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Prevalence of infectious diseases and disorders of dermal apparatus in relation to head and neck region pertaining to adult and paediatric population – An original research

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SUMMARY

Background and objective. Immunologically mediated mucocutaneous diseases frequently manifest initially in the oral cavity and often exhibit overlapping clinical features. This overlap complicates early clinical diagnosis and may delay appropriate management. The present study aimed to assess the prevalence and clinicopathological characteristics of oral lichen planus, oral pemphigus and oral pemphigoid in a large retrospective cohort.

Material and methods. A retrospective analysis of 6300 biopsy records archived over a 21-year period was performed. Cases diagnosed histopathologically as oral lichen planus, oral pemphigus and oral pemphigoid were included. Demographic details and clinical features were retrieved from records. Hematoxylin and eosin stained sections were re-evaluated using current diagnostic criteria. Descriptive statistical analysis was carried out using SPSS version 21.

Results. Out of 6300 cases, 105 (1.66%) were immunologically mediated oral diseases. Oral lichen planus constituted 86 cases (1.36%), oral pemphigoid 15 cases (0.23%) and oral pemphigus 4 cases (0.06%). Characteristic clinicopathological features were observed for each entity, with oral lichen planus being the most prevalent.

Conclusions. Immunologically mediated oral diseases represented a small proportion of oral biopsy specimens. Overlapping clinical features necessitate careful clinicopathological correlation to ensure accurate diagnosis. Histopathological examination remains essential for definitive diagnosis and appropriate management.

Keywords: oral lichen planus, pemphigus, pemphigoid, autoimmune oral diseases, oral mucosal lesions.

INTRODUCTION

Lichen planus, pemphigus and pemphigoid are frequent immunologically mediated mucocutaneous diseases with oral involvement. Often, the first manifestations are oral plaques, vesiculobullous, ulcerative, or erosive lesions. The clinical and demographic features of these diseases overlap with other infectious and non-infectious conditions, making clinical diagnosis challenging for dentists and potentially delaying correct diagnosis and management. This is crucial as pemphigus is a life-threatening disease with a poor prognosis, where early diagnosis is critical for successful treatment (1-6).

In lichen planus, activated T lymphocytes lead to apoptosis of the epithelial basal cell layer (7). A possible link with chronic hepatitis C has been suggested (8) and OLP is considered potentially malignant (9-12). Pemphigus is a severe autoimmune disorder where IgG autoantibodies target desmogleins, disrupting epithelial adhesion. Oral lesions are a hallmark and often the first sign (13-15), with a genetic predisposition noted in certain populations (16). In pemphigoid, the oral mucosa is frequently the first and sometimes sole site affected (5, 17, 18), with potential severe complications like ocular involvement.

The purpose of this study was to retrospectively analyze and compare the demographic and clinical manifestations of oral pemphigus, OLP and oral pemphigoid to elucidate their similarities and dif-

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ferences, aiding dentists in improving diagnostic accuracy for these conditions.

MATERIAL AND METHODS

A retrospective analysis of 6300 biopsy records archived over a 21-year period was conducted. Cases with a histopathological diagnosis of oral lichen planus, oral pemphigus, or oral pemphigoid were included. Cases suggestive of lichenoid reaction were excluded. Hematoxylin and eosin (H&E) stained sections were re-evaluated using current diagnostic criteria.

Demographic data (gender, age) and clinical features of the oral lesion (site, color, size, number, recurrence, evolution time, symptoms) were extracted from records. Symptoms were classified as pain or a burning/itching sensation. The clinical diagnostic hypotheses from the charts were compared with the final histopathological diagnosis. Descriptive statistical analysis was performed using SPSS version 21.

Ethical Statement: This study involved retrospective analysis of archived records. Research was conducted in accordance with the principles of the Helsinki Declaration.

RESULTS

Immunologically mediated oral diseases accounted for 105 (1.66%) of the 6300 total cases. The distribution was: Oral lichen planus, 86 cases (1.36%); oral pemphigoid, 15 cases (0.23%); and oral pemphigus, 4 cases (0.06%). The clinicopathological characteristics are summarized in Table.

