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Isolated Uvular Angioedema Triggered by Peanut Allergy in A 28-Year-Old Male: A Case Report

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A B S T R A C T

Background: Isolated uvular angioedema (Quincke's disease) is a rare manifestation of food allergy, often caused by a type I hypersensitivity reaction. While peanut allergies are common, adult-onset reactions after long-term avoidance are underreported.

Case Presentation: A 28-year-old Ethiopian male with a childhood-diagnosed peanut allergy presented with acute-onset dysphagia, throat heaviness, and voice changes following accidental peanut ingestion. Physical examination revealed isolated uvular edema without systemic anaphylaxis or airway compromise. Prompt treatment with epinephrine, corticosteroids, and antihistamines led to complete resolution within 24 hours.

Conclusion: This case highlights the importance of recognizing isolated uvular angioedema as a potential allergic reaction, even in patients with long-standing avoidance of known allergens. Early intervention with epinephrine and adjunctive therapies can prevent progression to severe anaphylaxis.

Keywords: Angioedema, Uvula, Quincke's disease, Epinephrine, Case report

1. Introduction

Isolated uvular angioedema (Quincke's disease) represents an uncommon but clinically significant form of localized upper airway swelling. This condition can develop from various etiologies, including allergic reactions to foods or environmental triggers, medication side effects (particularly ACE inhibitors and NSAIDs), hereditary angioedema disorders, mechanical trauma to the oropharynx, or underlying infections[1].

While isolated uvular angioedema has been documented in several case reports, only three published cases specifically link it to peanut ingestion. This condition typically results from a type I hypersensitivity reaction. Importantly, clinicians must distinguish it from infectious uvulitis, which often occurs with epiglottitis and has a different etiology[2].

Angioedema is characterized by non-pitting swelling that develops in subcutaneous and submucosal tissues due to increased vascular permeability and plasma extravasation[3]. This condition occurs when the immune system abnormally responds to harmless substances, triggering the production of IgE antibodies. These antibodies bind to mast cells, which are crucial components of the innate immune response. Upon allergen exposure, activated mast cells degranulate and release potent

inflammatory mediators, including histamine and leukotrienes. This cascade leads to localized or systemic manifestations such as tissue swelling, urticaria, mucosal inflammation, and potentially life-threatening airway compromise in severe cases. The resulting vascular leakage and smooth muscle contraction contribute to the characteristic clinical presentation of angioedema[3-5].

The primary focus in managing Quincke's edema is ensuring proper airway protection. Treatment involves close monitoring, oxygen supplementation, and medications including epinephrine for severe reactions, antihistamines (H1 and H2 blockers), and corticosteroids such as dexamethasone. Most documented cases present as acute episodes treated in emergency settings, often requiring only short-term medical intervention. The majority of patients respond well to this approach, with many experiencing single occurrences without recurrence[1,6].

2. Case Presentation

A 28-year-old Ethiopian male presented to the emergency department with a two-hour history of mild dysphagia, throat heaviness, and voice changes after accidental peanut ingestion. The patient had a known peanut allergy diagnosed in early childhood but had avoided peanuts since age five with no prior exposures or reactions in adulthood. His symptoms began shortly after consuming a meal that was later found to contain peanuts. Notably, he did not experience any shortness of breath, urticaria, facial swelling, or other systemic signs of anaphylaxis.

On examination, the patient was hemodynamically stable with normal vital signs. Oropharyngeal inspection revealed a markedly swollen and erythematous uvula without involvement of the tonsils, palate, or tongue (Figures 1 and 2). Nasolaryngoscopy confirmed isolated uvular edema with no compromise of the airway or vocal cord abnormalities. Laboratory investigations, including complete blood count and inflammatory markers, were unremarkable.

Given his known peanut allergy and acute-onset symptoms, he was treated promptly with intramuscular epinephrine (0.3 mg), intravenous dexamethasone (8 mg), and oral cetirizine (10 mg). His symptoms improved significantly within four hours, and the uvular edema resolved completely by the following day.

