

Angioedema of the Tongue Secondary to an Allergic Reaction

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Abstract

Introduction: Tongue swelling is a potentially life-threatening manifestation of allergic reactions, often due to angioedema. Prompt recognition and airway preparedness are essential to prevent airway obstruction. **Case Presentation:** We report the case of an 88-year-old Chinese male who developed acute tongue swelling two hours after consuming food. He had a prior history of tongue swelling following ingestion of cough syrup. On arrival at the emergency department, he was ambulatory with stable vital signs and normal arterial blood gas. There was no associated rash, wheezing, or hypotension. Intravenous hydrocortisone, chlorpheniramine, and ranitidine were initiated, with immediate airway precautions and standby anaesthesia and otolaryngology teams. As the swelling persisted, intravenous dexamethasone was administered after two hours. At six hours, due to unresolved swelling, 0.5 mg of intramuscular adrenaline was given. The patient was subsequently admitted for further monitoring. **Conclusion:** This case highlights the importance of early recognition of tongue swelling as a potential airway emergency, especially in elderly patients. Timely pharmacological intervention and airway preparedness are crucial to ensure favourable outcomes in allergic reactions presenting with angioedema.

Keywords: allergic reaction, tongue swelling, angioedema, airway obstruction, emergency management.

INTRODUCTION

Tongue swelling is an uncommon but potentially fatal presentation of allergic reactions and is typically mediated by angioedema. Causes include food allergies, drug-induced reactions, hereditary angioedema, and idiopathic forms. The risk lies in rapid airway compromise, which may progress without warning.^{1,2} Case reports remain valuable in highlighting diagnostic challenges, appropriate emergency management, and the importance of early airway preparedness.

CASE PRESENTATION

An 88-year-old Chinese male presented to the emergency department at 10:00 pm with acute tongue swelling, which developed approximately two hours after consuming dinner that included fish balls and a pear. He reported a prior episode of tongue swelling several years earlier after ingestion of cough syrup.

On arrival, the patient was able to ambulate independently. His vital signs were stable, with BP 169/84, PR 60, and SpO₂ 96% on room air. Arterial blood gas analysis was normal, with a pH of 7.411, a pCO₂ of 38.9, a pO₂ of 84.5, and bicarbonate content of

24.5 mmol/L. There was no associated rash, wheezing, or hypotension. Examination revealed marked swelling of the anterior two-thirds of the tongue, without lip involvement, and the patient was unable to retract his tongue. (Figure 1)



Figure 1: Tongue swelling on presentation

Given his clinical stability, he was started on 200 mg intravenous hydrocortisone, 10 mg intravenous chlorpheniramine, and 50 mg intravenous ranitidine at 10:30 pm. Immediate airway precautions were

taken, with anaesthesia and otolaryngology teams placed on standby.

Otolaryngology teams reported that the vallecula was mildly oedematous, the epiglottis was clear, the aryepiglottic fold was oedematous, the bilateral arytenoids were oedematous, the bilateral lateral pharyngeal wall to the pyriform fossa was oedematous, and the bilateral vocal cords were mobile. (Figure 2 and Figure 3)

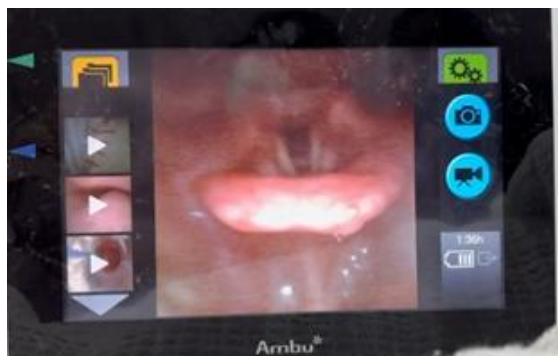


Figure 2: Laryngoscopic view showing oedema of the aryepiglottic folds and arytenoids.

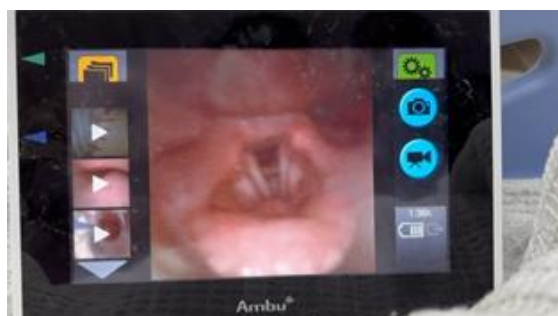


Figure 3: Oedema of the lateral pharyngeal walls and pyriform fossae.

At 12:30 am, as the swelling did not improve, intravenous dexamethasone was administered. At 3:00 am, due to persistent tongue swelling, 0.5 mg of intramuscular adrenaline was administered, after which the patient's condition improved significantly, and he regained the ability to retract his tongue.

The patient was subsequently admitted to the ward for further monitoring and management. A few days after admission, the patient was discharged with an antihistamine and an oral corticosteroid. (Figure 4)



Figure 4: Tongue swelling resolved prior to discharge.

Discussion

Tongue swelling in the emergency setting poses a critical threat due to the risk of rapid airway obstruction. Airway-compromising features include progressive tongue enlargement, inability to retract the tongue, stridor, voice changes, drooling, and supraglottic involvement.¹ In this case, the patient demonstrated significant tongue swelling and endoscopic evidence of supraglottic oedema, warranting immediate airway preparedness with anaesthesia and otolaryngology standby. The temporal relationship with food ingestion, together with a previous history of drug-related tongue swelling, suggested an allergic etiology. Nonetheless, other differential diagnoses, such as hereditary angioedema, ACE-inhibitor-induced angioedema, and idiopathic forms, should be considered, particularly in elderly patients.² International guidelines, including the World Allergy Organisation (WAO) 2020 update and Resuscitation Council UK (RCUK) 2021 recommendations, emphasise intramuscular adrenaline as the first-line treatment for airway-threatening allergic reactions.^{1,3} In this patient, adrenaline administration was delayed owing to initial clinical stability and preserved oxygenation, leading the team to trial corticosteroids and antihistamines while preparing for potential airway intervention. However, significant improvement occurred only after intramuscular adrenaline, reinforcing its role as the cornerstone of management even in the absence of systemic features such as hypotension, urticaria, or bronchospasm.^{1,3} Elderly patients represent a high-risk group, as comorbidities, atypical presentations, and reduced physiological reserves may complicate both diagnosis and treatment. Early multidisciplinary involvement, vigilant monitoring, and readiness for definitive airway intervention are crucial.^{2,3} Upon discharge, patients should be provided with an epinephrine autoinjector and education on its use, along with referrals for allergy evaluation to determine potential triggers and preventive strategies.¹

CONCLUSION

Tongue swelling due to an allergic reaction should always be regarded as a potential airway emergency. This case highlights the importance of early recognition, adherence to guideline-based pharmacological management with intramuscular adrenaline, and preparedness for airway intervention to ensure patient safety.^{1,3}

DECLARATIONS

Conflict of interest

The authors declare that they have no conflicts of interest.

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying clinical images.

Ethics approval

Ethics approval was not required for this case report, per institutional guidelines, as it is a single descriptive case report with patient consent obtained.

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LESSONS FROM PRACTICE

- Tongue swelling should always be considered a potential airway emergency in the emergency department.
- Intramuscular adrenaline is the first-line treatment for airway-threatening allergic reactions, even in the absence of systemic anaphylaxis.^{1,3}
- Early multidisciplinary involvement, including anaesthesia and otolaryngology standby, is critical for managing angioedema.²
- Elderly patients require close monitoring, as comorbidities and atypical presentations may increase the risk of complications.²