DISCUSSION

Our study found that immunologically mediated oral diseases constitute a small fraction (1.66%) of oral biopsies submitted over two decades, with OLP being the most prevalent (1.36%), followed by pemphigoid (0.23%) and pemphigus (0.06%). This low prevalence aligns with the notion that while these conditions are significant due to their chronicity and potential severity, they are not commonly encountered in routine biopsy material (1, 2).

The observed clinical overlap among OLP, pemphigus and pemphigoid underscores a well-documented diagnostic challenge (1-3, 6). All three can present with erosions, ulcers and burning sensations, as seen in our cases. The presence of a positive Nikolsky's sign, noted in all our pemphigus cases, is a valuable but not pathognomonic clinical clue (15, 23). Our findings reinforce that clinical examination alone is insufficient for definitive diagnosis. The high diagnostic concordance between specialist clinical hypotheses and histopathology in our study contrasts with the potential for misdiagnosis by non-specialists, highlighting the need for increased awareness and referral for biopsy confirmation (2, 5).

Histopathology remains the cornerstone for diagnosis. The characteristic suprabasilar acantholysis with Tzanck cells in pemphigus, the subepithelial cleft in pemphigoid and the band-like lymphocytic infiltrate with Civatte bodies in OLP provide definitive differentiation (17, 24, 28). This study's retrospective re-evaluation confirms the reliability of these criteria.

The demographic findings, such as the equal gender distribution in our pemphigus cases, are consistent with some reports (5, 14), though other studies show a female predilection (22). The sites involved (buccal mucosa, gingiva) are classic for these diseases (13, 23).

Differential diagnosis of oral pemphigus comprises of (36-44):

- Recurrent aphthous stomatitis – appearance of ulcers (aphthae)in oral mucosa with yellowish base surrounded by an erythematous halo and regular margins and that vanish without treatment.
- Behçet's illness – presence of aphthae in the oral mucosa with genital and ocular ulcers.

Table. Clinicopathological characteristics of oral lichen planus, oral pemphigoid and oral pemphigus observed in the present retrospective study in different age periods

Lesion	No.	Clinical Picture	Histopathology
Oral lichen planus	86	Smooth red ulcers, Burning sensation, Non-scrapable Wickham's striae	Hyper-parakeratosis, Acanthosis, Saw tooth rete ridges, Civatte bodies, Band-like sub-epithelial mononuclear (T-cell/histiocyte) infiltrate
Oral pemphigoid	15	Multiple ulcers, Erosions, Erythematous, Burning sensation	Subepithelial cleft, Intact epithelium, Thickening of basement membrane, Dense inflammatory cell infiltrate
Oral pemphigus	4	Ill-defined ulcers, Erosions, Burning sensation, Nikolsky's sign	Suprabasilar split, Acantholysis, Tzanck cells, Relative scarcity of inflammatory infiltrate

