IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 25, Issue 9 Ser. 3 (September. 2026), PP 40-46
www.iosrjournals.org

Desquamative Gingivitis as an Early Indicator of Vesiculobullous Disorders: A Case Series

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Abstract
Background*: Desquamative gingivitis is a clinical manifestation commonly associated with mucocutaneous disorders such as oral lichen planus and oral mucous membrane pemphigoid. This case series describes three female patients presenting with desquamative gingivitis.*
Case Series*: Two cases were diagnosed as oral mucous membrane pemphigoid, while one case was diagnosed as oral lichen planus based on clinical presentation and histopathological examination. Histopathological evaluation played a crucial role in establishing the definitive diagnosis. Management included topical corticosteroid therapy, reinforcement of oral hygiene measures, and dietary modifications to minimize mucosal irritation. The present case series highlights the importance of comprehensive clinical examination, histopathological confirmation, and individualized treatment planning in the successful management of desquamative gingivitis.*
Key words*: Desquamative gingivitis, Oral lichen planus, Oral mucous membrane pemphigoid, corticosteroid therapy*

Date of Submission: 09-09-2026 Date of Acceptance: 18-09-2026

I. Introduction

Desquamative gingivitis is a peculiar disorder marked by severe erythema, desquamation, and ulceration of both attached and free gingiva. It is not a disease per se, but rather a gingival response that manifests as a range of several disorders, including lupus erythematosus, erythema multiforme, lichen planus, pemphigus, and pemphigoid.[1]

Lichen planus is a relatively prevalent condition among these, affecting both the skin and mucous membranes. These lesions feature a variety of unique morphologies. Variables such as genetic or autoimmune factors, medications, infection, and psychogenic influence such as stress have been implicated in the pathogenesis of lichen planus. Histopathologically, it is characterised by saw tooth rete pegs, hyperkeratosis, and a dense sub-epithelial lymphocytic infiltrate. [1,2] Oral mucous membrane pemphigoid on the other hand is a rare, chronic autoimmune condition characterized by subepithelial bullae. It frequently involves the mucous membranes, with rare skin involvement. Histopathologically, junctional separation at the level of the basement membrane and resultant sub-basilar split is noted along with chronic inflammatory infiltrate in the lamina propria. [3]

This case series reports three cases of desquamative gingivitis. Two cases were diagnosed as oral mucous membrane pemphigoid while one case was diagnosed as oral lichen planus based on symptoms and clinical findings and further supported by histological examination.

II. Case Presentation

Case 1

A 45-year-old female patient reported to the outpatient department with chief complaints of halitosis, burning sensation of the gingiva, peeling of gingival tissues, and recurrent fluid-filled blisters that ruptured spontaneously over the past several weeks. The patient had no documented medical history or deleterious habits

and reported a regular menstrual cycle. She had been using fluoridated toothpaste regularly and denied any recent change in toothpaste or other oral hygiene products.

Intraoral examination revealed generalized erythematous and desquamative gingivitis predominantly involving the marginal and attached gingiva, along with a positive Nikolsky sign [Fig.1]. No cutaneous lesions, ocular involvement, or lesions affecting other mucosal surfaces were observed. After a thorough clinical examination, an incisional biopsy was performed from the gingiva adjacent to maxillary right first molar region (tooth 16) [Fig. 2]. Microscopic evaluation confirmed the diagnosis of Oral Mucous Membrane Pemphigoid [Fig.3].

The patient was prescribed topical corticosteroid therapy in the form of Triamcinolone acetonide 0.1% oral paste (Trioplast paste) to be applied over the affected gingival areas three times daily after meals. She was also advised to maintain oral hygiene using a soft-bristled toothbrush and non-irritating oral hygiene measures. Dietary instructions including the avoidance of spicy and acidic foods were provided to minimize mucosal irritation. During subsequent follow-up visits, marked reduction in burning sensation, gingival erythema, and desquamation was noted [Figs. 4,5].

