

“Desquamative Gingivitis Treated By An Antioxidant Therapy- A Case Report”

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Abstract: Desquamative gingivitis is described as an erythematous, desquamated or eroded gingival lesion. Various etiologic factors are present for the appearance of such lesions. Despite of considering etiology, treatment is oftenly provided by systemic or topical corticosteroids. Apart from steroid application, another optionable treatment is antioxidant therapy which provides rapid healing of the tissue. As antioxidants posses various advantageous properties, it can be considered as a first treatment option for desquamative gingivitis. The presented case report of desquamative gingivitis is successfully treated using systemic antioxidants in the form of commercially available ‘oxitard capsule’.

Keywords: Antioxidants, Corticosteroids, Desquamative gingivitis, Oxitard capsule, Systemic

I. Introduction

“Desquamative gingivitis” is a descriptive term, first introduced by *Prinz* in 1932 that is synonymous with the presence of erythema, desquamation, erosion, and blistering of attached and marginal gingiva [1]. It is seen mainly in adults, especially women, although rare cases have been observed in children [2]. Mucous membrane pemphigoid, oral lichen planus and pemphigus vulgaris have emerged as the most common causes of desquamative gingivitis. It may occur due to aging, abnormal response to bacterial plaque, allergy, idiopathic, chronic infections, autoimmune diseases or idiopathic [1]. Definitive diagnosis of the specific disease or disorder causing desquamative gingivitis is mainly depend on clinical manifestations, histopathological examination and direct immunofluorescence testing [2].

There is no standard treatment protocol available for the management of patients with desquamative gingivitis. The treatment strategies vary according to the preference of the physician, the age of the patient, the severity of the disease and the site involved [1]. Treatment is most commonly provided in the form of plaque control and steroid application. Among the various available treatment modalities, antioxidants are also useful to treat dequamative gingivitis. Though it is more effective, it is less frequently used as a treatment option. Very few case reports are available in literature which had been treated using antioxidants. Here the presented case report of desuamative gingivitis was treated using antioxidant therapy.

II. Case Report

A 52-year-old female patient reported to the department of Periodontology, CSMSS dental college & hospital, Aurangabad, with the chief complaint of burning sensation in upper & lower anterior gingiva since 9 months. Also gave history of aggravation of burning sensation on having spicy & hot beverages.

On examination, red, linear, diffused patches noticed on the buccal /labial marginal gingiva with slight involvement of attached gingiva. Such reddish patches were present with respect to maxillary teeth (11,21,22,24,25,26) & madibular teeth (31, 32, 35,41,42,43). Lesions also showed signs of desquamation. (Fig 1, 2)

No significant dental and medical history was given. Patient had habit of tobacco chewing, 3-4 times in a day since last 10 years but she had quitted her habit, 3 yrs back. Patient also gave history of change of tooth paste, 1 year back which was continued by her for 3 months and again she shifted to her regular tooth paste. But the appeared desquamated lesion did not heal even after the discontinuation of changed tooth paste. Exact etiology for the appearance of desquamated lesions in this patient was not known. But it could be due the change of tooth paste, past tobacco chewing habit or nutritional deficiency.

After obtaining written consent, an incisional gingival biopsy was taken from maxillary anterior region for the histopathological examination. The hematoxyline & eosin (H & E) stained tissue showed clefts at the sub-epithelium. Underlying connective tissue showed bundles of collagen fibers arranged haphazardly along with fibroblast & small foci of inflammatory cells. (Fig. 3). Clefts in the epithelium were suggestive of desquamative lesions.

Thorough oral prophylaxis (scaling & polishing) was done. Patient was advised with 0.2% chlorhexidine mouth rinse, modified bass technique of brushing & also asked to maintain good oral hygiene. Topical application of steroid (Triamcinolone acetonide) twice in a day for three weeks was prescribed. Lesions did not show any improvement clinically with topical steroids application in the follow up visits.