- Erythema multiforme – target -shaped skin lesions, oral erosions, involvement of lips in the shape erosions and crusts.
- Erosive lichen planus – occurrence of Wickham striae and erosive lesions.
- Acute herpetic gingivostomatitis – prodromic symptoms followed by the onset of small yellowish vesicles that quickly rupture, resulting in ulcers with an erythematous halo. It affects free and attached gingiva.
- Impetigo – bacterial infection with presence of skin ulcers coated by a honey-colored crust. It affects face, arms and legs. It is more frequent in children.
- Disease due to linear IgA deposit – symmetric blisters and pruritic lesions, target-shaped lesions.
- Mucosal pemphigoid or cicatricial pemphigoid – likely manifestation of an underlying malignant disease. Oral lesions follow skin lesions and blisters are smaller with a shorter duration than in PV. They heal quickly without scarring.
- Bullous pemphigus – vesicles or tension blisters with lucid contents which show on normal or erythematous skin; severe pruritus, symmetric lesions that appear on flexion spots, root of extremities, thighs and abdomen; scarce on mucosa.
- Herpetiform dermatitis – 1-3 cm erythemas that penetrate palate and buccal mucosa; aphthae on labial mucosa. They present months or years after the appearance of lesion on skin.
- Epidermolysis bullosa – occurance of blisters with minimal pressure, ring -shaped atrophic scars on the inner surface of limbs and articulations.
- Paraneoplastic pemphigus – autoimmune syndrome connected to lymphoproliferative neoplasm of B cells.
- No oral lesions seen in Erythematous pemhigus and Pemphigus foliaceus.
- Chronic benign pemphigus familiaris – there are generally no oral lesions.
- Disseminated lupus erythematosus – systemic signs (fever, asthenia) usually accompanied by petechiae edemas and dry mouth.
- Crohn's disease and hemorrhagic rectal colitis – mucocutaneous symptoms accompanied by abdominal pain, aphthae in oral mucosa, asthenia, weight loss and anorexia.
- Folic acid or Vitamin B_{12} deficiency/ deficit – oral pain, erythematous tongue, asthenia and anemia, parasthesias in limbs and physical problems hypochromic iron deficiency pallor, tiredness, cephalalgias, vertigo, murmur in the ears, irritability, sleeplessness, focus problems, sensitivity to cold, anorexia and nausea.
- Enteropathic acrodermatitis – loss of taste and smell, vision problems, severe diarrhea, alopecia and hypertension.

Early and accurate diagnosis is paramount, especially for pemphigus, due to its life-threatening nature and the need for systemic immunosuppressive therapy (15, 17). For OLP, correct diagnosis guides management and informs the patient about potential malignant transformation risk (9-11). Therefore, a low threshold for biopsy and careful clinicopathological correlation are essential strategies for optimal patient management.

CONCLUSIONS

Immunologically mediated oral diseases constituted a relatively small proportion of oral biopsy specimens in this retrospective series. Despite their low prevalence, these disorders pose a diagnostic challenge due to overlapping clinical presentations. Oral lichen planus was the most frequently encountered entity, followed by oral pemphigoid and oral pemphigus. Accurate diagnosis relies on meticulous clinicopathological correlation, emphasizing the importance of histopathological evaluation. Early recognition is essential to guide appropriate therapeutic decisions and improve patient outcomes.

STATEMENT OF CONFLICTS OF INTEREST

The authors state no conflict of interest.

REFERENCES

1. Carmo MAV, Gleber-Netto FO, Romano MLF, Caldeira PC, Aguiar MCF. Clinical and demographic overlaps among immunologically mediated oral diseases: a challenge for clinicians. Gen Dent. 2014;62(1):67-72.
2. Rashid H, Lamberts A, Diercks GFH, Pas HH, Meijer JM, Bolling MC, et al. Oral Lesions in Autoimmune Bullous Diseases: An Overview of Clinical Characteristics and Diagnostic Algorithm. Am J Clin Dermatol. 2019;20(6):847-61.
3. Gonzalez-Moles MA, Scully C. Vesiculo-erosive oral mucosal disease--management with topical corticosteroids: fundamental principles and specific agents available. J