Fig. 1: Case 1 - pre-operative clinical view

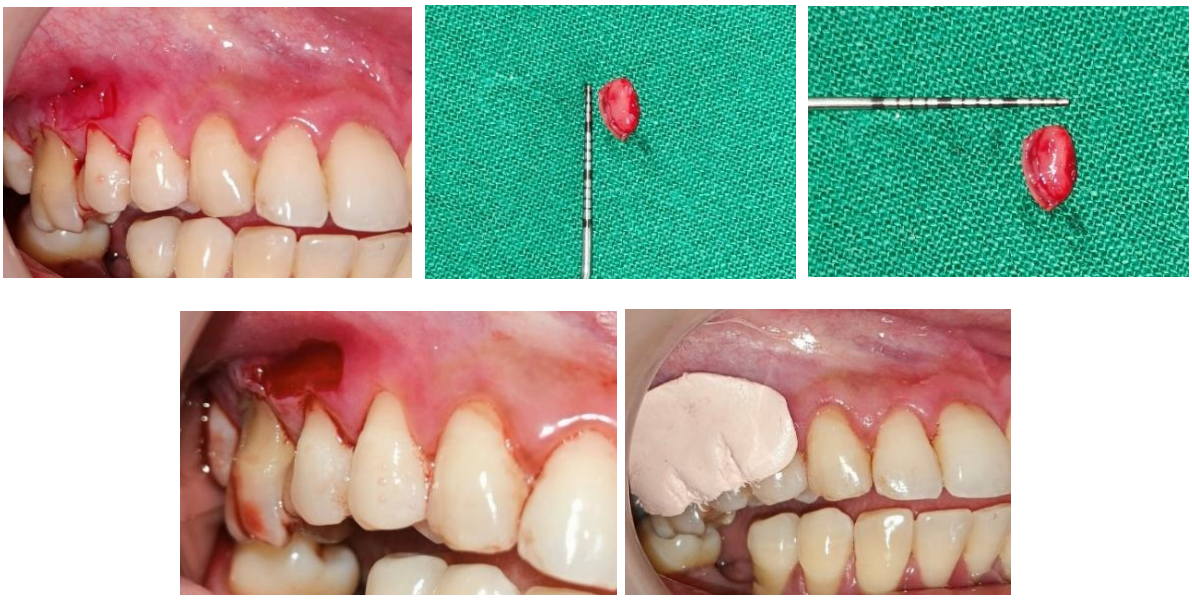

Fig. 2: Case 1 – Incisional biopsy performed in relation to maxillary right first molar region

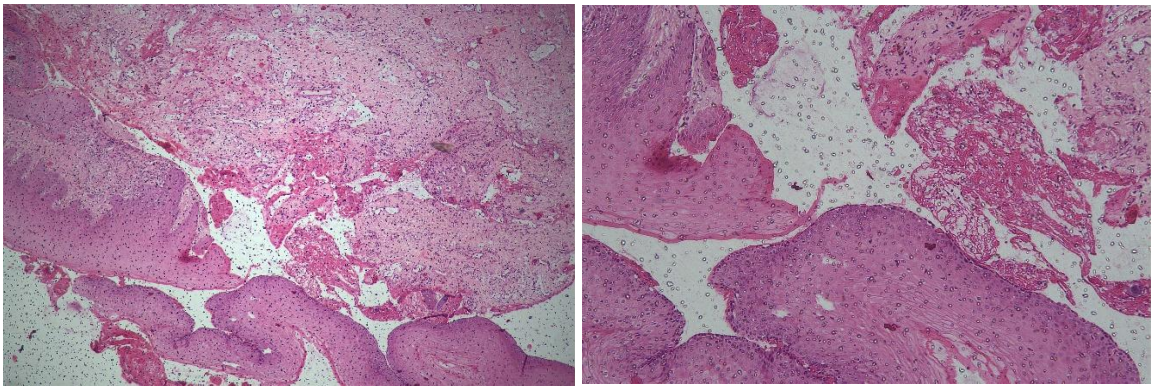

Fig. 3: Case 1- The haematoxylin and eosin-stained sections show hyperplastic and hyper parakeratotic stratified squamous Para keratinized epithelium overlying a fibro-cellular connective tissue stroma. The juxta-epithelial connective tissue stroma is moderately cellular, with diffuse chronic inflammatory cells, chiefly lymphocytes and evidence of a focal lymphoid aggregate, pre-vesicular edema, endothelial lined capillaries showing perivascular inflammation.

Fig. 4: Case 1 – 1-month follow-up

Fig. 5: Case 1 – 3-months follow-up

Case 2

A 40-year-old female patient reported with the chief complaint of painful and burning gums associated with recurrent rupturing blisters for the past three months. The patient had a history of hyperthyroidism for the past 5 years and reported a regular menstrual cycle. She had been using a herbal toothpaste (miswak) for several years.

