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Securing the Airway– Awake Intubation in a Patient with Earlier Radical Neck Disection – Case Report

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Abstract

We present a case of management of a difficult airway in a patient with a history of radical neck dissection. The patient underwent a surgical procedure of percutaneous stabilization of the L1 vertebra due to a fracture. Following clinical examination, suspicion of a difficult airway was raised, and management was conducted in accordance with the current guidelines of the American Society of Anesthesiologists (ASA) and the Difficult Airway Society (DAS). Prior to induction of anesthesia, adequate preparation for an awake intubation was performed. In this patient, awake intubation was successfully performed according to established guidelines. Following airway securing, the patient was induced into general balanced anesthesia, and the planned surgical procedure was carried out. Awake intubation is a procedure that should become the gold standard for the management of a difficult airway in patients with a justified suspicion of airway difficulty. It represents a crucial skill that requires continuous training, particularly in elective surgical settings, to ensure appropriate and effective management in emergency airway situations.

Keywords: Difficult Airway, Awake Intubation, Airway Management, Neck Dissection.

Introduction

Airway management in patients with a history of radical neck dissection represents a significant anesthetic challenge. Extensive neck surgery may lead to anatomical distortion, fibrosis, and reduced neck mobility, all of which increase the risk of difficult ventilation and tracheal intubation. Failure to recognize and appropriately manage a potentially difficult airway can result in serious perioperative complications.

Awake tracheal intubation is a well-established technique for securing the airway in patients with anticipated difficult airways, as it preserves spontaneous ventilation and allows continuous assessment of airway patency. Despite its advantages, awake intubation is infrequently performed and requires careful patient selection, preparation, and expertise. We report a case of successful awake intubation in a patient with a history of radical neck dissection, emphasizing the importance of thorough preoperative evaluation and individualized airway management planning.

Case Presentation

Airway management in patients with a history of radical neck dissection represents a significant anesthetic challenge. Extensive neck surgery may result in anatomical distortion, fibrosis, and reduced neck mobility, all of which increase the risk of difficult ventilation and tracheal intubation. Failure to recognize and appropriately manage a potentially difficult airway can lead to serious perioperative complications. Awake tracheal intubation is a well-established technique for securing the airway in patients with anticipated difficult airways, as it preserves spontaneous ventilation and allows continuous assessment of airway patency [1-4].

We report a case of successful awake fiberoptic intubation in a patient with a history of radical neck dissection, emphasizing the importance of thorough preoperative evaluation, careful preparation, and individualized airway management planning.

A male patient born in 1967 was scheduled for percutaneous

stabilization of the L1 vertebra due to an unstable vertebral fracture. His medical history was significant for previous radical neck dissection, atrial fibrillation, type 2 diabetes mellitus, arterial hypertension, hyperlipoproteinemia, ischemic heart disease, chronic kidney disease, and chronic gastritis. Preoperative assessment classified the patient as American Society of Anesthesiologists (ASA) physical status IV, with an estimated functional capacity of less than 4 metabolic equivalents (METs).

The patient had a body weight of 140 kg and a height of 180 cm, corresponding to a body mass index (BMI) of 43.2 kg/m². Preoperative airway assessment revealed a Mallampati class III, with a mouth opening of approximately 4 cm. Cervical spine examination demonstrated preserved neck extension. The thyromental distance was greater than 6 cm, and a prominent chin was noted. Despite some reassuring airway parameters, the history of previous radical neck dissection raised concern for altered neck anatomy and potential airway difficulty. Based on the overall assessment, the airway was classified as an anticipated difficult airway [5].

Given these findings, an awake fiberoptic tracheal intubation strategy was planned in accordance with current difficult airway management guidelines. Preoperative preparation focused on optimizing patient comfort, maintaining spontaneous ventilation, and minimizing the risk of airway-related complications. Desalivation was achieved using intravenous anticholinergic agents, including glycopyrrolate at a dose of 7–10 µg/kg or atropine at a dose of 7–10 µg/kg. To reduce the risk of regurgitation and aspiration, pharmacological prophylaxis was administered with an H_2 receptor antagonist (ranitidine) in combination with metoclopramide [1].

Topical airway anesthesia was provided to suppress the gag and vomiting reflex and reduce pain stimulus. Lidocaine spray was applied locally to the oral and nasal mucosa, followed by inhalational administration of 4 mL of 4% lidocaine. Additional topical anesthesia was administered using a "spray-as-you-go" technique during fiberoptic bronchoscopy, as previously described for awake intubation techniques [6].

Sedation was carefully titrated to maintain patient cooperation and spontaneous breathing. Sedative and analgesic agents included midazolam, dexmedetomidine, propofol, and remifentanil, consistent with commonly recommended regimens for awake fibreoptic intubation. Awake nasal fiberoptic tracheal intubation was successfully performed without complications. Following confirmation of correct endotracheal tube placement, general anesthesia was induced. The surgical procedure was completed uneventfully. Throughout the operation, the patient remained hemodynamically stable, with no episodes of oxygen desaturation [2-4].

Tracheal extubation was performed at the end of surgery without difficulty. Postoperatively, the patient was monitored in the post-anesthesia care unit, where no airway-related or anesthetic complications were observed. The patient was subsequently transferred to the surgical ward in stable condition.

Discussion

Airway management in patients with a history of radical neck dissection remains challenging due to anatomical distortion, fibrosis, and reduced tissue compliance, which may not be fully appreciated on routine airway assessment. Although some airway parameters in this patient were reassuring, the surgical history raised concern for an anticipated difficult airway. Awake fiberoptic intubation allows preservation of spontaneous ventilation and continuous airway control, making it a safe and effective approach in such high-risk cases. This case highlights the importance of thorough preoperative evaluation, meticulous preparation, and individualized airway management strategies. Awake fiberoptic techniques should be considered early in patients with previous extensive neck surgery, even when standard airway assessment findings appear acceptable [1-4].

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