

# Stomatitis Venenata- A Diagnostic Challenge

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**Abstract** Abstract Background: Allergies manifest in various forms, which can be mild and unnoticeable to life threatening anaphylaxis. To pin point the exact agent causing the allergy is a challenge. Case Description: A 6 year old boy presented with pain and burning sensation in the right side of the mouth since 10 days. His mother gave a history of visiting a dentist 1 month back where he was prescribed fluoridated pediatric toothpaste. On using the toothpaste the patient noticed occurrence of small fluid filled boils in the right cheek region and the right side of the tongue which slowly increased in size and turned flat. Since 10 days the pain is severe and causing difficulty to open the mouth, talk and eat. Clinical implications: Dentists should exercise care when prescribing any new products to patients and be aware of their allergic potential. Also any allergic manifestations should be recognized early and managed appropriately.

**Keywords** Stomatitis, Fluoridated Toothpaste

## 1. Introduction

Allergic reactions are of frequent occurrence across age groups among the general population. The diagnosis and management of allergies, especially in pediatric patients is difficult and challenging. Arriving on specific diagnosis is complicated as allergic reactions could be non-specific, may mimic particular diseases, could occur immediately or delayed, and occasionally are hereditary [1].

Many commonly occurring substances cause allergies and these include drugs, flavoring and coloring agents used in chewing gums, food products, various metals, acrylic resins, and tooth pastes [2]. Fluoride in tooth paste is also known to cause allergy but rarely reported in literature. The existing literature on fluoride allergy is sporadic and thinly distributed. The current case of a young child with painful oral lesions was challenging to diagnose due to the usage of many variables in the form of various medications and topical products. Elicitation of a detailed history by the parent could not be emphasized enough in this particular case.

## 2. Case Report

A 6-year-old male child presented to The Department of ORAL MEDICINE AND RADIOLOGY, The Oxford Dental College, Bangalore with a complaint of pain and burning sensation in the right side of the mouth for 10 days. The patient was accompanied by his mother who elaborated the history, indicating its onset after visiting a dentist one month prior, for a routine dental check up where he was prescribed fluoridated pediatric toothpaste. On initiating the use of this toothpaste, mother noticed the occurrence of small fluid filled boils in the right cheek region. On re-visiting the dentist, patient was prescribed a topical analgesic, an anti inflammatory mouth rinse, an antipyretic (paracetamol), an antibiotic (penicillin) and a systemic analgesic which the patient used for five days, without any relief. Since past 10 days the patient has experienced severe pain with difficulty in opening the mouth, chewing and swallowing food.

At presentation review of systems was unremarkable. The mother denied medical problems and any other previous dermatological lesions or allergic reactions. On intraoral examination, a diffuse erythematous lesion extending from the right retrocommisure to the right retro molar area and one centimeter on either side of the occlusal plane was noted in the right buccal mucosa interspersed with yellowish white slough (Figure 1.) On palpation the lesion was extremely tender, soft and smooth. Based on the history and observations, a provisional diagnosis of contact allergy (stomatitis venenata) was made.

Differential diagnoses of oral lichenoid drug eruptions, pemphigus, erythema multiforme were considered. The presence of any trauma like cheek biting habit and chemical burn was ruled out.

The provisional diagnosis was made primarily based on presentation and history. After suspecting the toothpaste as the causative agent for the lesion a small amount of it was applied over the tongue and observed after sometime. A bulla was visualized on the anterior one third of right lateral surface of the tongue (Figure 2). Ruling out all other probable causes for contact allergy, fluoride in toothpaste was suspected to be the causative agent. Substitution of the fluoridated toothpaste to a non fluoridated one, which the patient was using previously, was advised. Additionally, an

anti-inflammatory mouth rinse of benzydamine hydrochloride and a topical corticosteroid 0.1% triamcinolone acetonide were prescribed. On recall visit, status post one week, patient showed marked reduction of pain and burning sensation and diminution in the extension of the lesion (Figure 3). Further a week, complete resolution of the lesion was observed, and the patient was advised to stop the use of the anti-inflammatory mouth rinse. Topical steroid application was gradually tapered down and stopped. The avoidance of the toothpaste and the resolution following the use of a topical corticosteroid further supported the diagnosis of a contact stomatitis.



**Figure 1.** Intraoral photograph of the extensive lesion involving right buccal mucosa



**Figure 2.** Intraoral photograph of a bulla on the right lateral border of the tongue

### 3. Discussion

Contact allergy is a class IV hypersensitivity reaction that manifests in previously sensitized individuals. The mechanism of this reaction [2, 3] is depicted in (Figure 4). Numerous studies have pointed out association of contact allergies to various dental materials and products. Also, off late, the incidence of contact allergic reactions has shown increased prevalence due to the availability and usage of

various oral hygiene and cosmetic products [4]. Toothpastes are a commonly used oral hygiene products comprising of various ingredients like abrasives, detergents, humectants, binding agents, preservatives, fluorides, coloring and flavoring agents. Flavors are added to toothpaste to increase their acceptance, especially in the pediatric population. The most commonly used flavorings are either cinnamon or mint based [5, 6]. The other ingredients to which patients have shown allergic reactions include detergents such as sodium lauryl sulphate [7] and cocamidopropyl betaine, solvents like propylene glycol, essential oils and to preservative such as paraben [5, 8].

