

# Stomatitis Medicamentosa: A Possible Manifestation after Covishield Vaccination

Akshita Singh Thakur<sup>1</sup>, Deepti Garg<sup>2</sup>, Swati Gautam<sup>3</sup>

Received on: 02 May 2023; Accepted on: 28 May 2023; Published on: 27 June 2023

## ABSTRACT

Allergic inflammatory reactions of the oral mucosa due to intake of drugs are rare and non-specific. There is a great implication for the administration of drugs in oral mucosal lesions. Stomatitis medicamentosa may present as extensive and severe ulceration that can contain bullae or vesicles and may also be presented as a diffuse distribution of erythema. We report a case of possible stomatitis medicamentosa after the first dose of the covishield vaccine in a young female patient.

**Keywords:** Permanent tooth germ, Surgery, Transposition.

*Dental Journal of Advance Studies* (2023); 10.5005/djas-11014-0006

## INTRODUCTION

With the advent of the COVID-19 pandemic, a number of oral and systemic manifestations of various diseases were reported as an individual or conglomerate entity. Management of various systemic and oral lesions in the pandemic times henceforth became challenging. Drug administration via oral or parenteral route inevitably is a double-edged sword, being beneficial and totally effective for some while causing mild to severe allergic reactions in others. To combat the deadly pandemic, various vaccines were developed out of which Oxford AstraZeneca COVID-19 vaccine is a second dose vaccine jointly developed by Oxford vaccine group and pharmaceutical company AstraZeneca to target the SARS-COV-2 virus. Covishield is a version of the Oxford AstraZeneca vaccine manufactured by Serum Institute of India.<sup>1</sup> Though having relatively successful results, there have been reports of certain uncommon side effects of the vaccine. We report a case of possible stomatitis medicamentosa in a young female patient after being administered the first dose of the covishield vaccine.

## CASE DESCRIPTION

A female dental student, 22 years old, reported to the Department of Oral Pathology with a chief complaint of pain and burning sensation in the mouth. The patient also complained of an inability to swallow food one day after being administered with the first dose of the covishield vaccine. The patient had no history of any allergy in the past. There was the negative history of COVID-19 in the past. Also patient had no systemic symptoms and examination of the oral cavity revealed bilateral erosions and erythema extending anteroposterior and mesial with respect to the left hard palate and anteromesial with respect to the right hard palate (Figs 1 and 2). There was no discharge from the lesions and the patient gave a negative history of fever, myalgia, and malaise. The regional lymph nodes were non-palpable.

The patient was given symptomatic treatment with betadine gargles, paracetamol, multivitamins, and vitamin C. Patient improved symptomatically over a week. Repeat examination of the mouth after 1 week showed no erythema or erosion on the palate (Fig. 3).

<sup>1-3</sup>Department of Oral Pathology and Microbiology, Bhojia Dental College and Hospital, Solan, Himachal Pradesh, India

**Corresponding Author:** Akshita Singh Thakur, Department of Oral Pathology and Microbiology, Bhojia Dental College and Hospital, Solan, Himachal Pradesh, India, Phone: +91 8628911494, e-mail: akshitathakur24@gmail.com

**How to cite this article:** Thakur AS, Garg D, Gautam S. Stomatitis Medicamentosa: A Possible Manifestation after Covishield Vaccination. *Dent J Adv Stud* 2023;11(1):11–12.

**Source of support:** Nil

**Conflict of interest:** Dr. Deepti Garg is associated as the editorial board member of this journal and this manuscript was subjected to this journal's standard review procedures, with this peer review handled independently of this editorial board member and her research group.



