

Unexpected Difficult Airway During Elective General Anesthesia in a Patient With Reassuring Preoperative Airway Assessment: A Case Report

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ABSTRACT

Difficult airway management remains one of the most critical safety concerns in anesthesia. Although structured preoperative airway assessment can identify many high-risk patients, difficult laryngoscopy or intubation may still occur in patients with apparently reassuring airway features. This case report describes an unexpected difficult airway encountered during elective general anesthesia and highlights the importance of preparation, early escalation, video laryngoscopy, oxygenation-first decision-making, and post-event airway documentation. A 40 year old male patient presented for elective abdominal surgery under general anesthesia. Preoperative airway examination was reassuring, with Mallampati class II, full neck extension, and no history of difficult intubation, obstructive sleep apnea, facial trauma, or prior airway surgery. After standard monitoring, preoxygenation, induction, and neuromuscular blockade, direct laryngoscopy revealed a Cormack-Lehane grade III view despite optimal positioning and external laryngeal manipulation. Mask ventilation remained adequate. A second attempt using video laryngoscopy improved visualization, but endotracheal tube advancement was difficult because of an anterior larynx and limited glottic access. A bougie-assisted technique allowed successful tracheal intubation. Correct placement was confirmed with continuous waveform capnography and bilateral chest auscultation. The surgery proceeded uneventfully. The patient was extubated awake after meeting standard criteria and had no postoperative airway complications. This case emphasizes that a normal airway examination does not eliminate the risk of difficult intubation. Anesthesia teams should maintain a prepared difficult-airway plan for every general anesthetic, prioritize oxygenation, limit repeated attempts, escalate early to advanced airway devices, and clearly document the event for future anesthetics.

Keywords: Difficult airway; Unexpected difficult intubation; Video laryngoscopy; Bougie; Airway management; Anesthesia; Case report

INTRODUCTION

Airway management is a central responsibility in anesthesia practice, and failure to secure or maintain the airway can result in severe morbidity or mortality. Preoperative airway assessment commonly includes Mallampati classification, mouth opening, thyromental distance, mandibular protrusion, neck mobility, body habitus, dentition, and history of prior difficult airway. However, no single bedside test reliably excludes difficult laryngoscopy or difficult tracheal intubation. Recent evidence continues to show that common bedside

airway predictors have limited sensitivity, meaning that some difficult airways remain unanticipated despite careful assessment.^[1]

The American Society of Anesthesiologists difficult airway guidelines emphasize advance planning, availability of difficult-airway equipment, consideration of awake intubation when appropriate, and repeated reassessment of oxygenation and ventilation during airway management.^[2] The Difficult Airway Society also recommends a structured approach to unanticipated difficult intubation, including limiting repeated attempts, maintaining oxygenation, using supraglottic airway rescue when needed, and moving to emergency front-of-neck access if oxygenation cannot be maintained.^[3]

Case reports remain clinically useful when they describe unexpected presentations, diagnostic uncertainty, management challenges, or practical lessons that may improve future patient care.^[4,5] Similar to other reports involving unexpected diagnostic or therapeutic complexity, the present case highlights how an apparently routine clinical scenario can rapidly become a high-risk event requiring structured decision-making and timely escalation.^[6,7]

This report presents an unexpected difficult airway in a patient with a reassuring preoperative airway examination. The case illustrates the practical value of preparation, video laryngoscopy, bougie-assisted intubation, team communication, and post-event documentation.

CASE REPORT

A 40 year old male patient presented for elective abdominal surgery under general anesthesia. The patient's medical history included hypertension, with no prior documented anesthesia complications. The patient denied prior difficult intubation, obstructive sleep apnea, snoring, dysphagia, hoarseness, stridor, cervical spine disease, facial trauma, head and neck radiation, or airway surgery. Preoperative vital signs were stable. Airway examination revealed Mallampati class II, normal mandibular protrusion, full cervical range of motion, and no loose teeth. Based on the airway examination and history, difficult intubation was not anticipated.

In the operating room, standard monitors were applied, including electrocardiography, noninvasive blood pressure, pulse oximetry, and capnography. A difficult-airway cart, video laryngoscope, supraglottic airway devices, bougie, and emergency front-of-neck airway equipment were available in the operating room area according to institutional practice. The patient was positioned in the sniffing position with head elevation. After three to five minutes of preoxygenation, anesthesia was induced with propofol, fentanyl, and rocuronium. Mask ventilation was assessed and found to be adequate with oral airway. Neuromuscular blockade was confirmed clinically.

The first intubation attempt was performed using direct laryngoscopy with a Macintosh blade. Despite optimized positioning, suctioning, and external laryngeal manipulation, the laryngoscopic view was Cormack-Lehane grade III. The epiglottis was visible, and the vocal cords could not be adequately visualized. The attempt was stopped, and mask ventilation was resumed.

A second attempt was performed with a video laryngoscope using a hyperangulated blade. The glottic view improved to Cormack-Lehane grade II but tube delivery remained difficult because of an anterior airway and limited alignment between the oral, pharyngeal, and laryngeal axes. A pre-shaped stylet was used, but the endotracheal tube initially could not be advanced through the glottis. The attempt was again stopped before oxygen desaturation occurred.