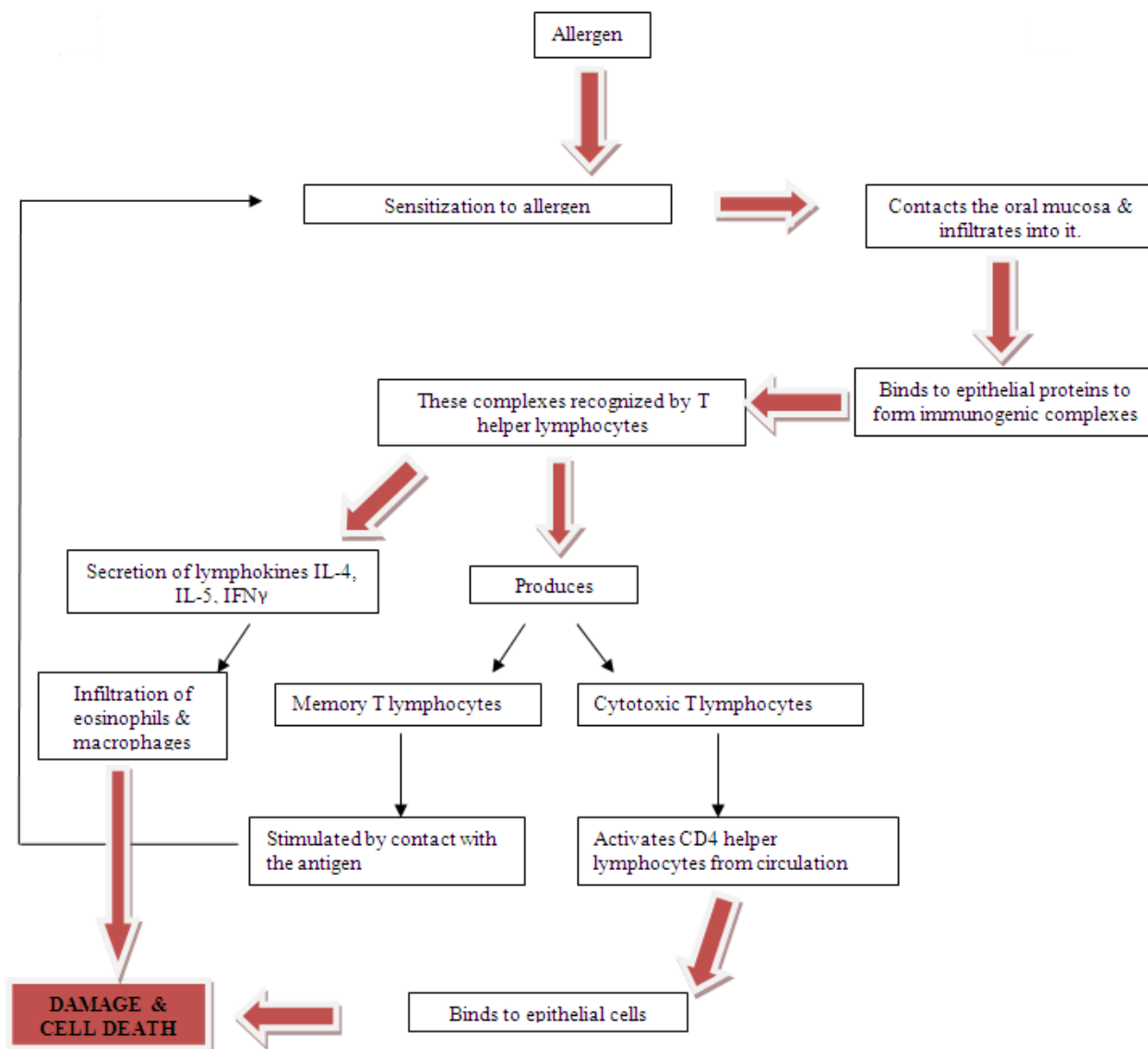


**Figure 3.** Intraoral photograph of the healing right buccal mucosa

The current literature on allergy to fluorides is very little and has not been well documented; one such case reported with multiple prolapses during childhood and after extensive testing was decided to be allergic to fluoride [9]. Another case of a papulo pustular perioral dermatitis was reported in a 45 year old lady [10]. In the present case due to the poor socioeconomic background the patient was unwilling to undergo any investigations. Therefore based on the history and clinical presentation, we suspected it to be an allergy to the fluoridated pediatric toothpaste, as the patient was using a non fluoridated toothpaste for a long time without any complaints. But the exact allergen could not be ascertained.

### 4. Conclusion

The present case describes contact dermatitis caused due to fluoridated tooth paste. Diagnosing allergic reactions can be a challenge task considering the fact that patients are exposed to a number of potential allergens on a day to day basis. The importance of a detailed history is paramount when the onset of use of an allergen coincides with the appearance of the lesion. Careful observation for any specific pattern of distribution of the lesions enables us to narrow down the diagnosis for example any cosmetics like lipstick causing a perioral allergic reaction. On suspicion of an allergy the exact causative agent should be diagnosed and avoided to prevent further occurrences of allergic reactions.



**Figure 4.** Mechanism of type IV hypersensitivity reaction as in contact allergy

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