



## A Case Study of Stomatitis Medicamentosa Due to Trigeminal Neuralgia Medication

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**Abstract:** Our study aim is to characterize and assess the case of Stomatitis medicamentosa in a patient who developed many oral ulcers after using Carbamazepine for the treatment of Trigeminal Neuralgia of a 35-year-old female patient with a medical history of hypertension for the past ten years and under medication. The patient also gave a history of electric shock-like pain on the left side of the face for the past month and was prescribed Tegretol 100mg (Carbamazepine) twice daily. After taking this medication, the patient suffered several mouth ulcers. The patient was asked to stop taking this medication and asked to take oral antihistamines and systemic Gabapentin steroids for one month. After one week, the patient heals completely from the lesions. Burning sensation with altered taste sensation and difficulty while swallowing are common patient complaints. Mouth opening was restricted and painful. The skin test (prick test) is done, which shows red, papular, or vesicular reactions. Early identification of the lesion and prompt withdrawal of the offending drug are key for successful management, and the drug can be replaced with another drug of the same efficacy. Thus, adverse drug reactions can be minimised by asking the patient about allergy to any drug or food while writing a prescription, and the patient should be informed and familiarised with the drug patient the patient is allergic.

**Keywords:** Allergic stomatitis medicamentosa, IgE reaction, eosinophils, Adverse drug reaction, ulcerations.

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## 1. INTRODUCTION

The adverse medication reactions range from minor erythema and rashes to potentially fatal anaphylactic events, including bronchospasm or bronchial asthma<sup>1</sup>. Oral reactions to systemic drug administration can be broadly classified as non-immunogenic reactions, such as gingival hyperplasia caused by Dilantin sodium, heavy metal poisoning and oral ulcerations caused by chemotherapeutic drugs, and immunogenic reactions, also known as Stomatitis medicamentosa<sup>2</sup>. Stomatitis medicamentosa is a less common oral lesion caused by systemic medication delivery. The lesion might range from a widespread erythema distribution to severe ulcerations with or without vesicle or bulla formation<sup>3</sup>. The gingiva, palate, lips, and tongue are the most usually affected areas. The cessation of the causative agent resolves these lesions. In severe cases, however, antihistamines and steroids are the medications of choice. This study describes a case of Stomatitis medicamentosa in a patient who developed many oral ulcers after using Carbamazepine to treat Trigeminal Neuralgia. Stomatitis medicamentosa is a group of sensitive reactions that occur after systemic administration of a wide range of medications and chemicals at reasonable doses but are unrelated to any pharmacological activity or toxicity of these drugs. Stomatitis medicamentosa is a mucosal allergic reaction produced by systemic medication treatment. These are uncommon and more coincidental reactions<sup>4</sup>.

## 2. CASE REPORT

A 35-year-old female patient reported to the Department of Oral Medicine and Radiology with a complaint of ulcerations in her mouth and pain over the previous 5 days.

### 2.1. Ethical Approval Statement

The patient provided written consent and published it with institutional approval with Ref/DOC/23/029.

### 2.2. Medical History

Medical history reveals that she has been hypertensive for the previous ten years and is currently on medication. The patient also describes a month of electric shock-like pain on the left side of her face, for which she saw a local dentist, who gave Tegretol 100 mg [carbamazepine] twice daily.

### 2.3. Observation

The patient suffered several mouth ulcers after taking this medication. Crestations in the top and lower lips are seen on extraoral inspection, as shown in Figure:1. Poor periodontal health, many erosion regions, and superficial ulcers on the left and right buccal mucosa, as shown in Figures 2 and 3, respectively. Mouth opening was restricted and uncomfortable. Multiple rashes and ulcerations of the buccal mucosa and lips following Tegretol use.



Fig 1: Crestation in upper and lower lips

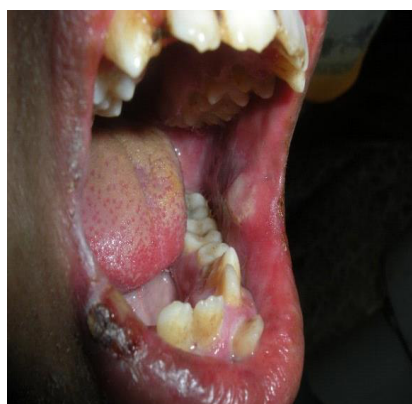


Fig 2: Area of ulceration on left buccal mucosa



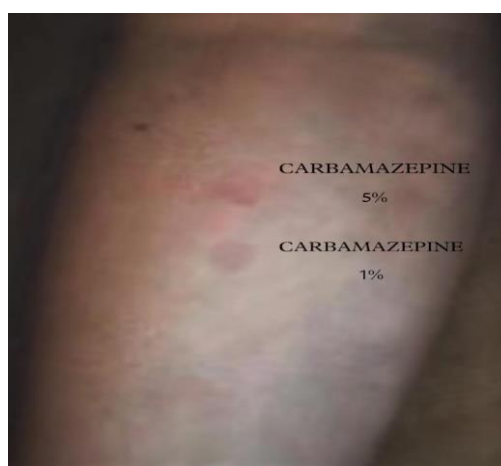
**Fig 3: Area of ulceration on the right buccal mucosa**

#### **2.4. Family history**

The patient's mother has had a history of hypertension for the past 15 years, is under medication, and has no other relevant family history.

