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CASE REPORT

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A Rare Postintubation Complication: Uvula Edema

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Abstract

Postintubation uvular edema is a rare but potentially life-threatening complication that may progress rapidly to airway obstruction if not promptly recognized and managed.

A 64-year-old woman developed significant uvular edema five hours after lumbar spinal surgery performed under general anesthesia. Although endotracheal intubation was uneventful, the patient presented in the postoperative period with progressive sore throat, uvular swelling, and respiratory distress. Initially misdiagnosed as anaphylaxis, she was treated with epinephrine, corticosteroids, and antihistamines. As her symptoms worsened, she was transferred to the intensive care unit, where the treatment regimen was modified to include inhaled epinephrine, cold vapor, and antiemetics. Her condition improved rapidly, and all symptoms resolved completely within 24 hours, with no residual sequelae.

This case highlights the need to consider postintubation uvular edema as a differential diagnosis in patients presenting with acute postoperative airway distress. Furthermore, we propose a novel grading system that incorporates both morphological findings and clinical symptoms, with particular emphasis on airway management strategies. This integrative and practical approach may facilitate early recognition, support individualized treatment decisions, and ultimately enhance patient safety.

Keywords: Airway obstruction, Anesthesia, Endotracheal intubation, Postintubation uvular edema

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Introduction

Postintubation uvular edema is a rare but serious complication following airway manipulations [1]. It is an important clinical presentation that requires careful evaluation and management, especially in the postoperative period, as it carries the risk of airway obstruction. In this case report, a scoring system for postintubation uvular edema is proposed, treatment approaches are presented and a comparative analysis with the existing literature is performed.

Case Report

A 64-year-old woman, weighing 80 kg, 160 cm tall, with no known history of comorbidities, was admitted for lumbar instrumentation. In the preoperative evaluation, the patient's Mallampati score was determined as II and she had a short and thick neck structure. A single, successful intubation was performed by laryngoscopy using a 7.0 endotracheal tube. Afterwards the patient was positioned into prone position during surgery and the operation lasted approximately 3 hours. Following the completion of surgery, the patient was extubated and transferred to the postoperative neurosurgery ward in a stable condition. For postoperative analgesia, 50 mg of dexketoprofen trometamol was administered intravenously. At the 5th postoperative hour, the patient developed respiratory distress, and the Mallampati score increased to III. Additionally, significant edema was observed in the uvula. Respiratory examination revealed marked tachypnea and increased intercostal retractions. The patient's overall vital signs remained stable, with blood pressure 128/76 mmHg, heart rate 84 beats/min, respiratory rate 22 breaths/min, and oxygen saturation 94% while receiving oxygen via nasal cannula at 6 L/min. She was afebrile. Oropharyngeal examination via direct laryngoscopy demonstrated a prominently swollen and edematous uvula without signs of necrosis. Based on these findings, subcutaneous administration of 0.5 mg adrenaline was performed with a preliminary diagnosis of anaphylaxis. In addition, intravenous methylprednisolone at a dose of 1 mg/kg and 10 mg of intravenous chlorpheniramine maleate were administered as part of the acute management.

Due to the persistence of throat discomfort, nausea, and tachypnea, the patient was transferred to the intensive care unit (ICU) for close monitoring. In the ICU, a diagnosis of postintubation uvular edema was confirmed. The treatment plan was revised accordingly. To reduce airway edema, 1 mg of epinephrine diluted in 3 mL of normal saline was administered via nebulization, and cold vapor inhalation therapy was initiated simultaneously. For nausea control, 8 mg of ondansetron was administered intravenously. Airway images presented in Figure 1, obtained at 0, 8 and 16 hours during ICU follow-up. At the end of 24 hours, clinical improvement was evident, and the patient was transferred to the ward and was discharged after a total hospitalization of 10 days with complete recovery. At follow-up one month after discharge, the patient remained symptom-free without recurrence of uvular edema or airway-related complaints. Written informed consent was obtained from the patient for the publication of this case report.

