. Size three laryngeal mask airway was placed, but adequate placement could not be attained prompting us to use Glidescope® Video Laryngoscope (GVL). Cormack-Lehane Grade III glottis visualisation was encountered. Two attempts at GVL using its stylet and gum elastic bougie failed to

negotiate the tube or bougie past the vocal cords as it was constantly hitting the anterior wall of trachea. Reduced blade size or rotating the tube anticlockwise did not help either.

As the patient was breathing spontaneously and maintaining oxygen saturation, 6% sevoflurane was administered again for 2 min at an FGF of 6 L/min. Thereafter, one operator performed laryngoscopy using GVL and utilised the insertion cord of dysfunctional FOB as a bougie. The other operator by utilising the monitor of GVL for better coordination used the lever of FOB to successfully negotiate the insertion cord pass the vocal cords. Thereafter, an armoured tube was slid over insertion cord and airway was secured. Rest of the course was uneventful.

Reduced thyromental distance and reduced submandibular compliance secondary to previous neck surgery might have been responsible for the initial failure in securing the airway.^[2] Reports of combined use of GVL and FOB for the placement of double-lumen tube and securing airway in scenarios where either of them alone has failed are available.^[3,4] During general anaesthesia, the lumen of the pharynx usually becomes smaller as a result of reduced muscle tone. Combining use of GVL with FOB facilitates progression of bronchoscope towards the larynx by keeping the oropharynx open as well as by enlarging the lumen of pharynx, reduces erratic lateral advancement. However, we utilised our dysfunctional FOB as a rescue stylet or bougie. Compared to a limited and fixed range offered by gum elastic bougie (35°–40°), FOB offers greater manoeuvrability. Therefore, combined use of GVL and FOB (with or without their optics) could be done in such cases of anticipated difficult airway although it would require two personnel. In the absence of functional FOB, airway adjuncts such as Frova® Intubating Introducer



Figure 1: Follow-up case of neck contracture release

or Truer® Rapid Positioning intubation stylet could have proved useful in this case. However, their blind insertion runs the risk of causing airway trauma.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

***Abinash Patro, Vansh Priya¹, Rafat Shamim¹,
Prabhat Kumar Singh¹***

Department of Anaesthesia, Nizam's Institute of Medical Sciences, Hyderabad, Telangana, ¹Department of Anaesthesia, S.G.P.G.I.M.S, Lucknow, Uttar Pradesh, India

Address for correspondence:

Dr. Vansh Priya,
3/279, Vishwas Khand, Gomti Nagar, Lucknow, Uttar Pradesh, India.
E-mail: vanshshr@gmail.com

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