Dent Res. 2005;84(4):294-301.
4. Schifter M, Yeoh SC, Coleman H, Georgiou A. Oral mucosal diseases: the inflammatory dermatoses. Aust Dent J. 2010;55 Suppl 1:23-38.
5. Al-Janaby H, El-Sakka H, Masood M, Ashani W, Mendis W, Slack-Smith LM, et al. Xerostomia and Salivary Gland Hypofunction in Patients with Oral Lichen Planus Before and After Treatment with Topical Corticosteroids. Open Dent J. 2017;11:155-63.
6. Mahboobi N, Agha-Hosseini F, Lankarani KB. Hepatitis C virus and lichen planus: the real association. Hepat Mon. 2010;10(3):161-4.
7. Scully C, Carrozzo M. Oral mucosal disease: lichen planus. Br J Oral Maxillofac Surg. 2008;46(1):15-21.
8. World Health Organization. Tumours of the oral cavity and oropharynx. In: Barnes L, Eveson JW, Reichart P, Sidransky D, editors. Pathology and Genetics of Head and Neck Tumors. Lyon: IARC Press; 2005.
9. Gandolfo S, Richiardi L, Carrozzo M, Broccoletti R, Carbone M, Pagano M, et al. Risk of oral squamous cell carcinoma in 402 patients with oral lichen planus: a follow-up study in an Italian population. Oral Oncol. 2004;40(1):77-83.
10. Lodi G, Scully C, Carrozzo M, Griffiths M, Sugerman PB, Thongprasom K. Current controversies in oral lichen planus: report of an international consensus meeting. Part 2. Clinical management and malignant transformation. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2005;100(2):164-78.
11. Lodi G, Pellicano R, Carrozzo M. Hepatitis C virus infection and lichen planus: a systematic review with meta-analysis. Oral Dis. 2010;16(7):601-12.
12. Esmaili N, Chams-Davatchi C, Valikhani M, Daneshpazhooh M, Balighi K, Hallaji Z, et al. Pemphigus vulgaris in Iran: a clinical study of 140 cases. Int J Dermatol. 2007;46(11):1166-70.
13. Femiano F. Pemphigus vulgaris: recent advances in our understanding of its pathogenesis. Minerva Stomatol. 2007;56(4):215-23.
14. Ishii N, Maeyama Y, Karashima T, Nakama T, Kusuhara M, Yasumoto S, et al. A clinical study of patients with pemphigus vulgaris and pemphigus foliaceous: an 11-year retrospective study (1996-2006). Clin Exp Dermatol. 2008;33(5):641-3.
15. Scully C, Mignogna M. Oral mucosal disease: pemphigus. Br J Oral Maxillofac Surg. 2008;46(4):272-7.
16. Bagan J, Lo Muzio L, Scully C. Mucosal disease series. Number III. Mucous membrane pemphigoid. Oral Dis. 2005;11(4):197-218.
17. Scully C, Lo Muzio L. Oral mucosal diseases: mucous membrane pemphigoid. Br J Oral Maxillofac Surg. 2008;46(5):358-66.
18. Scully C, Challacombe SJ. Pemphigus vulgaris: update on etiopathogenesis, oral manifestations and management. Crit Rev Oral Biol Med. 2002;13(5):397-408.
19. Thongprasom K, Carrozzo M, Furness S, Lodi G. Interventions for treating oral lichen planus. Cochrane Database Syst Rev. 2011(7):CD001168.
20. Black M, Mignogna M, Scully C. Number II. Pemphigus vulgaris. Oral Dis. 2005;11(3):119-30.
21. Hashimoto T. Recent advances in the study of the pathophysiology of pemphigus. Arch Dermatol Res. 2003;295 Suppl 1:S2-S11.
22. Iamaroon A, Boonyawong P, Klanrit P, Prasongtunskul S, Thongprasom K. Characterization of oral pemphigus vulgaris in Thai patients. J Oral Sci. 2006;48(1):43-6.
23. Mignogna MD, Lo Muzio L, Bucci E. Clinical features of gingival pemphigus vulgaris. J Clin Periodontol. 2001;28(5):489-93.
24. Hammers CM, Stanley JR. Recent Advances in Understanding Pemphigus and Bullous Pemphigoid. J Invest Dermatol. 2020;140(4):733-41.
25. Shamim T, Varghese VI, Shameena PM, Sudha S. Pemphigus vulgaris in oral cavity: Clinical analysis of 71 cases. Med Oral Patol Oral Cir Bucal. 2008;13(10):E622-6.
26. Williams DM. Vesiculobullous mucocutaneous disease: Pemphigus Vulgaris. J Oral Pathol Med. 1989;18(9):544-53.
27. Scully C, Paes De Almeida O, Porter SR, Gilkes JJ. Pemphigus vulgaris: the manifestations and long-term management of 55 patients with oral lesions. Br J Dermatol. 1999;140(1):84-9.
28. Rajendran R, Sivapathasundharam B, editors. Shafer's Textbook of Oral Pathology. 6th ed. New Delhi: Elsevier India; 2009.
29. Neville BW, Damm DD, Allen CM, Chi AC. Oral and Maxillofacial Pathology. 4th ed. St. Louis: Elsevier; 2016.

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