The anesthesia team called for additional assistance. Mask ventilation remained adequate. A third attempt was performed using video laryngoscopy with a bougie. The bougie was advanced under video visualization into the trachea, with tactile confirmation by tracheal rings and distal hold-up. A cuffed endotracheal tube was railroaded over the bougie and advanced successfully into the trachea. Correct placement was confirmed by continuous waveform capnography, bilateral chest rise, equal breath sounds, and absence of gastric insufflation.

The remainder of the anesthetic course was uneventful. Intraoperative ventilation remained stable. Hemodynamics were managed with fluids. At the end of surgery, neuromuscular blockade was reversed with neostigmine. The patient was extubated fully awake after meeting extubation criteria. No stridor, airway obstruction, laryngospasm, dental injury, aspiration, or hypoxemia occurred after extubation.

The patient was monitored in the post-anesthesia care unit. A postoperative airway note was entered in the medical record describing the difficult direct laryngoscopy, successful video laryngoscopy with bougie assistance, number of attempts, best view obtained, devices used, and recommended future airway plan. The patient was informed of the difficult intubation and advised to report this history before future anesthetics. At 4 weeks follow up, the patient had no sore throat beyond mild expected discomfort, hoarseness, dysphagia, or respiratory symptoms.

Timeline

Time Point	Event
Preoperative assessment	Reassuring airway exam; difficult intubation not anticipated
Operating room arrival	Standard monitors applied; airway rescue equipment available
Induction	General anesthesia induced after preoxygenation
Attempt 1	Direct laryngoscopy showed poor glottic view
Between attempts	Mask ventilation resumed; oxygenation maintained
Attempt 2	Video laryngoscopy improved view, but tube delivery was difficult
Escalation	Additional help requested; bougie prepared
Attempt 3	Video laryngoscopy with bougie-assisted intubation successful
Intraoperative course	Surgery completed without airway-related complications
Emergence	Awake extubation performed uneventfully
Postoperative care	Difficult-airway documentation completed; patient informed

DISCUSSION

This case demonstrates an important limitation of routine airway screening: a reassuring preoperative airway examination does not rule out difficult intubation. The patient had no clear historical or physical predictors of difficult airway, yet direct laryngoscopy provided an inadequate view. This is clinically important because unexpected difficult intubation can rapidly progress to repeated airway trauma, hypoxemia, failed ventilation, and emergency surgical airway if not managed in a structured manner.^[1,2]

In this case, mask ventilation remained adequate between attempts, allowing time for controlled escalation. The DAS approach to unanticipated difficult intubation emphasizes progression through predefined plans rather than repeated attempts with the same technique. This reduces airway trauma and preserves oxygenation.^[3]

The early use of video laryngoscopy can improve glottic visualization, but visualization alone does not guarantee tube passage. Hyperangulated video laryngoscopy may provide an excellent view while still making tube delivery difficult because of the angle required to reach the glottis. Adjuncts such as a rigid stylet or bougie may be necessary. In this case, bougie-assisted intubation under video visualization allowed successful tracheal access.^[8]

Limiting attempts is essential. Multiple failed attempts increase the risk of bleeding, edema, airway obstruction, and transition from a “can ventilate” to a “cannot intubate, cannot oxygenate” scenario. The Fourth National Audit Project identified major airway complications across anesthesia, intensive care, and emergency settings and remains a major reminder that airway complications are often associated with planning, judgment, communication, and rescue failures rather than equipment failure alone.^[9,10]

This case also raises the question of whether awake intubation should have been used. Based on the available preoperative findings, awake intubation was not clearly indicated before induction. However, once unexpected difficulty was encountered, future anesthetics for this patient should include a lower threshold for awake tracheal intubation or planned video laryngoscopy with adjuncts immediately available. The DAS awake tracheal intubation guideline supports awake intubation when difficult airway management is predicted and loss of airway after induction could be dangerous.^[11]

The broader value of this report lies in its educational message. Case reports are most useful when they describe a clinically unexpected event, explain how the event was managed, and provide practical lessons for future care.^{4,5} Prior published case reports from the referenced author profile have similarly emphasized diagnostic challenges, rapid clinical change, and therapeutic decision-making in rare or complex presentations.^[6,7] Although those reports are not airway-specific, they support the broader academic context that careful reporting of unexpected clinical events can help clinicians recognize risk, avoid delays, and improve future management.

Clinical Takeaway

Unexpected difficult intubation can occur even when the airway examination appears normal. The safest approach is to prepare for difficulty in every anesthetic, maintain oxygenation, avoid repeated unsuccessful

attempts, escalate early to video laryngoscopy or adjuncts, call for help, and document the event clearly for future care.

CONCLUSION

This case highlights an unexpected difficult airway in a patient with no obvious predictors on preoperative assessment. Successful management was achieved through oxygenation-first decision-making, early transition from direct to video laryngoscopy, bougie-assisted intubation, and team-based escalation. Routine airway assessment remains important, but clinicians should recognize its limitations and maintain a clear difficult-airway strategy for every patient undergoing general anesthesia.

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