

Sitting Face-To-Face Awake Intubation as an Alternative to a Difficult Airway: A Case Report

Camila Gomes Dall'Aqua ¹, David Ribeiro do Nascimento ¹, Katharina Lanza Japolino ¹, Marina Ayres Delgado ^{1,*}

¹ Division of Anesthesiology, Department of Surgery, Hospital das clínicas de Belo Horizonte, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

* Correspondence: marina.ayres.delgado@gmail.com.

Abstract: Awake tracheal intubation is an essential skill for anesthesiologists, particularly in trauma cases where standard positioning is not feasible. While the supine sniffing position is commonly employed, the seated approach remains underutilized and lacks standardization despite its advantages. We report the case of a 24-year-old male with a screwdriver lodged in his thoracic spine who was unable to lie down and required urgent surgical intervention. Awake fiberoptic intubation was successfully performed in the seated, face-to-face position using remifentanyl delivered via target-controlled infusion. Contingency plans were established, including readiness for emergent surgical airway access and availability of a second anesthesiologist. The technique enabled safe airway management without compromising spinal stability. General anesthesia was then induced without complications, and the procedure and recovery were uneventful. The patient was discharged without sequelae. This case highlights the practical advantages of awake seated intubation, including improved secretion drainage by gravity and facilitated bronchoscope navigation with minimal manipulation. Familiarity with and training in this technique can enhance patient safety and broaden the anesthesiologist's airway management strategies in complex scenarios.

Citation: Dall'Aqua CG, Nascimento DR, Japolino KL, Delgado MA. Sitting Face-To-Face Awake Intubation as an Alternative to a Difficult Airway: A Case Report. Brazilian Journal of Case Reports. 2025 Jan-Dec;05(1):bjcr95.

<https://doi.org/10.52600/2763-583X.bjcr.2025.5.1.bjcr95>

Received: 30 April 2025

Accepted: 26 June 2025

Published: 30 June 2025

Keywords: Airway Management; Anesthesia; Intubation.



Copyright: This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

1. Introduction

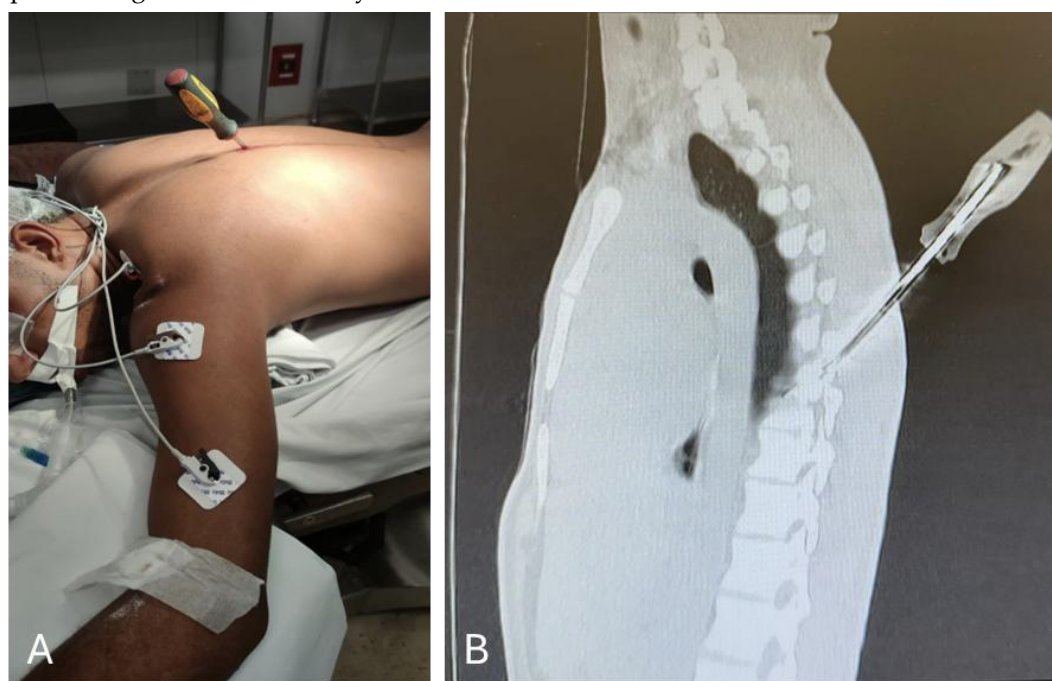
Awake airway management is a critical competency for anesthesiologists, offering well-established benefits such as preservation of upper airway tone and patency, maintenance of spontaneous ventilation, and protection against aspiration through preserved airway reflexes. Indications for awake intubation include anticipated difficult laryngoscopy or intubation, difficult mask ventilation or supraglottic device placement, and high risk of aspiration or rapid desaturation [1]. Additional scenarios, such as facial or airway trauma and cervical spine instability, are frequently encountered in trauma settings.

Patient positioning plays a pivotal role in airway management. The sniffing position in the supine posture, involving cervical flexion and atlanto-occipital extension, aligns the oral, pharyngeal, and laryngeal axes to facilitate visualization. However, this position may not be tolerated by patients with spinal injuries or penetrating trauma. In such cases, alternative approaches must be adopted. Awake fiberoptic intubation in the seated position was first described in 1984 [2], but despite its potential benefits, the technique remains relatively unfamiliar and poorly standardized. Here, we report a case that demonstrates its utility in a trauma patient and propose considerations for safe and reproducible application of this technique.