**Fig. 1:** Erosions and erythema extending anteroposterior and mesial with respect to the left hard palate



**Fig. 2:** Erosions and erythema extending anteromesial with respect to the right hard palate

## DISCUSSION

Stomatitis medicamentosa is an oral reaction to the administration of drugs orally that can be immunogenic or non-immunogenic.<sup>2</sup> A common contact stomatitis also called stomatitis venenata is described as an allergy to oral mucosa which can occur due to repeated contact with the causative agent.<sup>2</sup> A variety of sensitivity reactions is followed by systemic intake of drugs and chemicals at normal doses but not related to any pharmacological activity or toxicity of these drugs.<sup>1,3</sup> The above-mentioned reactions are rare and are more coincidental. The pathogenesis of these reactions is mostly mediated by antigen component of drug molecule leading to hyperimmune response.<sup>4,5</sup> The reactions depend on the immunogenicity of a drug, route of administration, frequency of exposure, and innate reactivity of the patient's immune system.<sup>1,6</sup> Sometimes these reactions can occur through non-immunological mechanisms due to the drug directly affecting the mast cells and causing the release of chemical mediators.<sup>7</sup> The allergic reaction to systemic drugs may appear almost immediately or after a few hours to days. Skin is the most common site of manifestation of stomatitis apart from other regions of the body site.<sup>8,9</sup> Oral mucosa may occasionally be the target or sometimes the only site of involvement. Frequently seen allergic reactions of the mucosa are - erythema multiforme, anaphylactic stomatitis, and intraoral fixed drug eruption.<sup>10</sup> The possible two ingredients in COVID-19 vaccines responsible for anaphylactic reactions are polysorbate 80 and polyethylene glycol (PEG). Excipients of covishield includes—hydrochloride monohydrate, L-histidine, sodium chloride, magnesium chloride hexahydrate, disodium edetate dehydrate, polysorbate 80, ethanol, water, sucrose for injection.<sup>11,12</sup> The mechanism associated with underlying PEG allergy remains unresolved and needs further research. It is believed that patients with a history of PEG-induced anaphylaxis have developed Immunoglobulin E (IgE) antibodies to PEG.<sup>13</sup>

## CONCLUSION

The potential allergic reactions and their risk after vaccination is a paramount concern not only for the patients but also for the policymakers. Usually, it is the excipient, preservatives, and

**Fig. 3:** Examination of the mouth after 1 week showed no erythema or erosion on the palate

adjuvant and not the vaccine itself that are responsible for causing a reaction. Allergic reactions to covishield are due to sensitivity to polysorbate 80. The oral lesions as described in the above case are suggestive of medicamentosa and most likely due to either excipient, preservatives, or adjuvant.

## REFERENCES

1. Bankowski Z, Bruppacher R, Crusius I, et al. Reporting adverse drug reactions. *CIOMS* 2000;88. pp. 1–146. ISBN: 9290360593.
2. Rajendran R, Sivapathasundram B. Benign and malignant tumours of oral cavity. *Shafer's textbook of oral pathology*, 6th edition. India: Reed Elsevier; 2006. pp. 169–173.
3. Neville BW, Damm DD, Allen CM. *Oral and maxillofacial pathology*. 3rd edition. St Louis: Saunders; 2008. pp. 1–984.
4. Fernando SL, Broadfoot AJ. Prevention of severe cutaneous adverse drug reactions: The emerging value of pharmacogenetic screening. *CMAJ* 2010;182(5):476–480. DOI: 10.1503/cmaj.090401.
5. Adkinson NF Jr. Risk factors for drug allergy. *J Allergy Clin Immunol* 1984;74(4 Pt 2):567–572. DOI: 10.1016/0091-6749(84)90108-8.
6. Alan Tack D, Roy S. Oral drug reactions. *Dermatological Therapy* 2012;15(3):236–250. DOI: <https://doi.org/10.1046/j.1529-8019.2002.01532.x>.
7. Reidl MA, Casillas AM. Adverse drug reactions: Types and treatment options. *Am Fam Physician* 2003;68(9):1781–1790. PMID: 14620598.
8. Sanjay Saraf. *Textbook of oral pathology*. 1st edition. Jaypee Brothers Medical Publishers Private Limited; 2006;156–158. DOI: 10.5005/jp/books/11083.
9. Binnie WH, Burett AW, James Wright. *Oral diseases*. Cawson 9th edition. 2017. p.318–322.
10. Axel T. Hypersensitivity of the oral mucosa: Clinics and pathology. *Acta Odontol Scand* 2018;59(5):315–319. DOI: 10.1080/000163501750541192.
11. Prakash K, Biswas P, Prabhakar M, et al. A case report on stomatitis venenata due to use of lip balm. *Med Arch* 2020;74(1):65–68. DOI: 10.5455/medarh.2020.74.65-68.
12. Turner, Ansotegui IJ, Campbell DE, et al. COVID-19 vaccine-associated anaphylaxis: A statement of the World Allergy Organization Anaphylaxis Committee. *World Allergy Organ J* 2021;14(2):100517. DOI: 10.1016/j.waojou.2021.100517.
13. Zhou ZH, Stone CA Jr, Jakubovic B, et al. Anti-PEG IgE in anaphylaxis associated with polyethylene glycol. *J Allergy Clin Immunol Pract* 2021;9(4):1731–1733.e3. DOI: 10.1016/j.jaip.2020.