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When Everything Turned Red: Following the Airway Through Blood-Obscured Fibreoptic Vision During an Emergency

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Abstract
Postoperative haemorrhage following head-and-neck surgery can create a time-critical airway emergency in which oedema, restricted mouth opening and blood contamination compromise airway management. We describe awake flexible fibreoptic nasotracheal intubation in a 25-year-old man requiring emergency re-exploration for postoperative haemorrhage following left hemiglossectomy. The procedure was undertaken at approximately 4 a.m. in an anxious patient with marked facial and tongue oedema, mouth opening limited to one finger breadth and haemodynamic evidence of significant blood loss. During the first attempt, the bronchoscope reached the vocal cords through the right nostril, but the endotracheal tube could not be advanced through the nostril. Following removal of a Ryle's tube occupying the left nostril, intubation was successfully achieved through the left side. Blood repeatedly obscured the endoscopic view, requiring careful orientation using the darker airway lumen. Oxygen saturation remained between 95% and 100%. This case highlights the importance of maintaining oxygenation, reassessing tube-passage difficulty, preparing rescue strategies and preserving composure during a high-pressure airway emergency.

Keywords: *Awake tracheal intubation; difficult airway; flexible fibreoptic bronchoscopy; head-and-neck surgery; postoperative haemorrhage.*

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I. Introduction

Emergency airway management following head-and-neck surgery may be complicated by bleeding, tissue oedema, restricted mouth opening and distortion of normal anatomy. Blood contamination can further impair flexible endoscopic visualisation, while successful identification of the glottis does not guarantee passage of the endotracheal tube. Difficult-airway guidelines emphasise preparation, oxygenation, effective topical anaesthesia, limitation of repeated attempts and predefined rescue strategies.[1–3]

We report an emergency in which awake flexible fibreoptic nasotracheal intubation was achieved despite postoperative haemorrhage and blood-obscured vision. Beyond the technical challenges, the case illustrates how anxiety and time pressure can affect the operating room team, and why a structured approach and composure remain essential during airway emergencies.

II. Case Report

A 25-year-old man with stage II squamous cell carcinoma of the left lateral border of the tongue (cT2N0M0) underwent left hemiglossectomy with primary closure under general anaesthesia on 17 September 2026. He had not received previous chemotherapy or radiotherapy. On 18 September 2026, emergency re-exploration was required for postoperative neck haemorrhage, followed by tracheostomy.

The emergency occurred at approximately 4 a.m. The patient was anxious and positioned at approximately 45°. He was unable to speak because of the recent tongue surgery and suturing. Examination revealed facial and tongue oedema and severely restricted mouth opening of approximately one finger breadth. The Mallampati score could not be assessed. Neck movement could not be evaluated because the surgical wound was open and an otorhinolaryngology resident was applying pressure over the packed wound. There was no stridor.

Oxygen saturation was maintained at 95–100%, the heart rate was approximately 150 beats/min and blood pressure was 100/66 mmHg, with a mean arterial pressure of 66 mmHg. Blood loss was estimated at 1–1.5 L, based on the clinical assessment and approximately ten blood-soaked gauze pads. Intraoperative arterial blood gas analysis showed a haemoglobin concentration of 7.8 g/dL. Resuscitation included four units of packed red blood cells, two units of fresh frozen plasma and two units of random donor platelets.

The combination of recent tongue surgery, facial and tongue oedema, restricted mouth opening and active bleeding indicated an anticipated difficult airway. Conventional laryngoscopy was considered potentially challenging. The surgical team also had concerns regarding the feasibility of immediate tracheostomy because of the oedema and operative-site changes. An awake flexible fibreoptic approach was selected, with cricothyrotomy and tracheostomy considered rescue options. An Ambu flexible endoscope was prepared.

The patient received nebulised 4% lignocaine and intravenous glycopyrrolate 0.2 mg. Preoxygenation was performed for approximately four minutes before the attempts, with the inspiratory oxygen concentration allowed to exceed 90% before proceeding. Supplemental oxygen was delivered continuously at 15 L/min through tubing connected to an auxiliary oxygen flowmeter and positioned near the patient's mouth. The patient remained oxygenated throughout the attempts.

During the first attempt, the flexible bronchoscope was advanced through the right nostril and reached the vocal cords. However, the endotracheal tube could not be advanced through the right nostril. The surgical team reported that they had also encountered difficulty passing a Ryle's tube through that side. The precise cause of the nasal passage difficulty was not established; a narrow nasal passage or anatomical variation, such as a nasal spur, remained possible explanations.

A Ryle's tube already occupying the left nostril was removed, and a second attempt was made through the left nostril. Blood repeatedly obscured the fibreoptic view. Orientation was maintained by identifying the darker region corresponding to the airway lumen and following it towards the glottis. Lignocaine 2% was administered using the spray-as-you-go technique, with 2 mL delivered at each of four airway levels, for a total of 8 mL.

After glottic visualisation, a 6.5-mm endotracheal tube initially met resistance during advancement over the bronchoscope. The tube was not advanced forcefully. Successful nasotracheal intubation was subsequently achieved through the left nostril. Oxygen saturation remained between 95% and 100%, without documented desaturation.

Tracheal placement was confirmed by a sustained end-tidal carbon dioxide waveform and bilateral air entry on auscultation. Following confirmation, propofol 40 mg, rocuronium 50 mg and fentanyl 100 micrograms were administered. Anaesthesia was maintained with sevoflurane, titrated according to haemodynamics. The bleeding feeding vessel was identified and ligated. The procedure was completed with tracheostomy, and neuromuscular blockade was reversed with sugammadex 2 mg/kg. Written informed consent for publication was obtained from the patient.

