Stomatitis Medicamentosa: A Possible Manifestation after Covishield Vaccination

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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.

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. 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).
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**Discussion**

Stomatitis medicamentosa is an oral reaction to the administration of drugs orally that can be immunogenic or non-immunogenic. A common contact stomatitis also called stomatitis veneneta is described as an allergy to oral mucosa which can occur due to repeated contact with the causative agent. 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. 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. The reactions depend on the immunogenicity of a drug, route of administration, frequency of exposure, and innate reactivity of the patient’s immune system. 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. 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. 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. 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. The mechanism associated with underly 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.

**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 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**