Intraoral examination revealed generalized erythematous and desquamative gingivitis involving both the marginal and attached gingiva. Areas of epithelial peeling and superficial ulceration were noted, associated with tenderness and burning sensation along with a positive Nikolsky sign [Fig. 6]. No skin lesions, ocular involvement, or other mucosal lesions were detected. An incisional biopsy of gingiva adjacent to maxillary right first premolar and molar region was performed [Fig. 7]. Histopathological evaluation of biopsied tissue revealed the lesion to be Oral Mucous Membrane Pemphigoid [Fig. 8].

The patient was advised topical corticosteroid therapy in the form of Betnesol mouth rinse along with reinforcement of appropriate oral hygiene measures. Instructions regarding the use of a soft-bristled toothbrush and avoidance of spicy or irritating foods were provided. Regular follow-up visits were scheduled to evaluate healing and monitor for recurrence or development of extraoral manifestations. At subsequent follow-up visits, a significant improvement in burning sensation, gingival erythema, and desquamation was observed [Fig.9].

Fig. 6: Case 2 - pre-operative clinical view

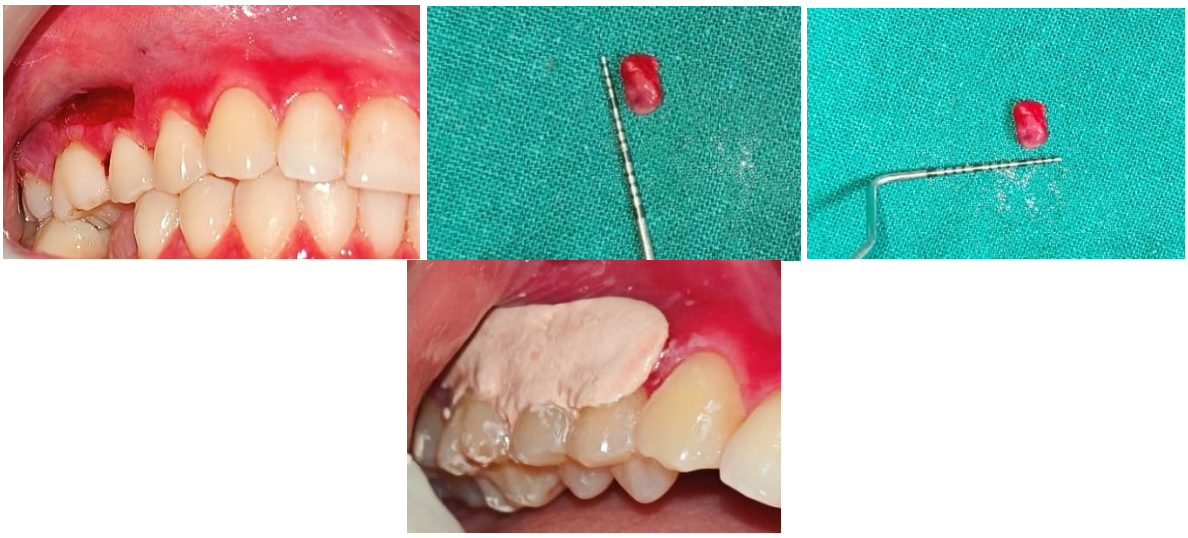

Fig. 7: Case 2 - Incisional biopsy performed in relation to maxillary right first premolar and molar region

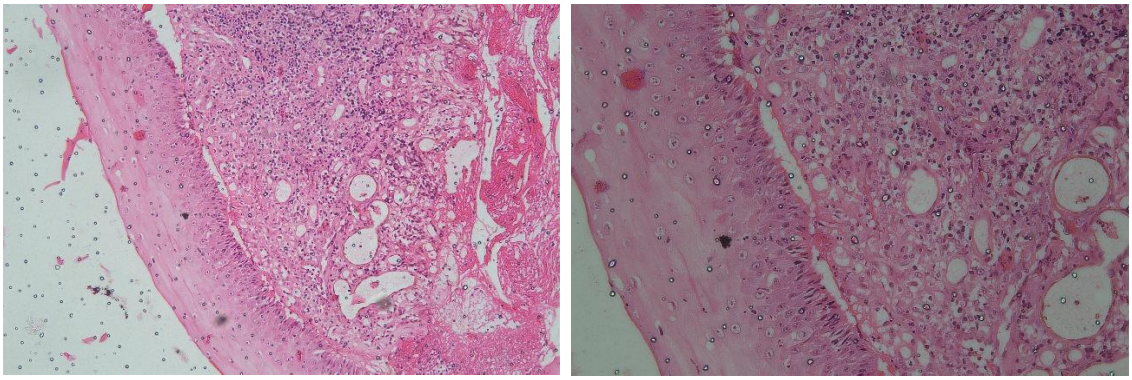

Fig. 8: Case 2 – The haematoxylin and eosin-stained section showed stratified squamous Para keratinized epithelium overlying a fibro cellular stroma. The epithelium showed loss of rete pegs and a sub-epithelial split. The juxta-epithelial connective tissue showed dense chronic inflammatory cell infiltrate and numerous budding capillaries.