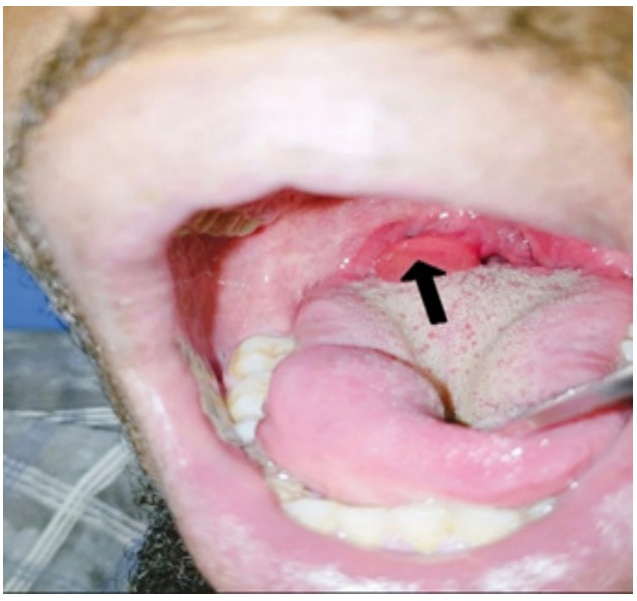

Figure 1: A markedly enlarged, erythematous uvula (black arrow) without involvement of the soft palate or tongue.

Figure 2: Oropharyngeal view indicating a markedly enlarged, erythematous uvula (white arrows) without involvement of the tonsils, palate, or tongue.

3. Discussion

Angioedema is most commonly caused by a type I, anaphylactic, IgE-mediated or immediate hypersensitivity reaction to a food, drug, insect venom, preservative, latex product, or aeroallergen[7]. In recent years, the incidence of adult-onset food allergies has risen significantly, accounting for 40% to 60% of all allergy cases that develop during adulthood[5].

The condition typically manifests as uneven, mildly painful swelling of the face, lips, and tongue, and can also affect the hands, feet, or genital area[4]. In this particular case, a hypersensitivity reaction to peanuts led to isolated uvular angioedema-a less common but notable symptom of anaphylaxis. Isolated uvular angioedema, first described by Quincke in 1882 (also known as Quincke's disease), is a rare form of upper airway angioedema. The condition can result from various factors, including hereditary angioedema, physical trauma, inhalation irritants, food allergies, drug reactions, and infections. Typically, isolated uvular swelling arises from a type I hypersensitivity reaction[2].

Quincke's disease refers specifically to localized non-hereditary angioneurotic edema of the uvula, without any genetic or laboratory association[8]. In this case, the patient developed isolated uvular edema following peanut ingestion with normal laboratory results.

Symptoms can vary between cases, but the most frequently reported ones include throat discomfort, a sensation of a foreign body, dysphagia (difficulty swallowing), and throat pain. Some documented cases also describe hoarseness, choking, snoring, respiratory distress, and even obstructive sleep apnea[1]. In this patient, the presenting symptoms were throat discomfort, a foreign body sensation, and voice changes.

Epinephrine serves as the primary treatment for anaphylaxis, and delayed administration may lead to severe complications such as biphasic anaphylaxis or fatal outcomes. During an allergic reaction, histamine-induced vasodilation and increased vascular permeability contribute to inflammatory swelling. As

secondary interventions, antihistamines and glucocorticoids are used to help suppress the allergic response and reduce the effects of histamine release[5,6]. This case was treated with epinephrine, a steroid, and an antihistamine.

4. Conclusion

This case demonstrates that isolated uvular angioedema can occur as an atypical presentation of peanut allergy, even after prolonged allergen avoidance. Despite the absence of systemic anaphylaxis, prompt recognition and treatment with epinephrine, corticosteroids, and antihistamines were crucial in ensuring a rapid recovery. Clinicians should maintain a high index of suspicion for allergic uvular edema in patients with known food allergies, as delayed intervention could lead to airway compromise. This report reinforces the need for patient education on allergen avoidance and emergency management, even in cases of long-term remission.

5. Authors' Contributions

Dr. Mohammedsefa Arusi and Dr. Zelalem Tadesse contributed to data acquisition, interpretation of data, critical revision of the manuscript, and final approval of the version to be published. Both authors reviewed and approved the manuscript.

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