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Journal of Oral Medicine, Oral Surgery, Oral Pathology and Oral Radiology

Journal homepage: www.joooo.org

Case Report

Dermatographia in oral cavity unveiled: A case study

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ARTICLE INFO

Article history:

Received 24-06-2024

Accepted 21-08-2024

Available online 15-10-2024

Keywords:

Dermatographia

Dermatographism

Urticaria

Dermatographometer

ABSTRACT

Dermatographia is a form of physical urticaria, quite uncommon in oral cavity characterized by elevated skin following localized erythema, oedema, and a flare-up reaction around it. It is usually induced by any blunt object or minor trauma and usually does not affect the routine life of the patient. Here we present a case report of a 20 year old male with the chief complaint of elevation on skin from a blunt object. On his physical examination with the consent of the patient we induced the condition in the department by asking the patient to write the letter 'D' on his flexural arm using the blunt end of the pen. After 5 min, the elevations on his skin began to appear which raised drastically with time. It remained on the skin for about an hour and then faded on its own over time. During intraoral examination we also induced similar strokes on his buccal mucosa and surprisingly a linear elevation was produced along the line of blunt pen which was reddish in colour. No treatment was provided as the condition did not affect the quality life of the patient. Pharmacological therapy may include oral antihistamines, such as cetirizine or loratadine, to alleviate pruritus and reduce the frequency of wheal formation. Topical corticosteroids, such as triamcinolone acetonide or betamethasone, can be applied to affected sites for localized anti-inflammatory effects. In Ayurveda, the use of internal Ayurvedic medicines like, 'Aragwadha amritadi kashaya', 'Ayaskriti', 'Varanadi kashaya' and 'Dashamoola hareetaki' are recommended along with dietary restrictions and life style changes.

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1. Introduction

Dermatographia (or Dermatographism) is an urticaria or a skin related disease which is caused or induced by writing on skin. A mild or firm initiation with the help of either back side of pen, or any blunt object results in this condition.¹ This commences as elevated skin that resembles a pen stroke or other item, and it causes localized erythema, oedema, and a flare-up reaction around it. This response on skin is known as Dermatographism.² It usually affects 2-5% of population.¹

Patients affected with this condition are generally in a good health although many recent investigations have shown that individuals with scabies, infections, diabetes mellitus, thyroid disorders, and menopause have also experienced dermatographia.³ Certain medications, such as atorvastatin, cephalosporins, famotidine, and penicillin, may trigger physical urticaria. Many physiological mechanisms may also play a role in urticaria flare-ups during periods of emotional stress.²

After five minutes of skin contact, the reaction usually intensifies and can linger for fifteen to thirty minutes.⁴ A hot bath, light pressure on scratching, friction from clothing, and rubbing with towel, exercise, tension, and emotion can all make the symptoms worse. Itching and whealing

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can affect every aspect of the body.³ Less frequently, the genitalia and scalp are probably involved.⁴

Dermographism can be symptomatic and experienced in a small subset of population, and it may or may not deteriorate their quality of life.⁵ A complete history of patient is typically used to make the diagnosis, which can then be verified by applying graded, predetermined pressure to the skin with a dermatographometer, which is a spring-loaded stylus (e.g., 3600 g/cm).³ Biopsy specimens solely display perivascular mononuclear cells and dermal oedema.⁵

2. Case Report

A 27 year old male reported to the Department of Oral Medicine and Radiology with the chief complaint of elevation on skin from a blunt object. On asking his history in detail patient had elevations and raised skin areas on slight stroke along the line of writing. He also felt a tingling sensation on his whole body followed by these elevations. He further noticed that mild trauma from any blunt object resulted in skin elevations during his childhood and school days. He had no deleterious habits. The patient had hypothyroidism since 3 years and was on medications for the same. The laboratory investigations revealed normal thyroid levels. His family history was found not significant, and no one from his family suffered from this condition. His haematological parameters were within normal limits. On his physical examination with the consent of the patient we induced the condition in the department by asking the patient to write the letter 'D' on his flexural arm using the blunt end of the pen (Figure 1). After 5 min, the elevations on his skin began to appear which raised drastically with time. It remained on the skin for about an hour and then faded on its own over time. During intraoral examination we also induced similar strokes on his buccal mucosa and surprisingly a linear elevation was produced along the line of blunt pen which was reddish in colour (Figure 2). No treatment was provided as the condition did not affect the quality life of the patient.