#### **2.5. Investigations**

The skin (prick) test diagnoses type I allergic responses. This test includes injecting suspected antigens into the skin. Within 15-30 minutes, the results are read. If the test is positive, the skin will show red, papular, or vesicular reactions. Since the patient started taking carbamazepine drug in recent times, we tested with carbamazepine 1% and 5%. The patient was positive with both concentrations, as shown in Figure 4.



**Fig 4: Prick Test –Positive**

#### **2.6. Diagnosis**

The case was diagnosed as stomatitis medicamentosa and an adverse reaction to a medication administered systemically.

#### **2.7. Treatment**

The patient was asked to discontinue Tegretol and be given gabapentin, oral antihistamines [tablet Avil 25mg], and

systemic steroids [tablet Wysolone 5mg] twice daily for one month.

#### **2.8. Follow up**

Lesions healed one week after patient evaluation. The patient shows healed crestrictations in upper and lower lips, as shown in Figure 5, and healed ulcerations in left and right buccal mucosa, as shown in Figures 6 and 7, respectively.



**Fig 5: Healed crestaions in upper and lower lips**



**Fig 6: Healed Ulceration on left buccal mucosa**



**Fig 7: Healed Ulceration on right buccal mucosa**

### 3. DISCUSSION

Patients who take many drugs are more likely to experience allergic reactions. Patients who use two drugs face a 6% risk. Patients on five medications have raised their frequency by 50%. Patients who take more than eight medications are at 100% risk of experiencing adverse drug reactions<sup>5</sup>. Drug chemical characteristics, molecular weight, and method of administration are all risk factors. Larger, more complex medications, such as non-human proteins, are more immunogenic. Due to the antigen in the skin and the rapid production of circulating drug antigen with IV therapy, there is a higher likelihood of allergic reactions when using topical, intramuscular, or intravenous drug administration<sup>6</sup>. The immune system comprises two functional components: one adaptive and one innate<sup>7</sup>. An innate immune system exists in the skin and mucosa. When an antigen enters the body, two types of helper T-cells (Th cells) respond to it: Th1

responses and Th2 responses. Th2 responses are linked to IgE and begin promptly after exposure, resulting in clinical symptoms caused by inflammatory Th2 cytokines<sup>8</sup>. IgE antibodies also set in motion a chain of events that produce inflammatory mediators such as histamine, C-reactive protein, and other substances from specialised cells known as mast cells<sup>9</sup>. This patient complains of tongue ulcerations. Erythema multiforme is a frequent condition marked by numerous ulcerations across the oral cavity<sup>11</sup>. Tegretol 100 mg was administered for the patient's electric shock-like pain on the left side of her face. Commonly related medicines include penicillin, sulphonamides, tetracycline, NSAIDs, sulphonamides, carbamazepine, barbiturates, and others<sup>12</sup>. Patients report a burning feeling, altered taste perceptions, and difficulties swallowing. Stomatitis, ulceration, gingival hyperplasia, pigmentation, decreased salivary function, and altered taste are frequent oral cavity reactions<sup>9,10</sup>. Extraoral examination reveals crestaions in the upper and lower lips<sup>13</sup>.

The mouth opening was painfully constricted. Histopathological findings show a non-specific pattern of subacute mucositis with lymphocytes, eosinophils, and neutrophils<sup>10</sup>. Medical history and clinical findings should be included in the initial history. Rashes, fever, mucosal lesions, and lymphadenopathy are all evaluated during a physical examination<sup>14</sup>. Early lesion detection and withdrawal of the offending substance are critical for successful therapy<sup>15</sup>. The causative agent should be stopped, and the drug should be substituted with another drug with the same efficacy. The introduction of antihistamines alleviates acute symptoms<sup>16</sup>. Topical steroids relieve local responses. A severe reaction involving the entire body necessitates hospitalisation and parenteral injection of epinephrine, corticosteroids, or antihistamines<sup>17</sup>.

#### 4. CONCLUSION

In conclusion, the findings of this study underscore the crucial role of proactive measures in minimizing adverse medication reactions. The simple yet effective practice of inquiring about drug and food sensitivities before prescription can significantly reduce the risks associated with medication. Furthermore, our research emphasizes the importance of not prescribing medications to individuals with known allergies, thereby preventing potential severe reactions. Swift action is imperative for patients with acute-

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onset ulcerations and facial edema following recent medication use. Removing the causative drug promptly, educating the patient about their drug allergy, and familiarizing them with the specific allergen are essential to ensure patient safety and well-being. These findings emphasize the potential to enhance patient care and safety through proactive measures and timely interventions, ultimately improving the overall quality of healthcare delivery.

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#### 6. AUTHORS CONTRIBUTION STATEMENT

Pavani Reddy and Ganesh C designed and conducted the study at the Department of Oral Medicine and Radiology, SRM Kattankulathur Dental College and Hospital, Kattankulathur- 603203, and prepared a contribution part of the manuscript. All the authors read and approved the final version of the manuscript.

#### 7. CONFLICT OF INTEREST

Conflict of interest declared none.

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