

CASE REPORT

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# Postoperative uvular edema after general anesthesia in an adult patient

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## Abstract

**Background:** Acute uvular edema is a rare complication that can present as a very distressing symptom in the postoperative period after general anesthesia. It can even cause respiratory compromise and airway obstruction.

**Case presentation:** A case of acute uvular edema following general anesthesia with endotracheal intubation is reported along with its management, review of literature, and preventive strategies.

**Conclusions:** Acute uvular edema should be considered in the differential diagnosis of postoperative airway-related complications. Anesthesiologist should be aware of its possible occurrence and meticulously employ strategies to prevent this complication. In the event of its diagnosis, uvular edema should be managed promptly to avoid patient discomfort and adverse outcomes.

**Keywords:** Uvula, Edema

## Background

Acute uvular edema, not a very well-known complication, can present as a very distressing symptom in the postoperative period after general anesthesia. It can even cause respiratory compromise and airway obstruction. A case of acute uvular edema following general anesthesia is reported along with review of the literature and strategies to prevent this complication.

## Case presentation

A written and informed consent was obtained from the patient for publication of his clinical details in a medical journal. The case was studied in a tertiary care hospital at New Delhi.

A 32-year-old male weighing 60 kg, 165 cm tall, with a fracture in the mid-shaft of the left humerus was posted for open reduction and internal fixation. He had no significant past history and no history of substance abuse or drug allergy (American Society of Anesthesiologist physical status I). Airway assessment revealed Mallampati class 2 and normal neck movements. He received general anesthesia. On laryngoscopy, his Cormack-Lehane grade was 1. The trachea was intubated easily with 8 mm internal diameter cuffed polyvinyl chloride tracheal tube using Macintosh

laryngoscope blade size 3 after intravenous (iv) induction of general anesthesia with midazolam 1.5 mg, fentanyl 120 µg, and propofol 120 mg along with vecuronium bromide 6 mg to obtain neuromuscular blockade. At the end of surgery that lasted for 2 h, neuromuscular blockade was reversed with glycopyrrolate 0.5 mg and neostigmine 2.5 mg. The trachea was extubated once the patient was awake, and he was shifted to the recovery room.

Two and a half hours following surgery, an anesthesiologist was called as the patient complained of severe discomfort in the throat. He had foreign body sensation like a lump in the throat which was irritating the tongue with pain on swallowing his saliva. His vital signs were stable, and there was no clinical evidence of airway compromise or allergic reaction. On examination of the oral cavity, the uvula was much elongated (around 3.5 cm) and looked inflamed, resting on the posterior tongue. Adjacent oropharyngeal structures (palate, tonsils, and pharynx) were normal. The patient was reassured and given iv dexamethasone 8 mg and chlorpheniramine maleate 25 mg. He was advised warm saline gargles six-hourly interval, iv antibiotics, and two more doses of dexamethasone 8 mg, diclofenac sodium 75 mg, and acetaminophen 650 mg at eight-hourly interval. Postoperative complete blood count was normal. Patient was symptomatically better the following day. The patient was discharged home as the uvular edema regressed after 48 h, with the uvula regaining its

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normal appearance. The event delayed the discharge of the patient from the hospital by 24 h.

### Discussion

Postoperative sore throat is a common morbidity following endotracheal intubation. On postoperative visit, the patient gave history of upper respiratory infection 2 weeks back for which he took antibiotics, but it was not revealed by the patient at the time of preoperative visit. He was symptom-free at the time of preoperative visit, and his airway examination was unremarkable. Trauma to the uvula might have occurred by direct pressure from the endotracheal tube though it was fixed at the angle of the mouth on the right side away from the midline. Other possible etiologies might be trauma from laryngoscope blade or blind suctioning at the time of extubation. Other medical causes of uvular edema are infections (bacterial or viral), allergic or hereditary angioneurotic edema were not responsible in the present case.

Postoperative uvular edema has been reported in a child after general anesthesia via a laryngeal mask airway (Huang and Chui 2014) and following tonsillectomy in a child with a history of obstructive sleep apnea (Nasr et al. 2008). It has also been described in two adult patients undergoing upper limb surgery under interscalene brachial plexus block with deep intravenous sedation as a result of intraoperative snoring (Neustein 2007; Miller and Gerhardt 2006). There was also a report of acute uvular edema leading to postoperative airway obstruction and admission to hospital in a healthy young adult who inhaled marijuana prior to general anesthesia after an uneventful general anesthesia (Mallat et al. 1996). Postoperative swollen and elongated uvula after general anesthesia occurred in a patient in a prone position as a result of possible mechanical trauma (Rempf et al. 2008). Uvular necrosis is reported after an otherwise uneventful intubation and anesthesia (Atkinson et al. 2006). The patient was conservatively treated with analgesics and antibiotics and made a complete recovery. Complete airway obstruction after extubation occurred in a child after traumatic adenoidectomy due to uvular edema leading to tracheal reintubation (Tabboush 2000). There are reports of uvular edema with oral airway (Shulman 1981), nasogastric tube (O'Connor and Coughlan 1993), and intubation with Bullard laryngoscope (Christodoulou and Friesen 2004). Significant uvular and oropharyngeal ulceration has been described in two patients during routine transesophageal echocardiography while intubated under general anesthesia (Nijjer et al. 2009).