3. Discussion

Dermatographia is a self-limiting condition characterized by the occurrence of transient linear wheals in reaction to mechanical stimulation of the skin.⁶ The pathophysiology of dermatographia involves the release of histamine and other inflammatory mediators from mast cells in response to physical stimuli, which leads to vasodilation, increased vascular permeability, and oedema formation.⁵ While the etiology of dermatographia remains unclear, genetic predisposition, atopic diathesis, and heightened mast cell reactivity are believed to play contributory roles.⁷

Although dermatographia predominantly affects the skin, involvement of the oral mucosa is usually rare, with only



Figure 1:



Figure 2:

a few cases reported in the literature.^{1,6} The clinical features of oral dermatographia typically include linear erythematous streaks or wheals distributed on the buccal mucosa, tongue, palate, and gingiva.⁶ These lesions are transient and can be elicited by mechanical trauma, such as biting, rubbing, or scratching of the oral mucosa.⁵ Differential diagnoses for oral dermatographia include allergic reactions, contact dermatitis, oral lichen planus, oral candidiasis, and other mucosal disorders presenting with erythematous lesions.⁷

The diagnosis of oral dermatographia is primarily clinical and supported by the characteristic appearance of linear wheals following mechanical stimulation of the oral mucosa.⁸ Histopathological examination may reveal nonspecific findings, including mild epithelial hyperplasia, spongiosis, and perivascular lymphocytic infiltrate, consistent with urticarial changes.⁶ Laboratory investigations are usually unrevealing, although elevated

Table 1:

S. No	Name of Author	Year of Publication	Age of Patient/Gender	Treatment given	Journal of Publication
1.	Sunil S et al., ¹	2006	47 years/M	Oral prophylaxis and root planning, Antibiotics, Antihistamins	Journal of Oral and Maxillofacial Pathology
2.	Binmadi N et al., ²	2016	20 years/ M	No treatment was given	American Journal of Case Reports
3.	Mamidi P et al. ⁵	2018	16 years/M	Internal Ayurvedic medications combined with a rigorous diet and lifestyle modifications. .	Indian Journal of Ancient Medicine and Yoga

serum Ig E levels and positive autologous serum skin test have been reported in some cases.⁸

Management of oral dermatographia focuses on symptomatic relief and prevention of exacerbating factors.⁹ Patients should be advised to avoid mechanical trauma to the oral mucosa and instructed on gentle oral hygiene practices.¹⁰ Pharmacological therapies may include oral antihistamines, such as cetirizine or loratadine, to alleviate pruritus and reduce the frequency of wheal formation.⁹ Topical corticosteroids, such as triamcinolone acetonide or betamethasone, can be applied to affected sites for localized anti-inflammatory effects.¹⁰ In refractory cases, systemic corticosteroids or other immunomodulatory agents may be considered, although long-term use should be avoided due to potential adverse effects.¹¹

In Ayurveda, dietary limitations and lifestyle modifications are advised in addition to the use of internal Ayurvedic medications such as "Aragwadha amritadi kashaya," "Ayaskriti," "Varanadi kashaya," and "Dashamoola hareetaki."^{5,12}

Within Unani medicine, treatment protocols involve one of four modes of operation, either alone or in combination: a) Ilaj bid Dawa (pharmacotherapy): b) Ilaj bit Tadbeer (Regimental therapy): c) Ilaj bit taghzia (Dietotherapy).^{13,14}

4. Conclusion

Oral dermatographia is an uncommon form of physical urticaria that can resemble other mucosal conditions. Dental professionals should be aware of this illness and consider it when making a differential diagnosis for patients who frequently come with pruritis accompanied by erythema. Early detection and effective treatment can help reduce symptoms and enhance the lives of the affected individuals. In order to better understand the pathogenesis and therapeutic approaches for oral dermatographia, more research should be conducted.

5. Source of Funding

None.


6. Conflict of Interest

There are no conflict of interest.

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Cite this article: Khan FI, Aggarwal A, Upadhyay N, Vishnurao SG, Jha N. Dermatographia in oral cavity unveiled: A case study. *J Oral Med, Oral Surg, Oral Pathol, Oral Radiol* 2024;10(3):202-205.