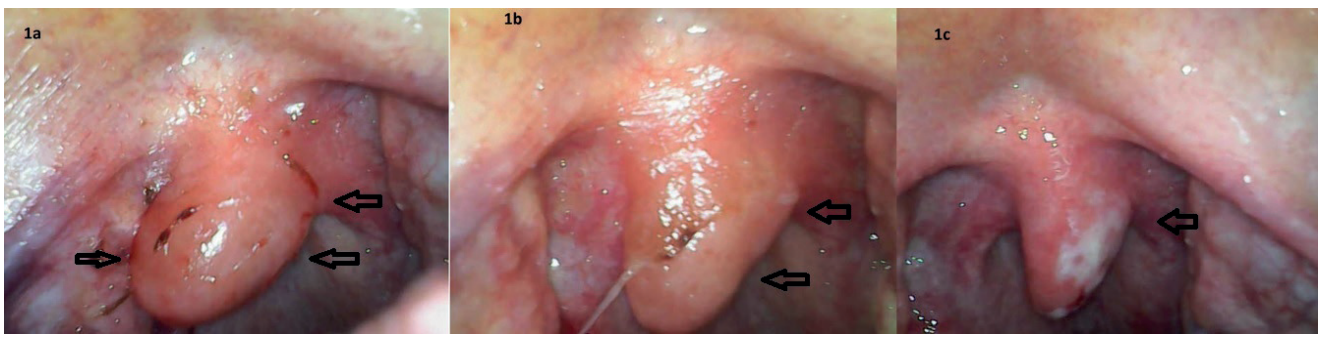

Figure 1: Serial images of uvular edema during intensive care unit follow-up.
(1a) At ICU admission (0 h), marked uvular edema is observed. (1b) At 8 h, persistent swelling without significant regression is noted. (1c) At 16 h, clear regression of edema is evident, with improvement in airway patency. Arrows indicate the site of uvular edema. Written informed consent for publication of the images was obtained from the patient

Table 1. Proposed Grading System for Uvular Injury

Grade	Description	Treatment approach
I	• Uvula appears swollen, translucent, and shiny with increased turgor. Minimal erythema, no evidence of surrounding inflammation. Patients typically present with mild sore throat or discomfort.	• Conservative management: cold vapor inhalation, saline gargles, topical anesthetics (e.g., lidocaine). Oral antihistamines and nonsteroidal anti-inflammatory drugs (NSAIDs) may be added if necessary.
II	• Uvula is prominently swollen and enlarged, with erythema and signs of inflammation. Surrounding tissues (e.g., soft palate) may be affected, and small ecchymoses can be observed. Mild respiratory distress or dysphagia may occur.	• In addition to conservative measures: systemic or local corticosteroids, antihistamines. Oral or intravenous antibiotics when indicated.
III	• Well-demarcated necrotic areas on the uvula. The uvula may appear compressed due to adjacent tissue pressure. Patients present with moderate to severe respiratory distress and significant sore throat.	• Systemic corticosteroids, intravenous antihistamines, and antibiotics. Supportive therapy with cold vapor and inhaled epinephrine. Endotracheal intubation should be considered if airway patency is compromised.
IV	• Necrotic uvula with marked deformation, irregular or shortened edges. Uvular autoamputation may occur. Severe respiratory distress or imminent risk of airway obstruction is present.	• Airway security is critical: intubation or tracheostomy may be required. Surgical excision of necrotic tissue and microsurgical reconstruction if necessary. Monitoring under intensive care conditions is recommended.

Discussion

Postintubation uvular edema is a rare complication, usually following airway manipulations, but can lead to severe airway obstruction. Since this condition may cause obstruction of the patient's airway after intubation, it constitutes an emergency requiring early diagnosis and rapid intervention. Although the etiology of uvular edema includes infections, allergic reactions and angioneurotic edema, it is a rare complication of anesthesia and the definitive diagnosis may be missed in the initial evaluation [1].

In the literature, various risk factors such as male gender and having a large uvula have been described in the development of postintubation uvular necrosis [2-4]. It is thought that the injury is most likely develop as a result of compression of the uvula between the surrounding tissues, which results in ischemia, inflammation and necrosis [5]. In this case, a short and thick neck was observed in a patient with a preoperative Mallampati score of II. It is suggested that the uvular edema observed after surgery may be associated with the influence of these anatomical characteristics. In addition, the prone position may be a predisposing factor for the development of uvular edema by increasing the pressure of the endotracheal tube on the uvula. This case highlights the potential effects of surgical position as well as Mallampati score and neck morphology on the risk of postintubation uvular edema.