2. Case Report

A 24-year-old previously healthy male (76 kg) presented to the emergency department after an assault with a screwdriver embedded in his thoracic spine (Figure 1A). He was hemodynamically stable, breathing spontaneously on room air, and able to ambulate. A thoracic computer tomography scan, performed in the prone position, revealed a metallic object lodged in the left pedicle of the seventh thoracic vertebra, obliterating the neural foramen and penetrating the vertebral body (Figure 1B). No additional fractures or mediastinal injuries were identified. Although there were no signs of spinal cord compression, the risk of vertebral instability and secondary neurological injury was significant.

Figure 1. A. Patient in the prone position after successful intubation, with a screwdriver inserted in the thoracic spine. B. Computed tomography revealed a metallic object lodged in the left pedicle of the seventh thoracic vertebra, obliterating the neural foramen and penetrating the vertebral body.



In such cases, repositioning or manipulation of the embedded object may result in acute spinal cord injury through edema, hemorrhage, or direct trauma. Therefore, maintaining spinal alignment during airway management is critical to prevent neurologic deterioration. In the operating room, the awake intubation plan was thoroughly explained to the patient. Airway assessment revealed Mallampati class II, adequate mouth opening and cervical mobility, and normal thyromental distance. The nasopharynx and oropharynx were topicalized with 10% lidocaine spray. The vocal cords were anesthetized using the spray-as-you-go technique with 1% lidocaine through the working channel of the bronchoscope.

Sedation was administered using remifentanyl at 1.5 ng/mL via target-controlled infusion (TCI), chosen for its rapid onset, short context-sensitive half-life, and titratability, enabling patient comfort without compromising spontaneous ventilation. Two anesthesiologists were present: one to perform the intubation and the other to intervene if complications arose. A trained nurse provided lateral support, ensuring the patient remained upright without dorsal contact, which could have aggravated spinal injury. The patient was positioned sitting upright, facing the anesthesiologist (Figure 2). The flexible bronchoscope was introduced orally using a VAMA® cannula. With the bronchoscope-oriented midline and elevated toward the laryngeal inlet, the glottis was visualized. After

identifying the carina, an 8.0 mm endotracheal tube was advanced over the scope, and correct placement was confirmed by capnography.

Figure 2. Schematic illustration showing the patient in a seated, face-to-face position with the anesthesiologist during awake intubation using a flexible bronchoscope.



General anesthesia was induced with 160 mg propofol, 50 mg rocuronium, and 200 mcg fentanyl. The patient was carefully repositioned into a prone position in coordination with the surgical team. The screwdriver was removed under direct visualization, revealing a moderate facet fracture. The surgery proceeded uneventfully. The patient was extubated in the operating room and transferred to the ICU for 24-hour observation. He remained neurologically intact and was discharged home two days later.

3. Discussion

This case illustrates the successful use of awake seated intubation via flexible bronchoscopy in a trauma patient with thoracic spinal impalement, where conventional supine positioning was contraindicated. Seated positioning offered several advantages such as gravitational drainage of secretions, improved visualization of airway structures, and a direct approach to the glottis with minimal manipulation [3]. While previous reports describe seated intubation with the anesthesiologist standing laterally to the patient [2], we adopted a face-to-face technique that improved ergonomics and bronchoscope control, closely replicating the motions used in supine fiberoptic intubation. Although awake face-

to-face intubation has been described using video laryngoscopy, literature specific to flexible bronchoscopy in this orientation is limited [4].

One of the main challenges in this case was the absence of dorsal support, which necessitated careful sedation to maintain airway patency and patient cooperation. In contrast to cases involving mediastinal masses, where patients can remain semi-recumbent with back support, this patient required full vertical positioning without contact (5). Our strategy involved minimal sedation with TCI-remifentanyl and continuous verbal reassurance. Importantly, airway patency was maintained, and no desaturation or airway obstruction occurred.

Following successful intubation and anesthetic induction, careful repositioning into the prone position was executed in partnership with the surgical team, prioritizing spinal protection. This interdisciplinary collaboration is critical in trauma cases with potential spinal instability.

4. Conclusion

Awake intubation in the seated position using flexible bronchoscopy is a viable and effective strategy in selected trauma patients when conventional positioning is not possible. This case underscores the importance of technical preparation, precise sedation, and coordinated teamwork to ensure airway safety and spinal protection. Broader familiarity and training with this technique can enhance the anesthesiologist's toolkit, particularly in complex and high-risk scenarios.

Funding: None.

Research Ethics Committee Approval: Written informed consent was obtained from the patient for the publication of anonymized clinical data and images. The study followed the ethical guidelines established by the Declaration of Helsinki.

Acknowledgments: None.

Conflicts of Interest: None.

References

1. 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.
2. Shapiro HM, Sanford TJ, Schaldach AL. Fiberoptic stylet laryngoscope and sitting position for tracheal intubation in acute superior vena caval syndrome. *Anesth Analg*. 1984;63(2):161–2.
3. Saxena KN, Kumar S, Taneja B, Gaba P. Awake fiberoptic intubation in the sitting position in a patient with a huge goitre. *Case Rep Anesthesiol*. 2011;2011:1–3.
4. Suzuki A, Terao M, Aizawa K, Sasakawa T, Henderson JJ, Iwasaki H. Pentax-AWS airway scope as an alternative for awake flexible fiberoptic intubation of a morbidly obese patient in the semi-sitting position. *J Anesth*. 2009;23(1):162–3.
5. Etemadi SH, Bahrami A, Farahmand AM, Zamani MM. Sitting nasal intubation with fiberoptic in an elective mandible surgery under general anesthesia. *Anesthesiol Pain Med*. 2015;5(6):5–8.