Fig. 9: Case 2 – 3-months follow-up

Case 3

A 66-year-old female patient presented with the chief complaint of a persistent burning sensation involving the gingiva and bilateral buccal mucosa for the past three months. The symptoms were aggravated by the consumption of spicy foods. The patient also complained of peeling and desquamation of the gingiva during tooth brushing. She had no significant medical history and had attained menopause approximately 6–7 years earlier. She reported regular use of fluoridated toothpaste and denied any recent changes in toothpaste or other oral hygiene products.

Intraoral examination revealed bilateral reticular white striae on the buccal mucosa and gingiva, characteristic of Wickham's striae. The gingiva appeared erythematous and desquamative, predominantly involving the attached gingiva [Fig. 10]. Areas of mild tenderness and superficial epithelial desquamation were also noted. An incisional biopsy was performed from the gingiva adjacent to maxillary right first molar region [Fig. 11]. Histopathological examination confirmed the diagnosis of Oral Lichen Planus [Fig. 12].

The patient was prescribed topical corticosteroid therapy in the form of Kenacort 0.1% oral paste (triamcinolone acetonide) to be applied over the affected areas three times daily after meals. She was further advised to maintain meticulous oral hygiene using a soft-bristled toothbrush and to avoid spicy, acidic, and irritating foods that could exacerbate the symptoms. Regular follow-up visits were advised to monitor healing, symptomatic relief, and possible progression of the lesion. During subsequent follow-up appointments, considerable improvement in burning sensation, gingival erythema, and desquamation was observed [Figs. 13,14].

Fig. 10: Case 3 - pre-operative clinical view

Fig. 11: Case 3 - Incisional biopsy performed in relation to maxillary right first premolar and molar region

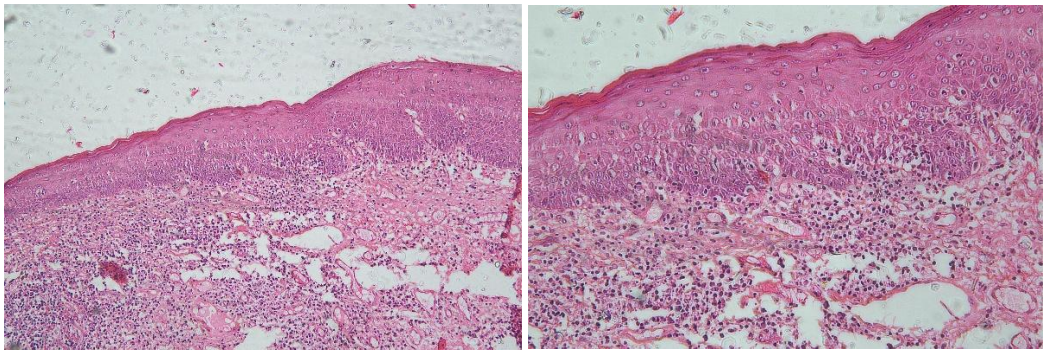

Fig. 12: Case 3 - The haematoxylin and eosin-stained sections show stratified squamous ortho and Para keratinised epithelium overlying a fibro-cellular connective tissue stroma. The juxta-epithelial connective tissue stroma shows a band of chronic inflammatory cell infiltrate which is chiefly lymphocytic in nature.

Fig. 13: Case 3 – 1-month follow-up

Fig. 14: Case 3 – 3-months follow-up

III. Discussion

Desquamative gingivitis is a clinical finding observed in mucocutaneous diseases, such as oral lichen planus and oral mucous membrane pemphigoid. However, it can also result from several different aetiologies, including as allergic reactions to toothpastes and mouthwashes (plasma cell gingivitis) and Crohn's disease. Desquamative gingivitis manifests clinically as fiery red, glossy, atrophic, or eroded gingiva that easily desquamates with little damage and lacks stippling. It is commonly observed in middle-aged or older women. [4] The present case series corroborates this finding. Two cases reported females with regular menstrual cycle while one case reported a postmenopausal female. Case 2 also had a positive medical history of hyperthyroidism suggesting a possible association with autoimmune conditions.