Treatment of uvular edema typically involves the use of pharmacological agents, including corticosteroids, antihistamines, and antibiotics, in combination with supportive mechanical methods such as cold steam inhalation and nebulized epinephrine. [6-9]. In this case, intravenous methylprednisolone, antihistamines, cold vapor, and inhaled epinephrine were administered in the postoperative period due to worsening symptoms, resulting in successful recovery. Although such treatment combinations are generally reported to be effective in the literature, the optimal therapeutic protocol remains controversial and should be tailored to individual patient characteristics.

Zameer and colleagues developed a grading system to classify uvula injuries [10]. We believe that such grading systems are extremely valuable to optimize treatment and guide clinical management more effectively. The classification of Zameer et al. focused mainly on morphologic descriptions and did not include clinical symptoms (sore throat, respiratory distress, dysphagia). Furthermore, we suggest that airway management should be addressed more comprehensively, with particular emphasis on intervention strategies including intubation and tracheostomy. To address these gaps, we proposed a novel grading system. (Table 1).

Compared with the classification proposed by Zameer et al., our system shows several important differences. Zameer's grading primarily relies on morphological appearance of uvular injury (edema, uvulitis, necrosis, auto-amputation). In contrast, our proposed system broadens the scope by incorporating clinical symptoms (sore throat, dysphagia, respiratory distress) and placing stronger emphasis on airway management considerations (e.g., the need for intubation or tracheostomy). Furthermore, our classification provides more detailed treatment recommendations tailored to both symptom severity and airway risk. This integrated approach may improve early recognition and guide timely intervention, offering a more practical framework than morphology-based descriptions alone.

The proposed scoring system addresses both morphological features and patient-related factors, including symptoms and airway risk. This approach goes beyond visual inspection to provide a more comprehensive assessment that includes clinical findings and more accurately guides treatment planning. For situations where airway management is critical, a predetermined strategy allows for rapid and effective emergency interventions. Furthermore, more detailed identification of advanced stages enables an informed approach to treatment and accurate monitoring of disease progression.

Conclusion

Early recognition and prompt intervention of uvular edema in the postoperative period are of vital importance. This case underscores the critical role of accurate diagnosis and timely management, particularly in the context of progressive respiratory distress. Clinicians should remain vigilant, as postintubation uvular edema may develop rapidly in patients requiring intensive care monitoring. The therapeutic strategies employed in this case were effective, and similar treatment protocols may serve as a practical guide in comparable clinical situations.

Ethic / Informed Consent

Consent was obtained from the patient.

Data Availabity Statement

The data sets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Disclosure

The authors report no potential conflicts of interest with respect to the research, authorship, or publication of this article.

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References

1. Freedman ZG, Xu KL, McAlevy ME, Clark JY. Uvula Trauma and Damage: If You Don't Look, You Won't Find It: A Case Report. Perioper Care Oper Room Manag. 2024 Jun;35:100381.

2. Bright MR, Concha Blamey SI, Beckmann LA, Culwick MD. Iatrogenic uvular injury related to airway instrumentation: A report of 13 cases from the webAIRS database and a review of uvular necrosis following inadvertent uvular injury. Anaesth Intensive Care. 2021 Mar 8;49(2):133–9.

3. Xiao M, Kaufman DI, Abrams GD. Uvular Necrosis After Shoulder Surgery: A Report of Three Cases.

Cureus. 2021 Mar 31;

4. Emmett SR, Lloyd SD, Johnston MN. Uvular trauma from a laryngeal mask. Br J Anaesth. 2012 Sep;109(3):468–9.

5. Harris M, Kumar M. A rare complication of endotracheal intubation. The Lancet. 1997 Dec;350(9094):1820–1.

6. Ziahosseini K, Ali S, Simo R, Malhotra R. Uvulitis following general anaesthesia. BMJ Case Rep. 2014 Sep 23;bcr2014205038.

7. Bhargava S, Wani Z, Sharma M. Uvular trauma caused by endotracheal tube. J Neuroanaesth Crit Care. 2017;4(3):183.

8. Neustein SM. Acute uvular edema after regional anesthesia. J Clin Anesth. 2007 Aug;19(5):365–6.

9. Kim-Fine S, Casiano ER, Jankowski CJ, Gebhart JB. Uvular necrosis after gynecologic surgery: a case report. journal of Anesthesiology and Clinical Science. 2013;2(1):9.

10. Zameer S, Inam SM, Faisal M, Khan HA, Fatima A, Anwar U. Iatrogenic uvular injury after endotracheal intubation: recommendations for clinical practice. Ain-Shams Journal of Anesthesiology. 2023 Jul 27;15(1):54.