III. Discussion

This case demonstrates the interaction of anatomical difficulty, visual impairment and human factors during emergency airway management following head-and-neck surgery. The patient had several concerning features: recent tongue surgery, facial and tongue oedema, severely restricted mouth opening, active haemorrhage and inability to assess neck movement. Although oxygen saturation was preserved and stridor was absent, these findings did not exclude the possibility of rapid deterioration.

Awake tracheal intubation is an established strategy when a difficult airway is anticipated and maintaining spontaneous ventilation during airway securement is desirable.[1,2] However, blood contamination may substantially reduce the utility of flexible endoscopy by obscuring anatomical landmarks. In this case, the darker airway lumen provided a visual cue that helped maintain orientation. This observation is specific to the encounter and should not be interpreted as a validated or universally reliable method. Blood-obscured vision requires continual reassessment, and the operator must be prepared to stop or change strategy if safe progress is not possible.

The first attempt also illustrates the distinction between endoscopic access and nasal tube passage. Although the bronchoscope reached the vocal cords through the right nostril, the endotracheal tube could not be advanced through that nostril. The history of difficulty passing a Ryle's tube on the same side provided a practical reason to reconsider the route. Removing the Ryle's tube from the left nostril allowed the subsequent attempt to proceed through that side. The cause of the right-sided difficulty remains uncertain, and a nasal spur or narrow passage should be regarded only as a possible explanation. This case reinforces that successful bronchoscope advancement does not guarantee passage of the larger endotracheal tube.

Similarly, visualisation of the glottis does not ensure uncomplicated advancement of the tube. Resistance should prompt reassessment rather than forceful advancement, particularly in a recently operated and potentially friable airway. Repeated instrumentation can cause trauma and bleeding, further compromising

visibility. Difficult-airway guidelines emphasise limiting attempts, maintaining oxygenation and ensuring access to an appropriate rescue strategy.[1–3]

An additional lesson concerns the psychological environment in which the procedure occurred. At approximately 4 a.m., the patient was anxious, the surgical team was under pressure to control active bleeding, and the consequences of losing airway access were potentially serious. Anxiety within a team can influence communication, attention and decision-making. The anaesthesiologist's responsibility in such circumstances extends beyond technical performance to maintaining a clear plan, communicating priorities, reassessing progress and avoiding unnecessary escalation of urgency into haste. These principles are consistent with broader lessons from major airway complications and airway-safety guidance.[3],[4]

The successful outcome should not be attributed to composure alone. It depended on preparation, oxygen delivery, topical anaesthesia, selection of an awake technique, recognition of the difficulty with the first nostril, reassessment and confirmation of tracheal placement before induction of general anaesthesia. The availability of surgical rescue options was also an important part of the plan.

The principal limitations of this report are its single-patient nature and the inability to establish the anatomical cause of nasal tube-passage difficulty. The precise volume of nebulised lignocaine, the lowest end-tidal oxygen concentration, the exact duration of each attempt and longer-term postoperative follow-up should be added if documented. Fibreoptic images may further clarify the visual challenge and should be included only after careful selection and de-identification.

The phrase that remained with us was: "When everything turns red, follow the black—but never stop reassessing." It is a personal reflection rather than a validated technical rule. The lesson is not that a darker visual cue can replace anatomy or judgement, but that when visibility deteriorates, clinicians must use available information cautiously while remaining prepared to change course.

IV. Conclusion

Emergency airway management following head-and-neck surgery requires preparation, continuous oxygenation, careful reassessment and a predefined rescue strategy. Blood-obscured flexible endoscopy and inability to advance an endotracheal tube despite glottic visualisation can complicate an already difficult airway. In high-pressure circumstances, composure and clear communication help clinicians apply these principles systematically. The central lesson is simple: follow the available cues, trust the fundamentals and never stop reassessing.

References

[1]. Ahmad I, El-Boghdadly K, Bhagrath R, Hodzovic I, McNarry AF, Mir F, et al. Difficult Airway Society guidelines for awake tracheal intubation (ATI) in adults. Anaesthesia. 2020;75:509–528. doi:10.1111/anae.14904.

[2]. Apfelbaum JL, Hagberg CA, Connis RT, Abdelmalak BB, Agarkar M, Dutton RP, et al. 2022 American Society of Anesthesiologists Practice Guidelines for Management of the Difficult Airway. Anesthesiology. 2022;136:31–81. doi:10.1097/ALN.0000000000004002.

[3]. Myatra SN, Shah A, Kundra P, Patwa A, Ramkumar V, Divatia JV, et al. All India Difficult Airway Association 2016 guidelines for the management of unanticipated difficult tracheal intubation in adults. Indian J Anaesth. 2016;60:885–898. doi:10.4103/0019-5049.195485.

[4]. Cook TM, Woodall N, Frerk C; Fourth National Audit Project. Major complications of airway management in the United Kingdom: results of the Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society. Part 1: anaesthesia. Br J Anaesth. 2011;106:617–631. doi:10.1093/bja/aer058.

[5]. Inoue S, Fujimoto Y, Kawano Y, Furuya H. Difficult passage of the endotracheal tube and massive nasal bleeding during awake nasal fiberoptic intubation in a patient with airway obstruction caused by neck hematoma—a case report. Middle East J Anaesthesiol. 2011;21:125–127. PMID: 21991746.

[6]. Hebbar KC, Nagarajappa A, Chandramouli M, Anvi. Extensive supraglottic mass—An anesthetist's nightmare. Saudi J Anaesth. 2025;19:131–133. doi:10.4103/sja.sja_466_24.