In many instances, gingival lesions occur relatively early in the clinical course and signify the beginning of the vesiculobullous disease. [5] The presence of bacterial plaque may complicate the diagnostic process. Desquamation, gingival epithelium erosion and blister formation, various intraoral and occasionally extraoral lesions, and related pain, particularly following ingestion of hot foods, are common clinical and microscopic hallmarks of most vesiculobullous illnesses. In patients with desquamative gingivitis, Nikolsky's sign frequently has a positive response (the application of a shearing force on normal-appearing gingiva generates epithelial desquamation).[6] Traditional oral hygiene practices and conventional therapy alone do not significantly change the clinical appearance of desquamative gingivitis, which frequently spares the marginal gingiva but can affect the entire thickness of the attached gingiva. In the present case series, all the lesions predominantly involved the marginal and attached gingiva.

The majority of Oral Lichen planus (OLP) and Oral Mucous Membrane Pemphigoid (MMP) cases begin as gingival lesions. [5] The primary oral characteristic of MMP is desquamative gingivitis [7], which may be the only symptom that manifests.[8] OLP can manifest independently or in conjunction with other types of lichen

planus on the skin. Patches of small white lines and dots, usually on the inside of the cheeks, gums, and/or tongue, are among its symptoms. Any possible cause of a lichenoid reaction should be found and eliminated by the clinician. It is advised to carefully evaluate and ask specific questions on any medications taken in the past few months as well as any contact allergies found during patch testing. [6]

In the current case series, all patients reported similar chief complaints albeit different in severity. Similar intra oral sites such as the maxillary marginal and attached gingiva in the right posterior areas were affected. All patients experienced symptomatic exacerbation during routine oral activities such as toothbrushing or consumption of spicy foods.

It is nearly impossible to differentiate between the diseases and disorders claimed to cause desquamative gingivitis based just on the clinical presentation. [6] Histological evaluation should be carried out to map systemic therapy because there are numerous possible aetiologies. [4] The absence of validated diagnostic nor treatment algorithms further complicates clinical decision-making. [6] Inaccurate or delayed diagnosis of desquamative gingivitis can be extremely dangerous because it might result in the wrong treatment of severe dermatological conditions. [4]

Treatment for DG remains a significant challenge, largely because its underlying pathogenesis is not fully understood. Patients with desquamative gingivitis cannot be managed according to a typical therapeutic plan. Physician preference, patient age, the underlying disease causing desquamative gingivitis, the severity of the disease, the presence or absence of extraoral lesions, and the patient's medical history, including the systemic impact of the disease and potential medication complications, are important factors in determining treatment strategies. The control phase is focused on using intensive therapy to suppress the disease activity following a successful diagnosis. [6]

Desquamative gingivitis should be treated with topical medications and good dental hygiene if there was no systemic involvement. Sometimes topical treatment is not enough to manage disease activity. Systemic therapy is recommended when patients comply with topical treatments but still experience erosions and pain. [4] Systemic therapy should be taken into consideration when topical medication has little effect. Intralesional corticosteroids (triamcinolone acetonide), topical corticosteroids (0.5% triamcinolone acetonide, 0.05% betamethasone dipropionate, and 0.05% clobetasol), or other topical anti-inflammatory drugs (topical tacrolimus, pimecrolimus, cyclosporine A, or tacrolimus rinse) may be beneficial. [6] In the current case series, all patients were managed conservatively using topical corticosteroid therapy along with supportive oral hygiene measures, resulting in significant improvement in follow-up visits.

Given the chronic nature of this condition and the potential for reactivation, patients with desquamative gingivitis should be examined life-long. It is advisable for the patients to be assessed at 2 to 4 weeks following the beginning of the treatment until the condition is under control and they are free of symptoms. Additionally, it is advised to check on patients every three to six months. Dentists should be aware of the symptoms of desquamative gingivitis since each patient is unique and requires customized care. Additionally, a management regimen involving dermatologists and dentists/oral pathologists may be required.[6]

IV. Conclusion

The cases highlight the heterogeneity of the nature of desquamative gingivitis and reinforce the importance of thorough clinical evaluation, histopathological confirmation and individualised management in identifying the underlying disorder.

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