The aim of this case report is to create awareness among anesthesiologists that uvular edema can manifest in the postoperative period as a distressing complication. It is to be considered in the differential diagnosis of postoperative airway obstruction and sore throat

particularly if associated with a foreign body sensation or difficulty in swallowing. Diagnosis can be made by prompt oral cavity examination. Steroids and antihistamines are the main stay of treatment along with antibiotics and topical adrenaline administration in selective cases (Raux et al. 1999). As uvular edema can lead to extreme distress to the patients, they should be given an explanation of the condition, reassured that the symptoms would resolve within a few days, offered treatment, and followed up. Severe cases with airway obstruction may need tracheal intubation. The uvula being a freely hanging midline structure in the oropharynx is vulnerable to injury due to a compression by an oral or nasal endotracheal tube, laryngeal mask airway, nasogastric tube, transesophageal probe, oropharyngeal packing, blind suctioning, or laryngoscope blade. Strategies to prevent this complication include avoiding mechanical trauma to the uvula during laryngoscopy, intubation, oropharyngeal suctioning, placement of nasogastric tubes, and oropharyngeal packing and positioning of endotracheal tube to one side during orotracheal intubation, so that the endotracheal tube does not abut on the uvula. Snoring as a result of deep sedation in patients under regional anesthesia can lead to uvular edema, and hence, care must be taken by an anesthesiologist (Neustein 2007; Miller and Gerhardt 2006). In an ideal scenario, suctioning of the oral cavity should be done under direct vision. But this is not always feasible immediately prior to extubation when the airway reflexes and muscle tone have returned. Care should be taken to use the lowest power of suction that produces optimal results and minimizes trauma to oropharyngeal structures.

### Conclusions

Acute uvular edema should be considered in the differential diagnosis of postoperative airway related complications. Anesthesiologist should be aware of its possible occurrence and meticulously employ strategies to prevent this complication. In the event of its diagnosis, uvular edema should be managed promptly to avoid patient discomfort and adverse outcomes.

### Abbreviations

iv: Intravenous

### Author's contributions

I, RG, certify that I have participated in the intellectual content, conception, and design of this work as well as writing of the manuscript, to take public responsibility for it and have agreed to have my name listed as the sole contributor author.

### Ethics approval and consent to participate

Not applicable

### Consent for publication

Written and informed consent of the patient for publication was obtained.

**Competing interests**

The author declares that she has no competing interests.

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**References**

- Atkinson CJ, Rangasami J, Slough UK (2006) Uvular necrosis—an unusual cause of severe postoperative sore throat. *Br J Anaesth* 97(3):426–427
- Christodoulou C, Friesen J (2004) The Bullard laryngoscope and uvular edema. *Can J Anesth* 51:401–402
- Huang J, Chui I (2014) Postoperative uvular edema in a child after general anesthesia via a laryngeal mask airway. *A A Case Rep* 2(4):37–38
- Mallat A, Roberson J, Brock-Utne JG (1996) Preoperative marijuana inhalation—an airway concern. *Can J Anesth* 43(7):691–693
- Miller RJ, Gerhardt MA (2006) Uvular edema secondary to snoring under deep sedation. *Anesth Prog* 53(1):13–16
- Nasr VG, Bitar MA, Chehade JM, Dagher WI, Baraka AS (2008) Postoperative severe uvular edema following tonsillectomy in a child with a history of obstructive sleep apnea. *Pediatr Anesth* 18(7):673–675
- Neustein SM (2007) Acute uvular edema after regional anesthesia. *J Clin Anesth* 19:365–366
- Nijjer S, Crean A, Li W, Swan L (2009) Uvular ulceration following transoesophageal echocardiography. *BMJ Case Rep* 2009:1565
- O'Connor TC, Coughlan G (1993) Is uvular edema a complication of nasogastric tube placement? *Anesth Analg* 77:1306
- Raux F, Carrat X, Pescio P, Carles D, Devars F, Traissac L (1999) Uvular edema. Diagnostic, etiologic and therapeutic management. *Rev Laryngol Otol Rhinol* 120:111–114
- Rempf C, Pechlivanis I, Zenz M, Michels M, Schmieder K, Gottschalk A (2008) Swollen and elongated uvula after general anesthesia. *Anesthesist* 57(8):775–778
- Shulman MS (1981) Uvular edema without intubation. *Anesthesiology* 55:82
- Tabboush ZS (2000) Airway obstruction from uvular edema after traumatic adenoidectomy. *Anesth Analg* 90:494

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