# Timely Intervention Instead of the Type of Equipment Does Change the Outcome in a Life Threatening Condition: A Case Report

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**ABSTRACT**

We report a case of use of semi rigid intubating bougie to intubate a patient with large thyroid swelling in life threatening airway emergency in the absence of sophisticated equipments.

**Keywords:** Intubating bougie, difficult airway, emergency

## INTRODUCTION

In the modern era of anaesthesia, where standard practice guidelines and sophisticated equipments like fibreoptic bronchoscope, video laryngoscope and different intubating aids are available, can a simple intubating bougie make its place in difficult intubation cart when we are handling a life threatening airway emergency? Perhaps it cannot help. But in our situation, when we were handling a patient in late night hours with minimum intubating aid and less man power, it helped us to save a life.

## CASE REPORT

A 76 years old male patient presented to the emergency department at around 2:00 a.m. with respiratory distress and stridor. The patient was unable to phonate. On examination his vitals were heart rate 140/minute, blood pressure 170/98 millimetres of mercury (mm Hg), oxygen saturation (spO2) of 82%, face suffused and a large thyroid swelling extending from mandible to manubrium sterni compressing the trachea. Initial attempt to oxygenate and ventilate with bag and mask was not possible so intubation was tried, but on laryngoscopy airway anatomy was found to be totally distorted and the epiglottis could not be visualized. Instead several mucosal fold clusters embedding the epiglottis were visualized hampering its demarcation.

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During the course of resuscitation patient became drowsy and heart rate dipped to 60/minute with a feeble pulse. Now securing the airway was our utmost priority. Due to lack of advanced airway equipments (fibreoptic bronchoscope, video laryngoscopes and surgical access) in the emergency and non-availability of ample amount of time and help, securing the airway was found very difficult. In this critical situation, a simple ventilating bougie helped us to place the endotracheal tube timely and safely to save a precious life. With this semi rigid intubating bougie, we oxygenate the patient while passing it under the mucosal folds in an attempt to intubate the trachea. While attempting this, the posterior pharyngeal wall got stimulated and the patient had a bout of cough thus helping us to identify the glottis. We then passed our bougie under that mucosal fold into the glottis. We further slid the bougie downward which passed smoothly and with cough a gush of air was audible. Then we gently railroaded an endotracheal tube over it under direct laryngoscopic view and the bougie was removed. After auscultating the chest for air entry, we shifted him to intensive care unit. Capnography and spirometric loops further confirmed correct tube placement. Arterial blood gas picture showed pCO2 of 70 mm Hg with normal pH and bicarbonate level indicating carbon dioxide retention and thus drowsiness. Post intubation chest X-ray revealed significant tracheal deviation towards right side. Sooner the airway obstruction was relieved; vitals became stabilized and the patient regained consciousness. During this whole process of resuscitation, the patient did not have cardiac arrest. Although spO2 had fallen up to 40% which lasted for less than a minute, it rose to 98% after intubation and ventilation.

## DISCUSSION

Safe airway management is an integral part of successful anaesthesia practice. Various “Practice

Guidelines for Management of the Difficult Airway" are currently prevailing for handling airway in an evidence and protocol based approach and for making decisions while facing an actual or potentially difficult airway.[1-3] The ASA (American Society of Anaesthesiology) guidelines describe a difficult airway as "difficulty with facemask of the upper airway, difficulty with tracheal intubation, or both".[1] The guidelines further describe difficult laryngoscopy as a situation in which "it is not possible to visualize any portion of the vocal cords after multiple attempts at conventional laryngoscopy".[1] Difficult tracheal intubation is described as a situation in which "tracheal intubation requires multiple attempts, in the presence or absence of tracheal pathology".[1] In our case, we faced difficult tracheal intubation. Though mouth opening was adequate in our case but laryngeal anatomy was totally distorted and gave the appearance of a "mucosal cavern" due to clustering by mucosal folds which embedded the epiglottis. The practice guidelines enlist various useful techniques and equipments for difficult intubation comprising of video laryngoscope, fibreoptic bronchoscope, laryngeal mask airway and light wand. Among them awake fibreoptic intubation, direct video laryngoscopy and lastly surgical access of airway may possibly be the most appropriate choice for handling difficult airway.[4,5] Even though awake fibreoptic intubation remains the gold standard recommendation for the management of difficult airway, but Ezri et al found that only 59% of saviours were testified of skills in the use of a fibreoptic bronchoscope and its use in clinical practice was also restricted because of lack of availability.[4] Video laryngoscopes are also useful adjuncts after failed direct laryngoscopy and have also shown evidence as suitable rescue devices subsequent to failed fibreoptic intubation.[6,7] However, there is lack of availability of the advanced instruments in the casualty of our institution. Even surgical access could not help us due to the large overlying thyroid mass. In this life threatening situation where we were short of time and advanced airway gazettes, a simple ventilating bougie helped us as a mystic aid to come out of this dreadful clinical scenario.

The use of bougie to intubate a patient with a bleeding supraglottic mass was also performed by Chandra A et al[8] Similar to our case, they intubated the patient after introducing a bougie which was the only available aid in the emergency situation to secure the airway. We also utilized ventilating bougie that mechanically stimulated the glottis to generate the potential cough reflex and at the same time gave us a clue of the laryngeal inlet through which we passed the bougie gently. As soon as we slid the bougie, a sudden gush of air came out of the opening ensuring us that we were in the right track and not in any false passage. The generation of cough reflex is due to the stimulation of pulmonary irritant receptors (cough receptors) in the epithelium of the respiratory tract which are sensitive to both mechanical and chemical stimuli. The cough receptors are rapidly adapting irritant receptors located mainly on the posterior wall of the trachea, pharynx, and at the carina of trachea. Stimulation of these cough receptors by ventilating bougie produced a cough that helped us in locating the laryngeal inlet.[9]

In patients with a predicted difficult airway and "cannot ventilate cannot intubate" situation, where complete armamentarium of difficult intubation cart is not available and surgical access is anatomically distorted, a simple intubating bougie can do wonders. There should be no hesitation in using the available equipments whilst securing a difficult airway.

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