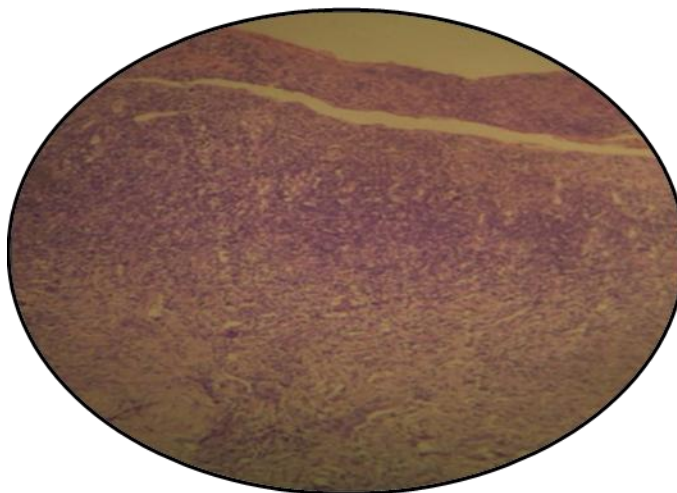
Patient was asked to stop topical steroid & shifted to the systemic antioxidant therapy. Commercially available ‘capsule oxitard’ (Himalaya drug company), which is a herbal antioxidant was advised to take systemically B.D. for two months along with reinforcement of oral hygiene maintenance. The patient was kept under observation upto 6 months. Desquamated lesions started healing and disappeared within 2 months of treatment. No recurrence was found. (Fig 4, 5)



(Fig 1): Desquamative gingivitis lesion with maxillary anterior teeth at baseline



(Fig 1.2): Desquamative gingivitis lesion with mandibular anterior teeth at baseline



(Fig 3): H & E stained tissue for histopathological examination



(Fig. 4): Disappearance of desquamative gingival lesions in maxillary region after antioxidant therapy



(Fig. 5): Disappearance of desquamative gingival lesions in mandibular region after antioxidant therapy

III. Discussion

Desquamative gingivitis is a fairly common disorder in which the gingiva is desquamated. Chronic soreness is commonly seen and intake of spicy foods may further worsen the condition. Erythematous gingiva with loss of stippling, extending apically from the gingival margins to the alveolar mucosa is a frequent observation. Severity may range from mild, almost insignificant small patches to widespread erythema with glazed appearance. Occasionally, such lesions may occur in the absence of bacterial plaque [1]. Differential diagnosis of multiple oral ulcers may include aphthous ulcers major, erosive lichen planus, mucous membrane pemphigoid, pemphigus vulgaris, acute necrotizing ulcerative gingivitis, allergies, acute herpetic gingivostomatitis, and erythema multiforme [3]. Sometimes contact allergic reactions to various oral hygiene products have also been reported to present as desquamative gingivitis [2]. But oral mucosa is less commonly prone to contact allergic reactions, when compared to skin, though the latter is exposed to a wide variety of antigenic stimuli [3].

The therapeutic approaches to desquamative gingivitis are based on expert opinion rather than empirical evidence. Several treatment methods have been reported (*Carrozzo & Gandolfo, 1999; Chan et al., 2002; Endo et al., 2008b; Fatahzadeh et al., 2006; Kirtschig et al., 2003; Lamey et al., 1992; Motta et al., 2009; Nisengard, 1996; Nisengard & Levine, 1995*) [2]. Treatments are available in the form of systemic or topical steroids, antimetabolites (cyclophosphamide, azathioprine, mycophenolate mofetil, methotrexate), antibiotics (tetracyclines), and dapsone intravenous immunoglobulins, plasmapheresis, and Low level laser therapy which causes pain relief and accelerates regeneration of damaged tissues [1].

Treatment of desquamative gingivitis requires elimination or control of local irritants. Rough restorations, illfitting dentures, traumatic oral hygiene procedures, and dysfunctional oral habits should be corrected [4]. In most of the cases, such lesions are successfully managed with topical corticosteroids combined

with effective plaque control [5, 6]. Plaque accumulation acts as a stimulus factor for worsening of desquamative gingivitis, but the plaque itself does not cause such lesions. It is difficult for patients with desquamative gingivitis to brush their teeth due to pain and bleeding. Therefore, their oral hygiene is likely to be ineffective, making it difficult to treat this condition [2]. Lack of correct oral hygiene and the accumulation of plaque may increase the long-term risk for plaque-induced periodontal diseases along with desquamative gingivitis [7].

Some of these desquamated lesions are a consequence of oxidative damage, therefore antioxidants can delay or inhibit oxidation of oxidizable substrate in a chain reaction. Therefore the presented case of desquamative gingivitis was successfully responded to the antioxidant therapy. The formulation of the oxiard capsules (Himalaya drug company) contains the extracts of *Mangifera indica*, *Withania somnifera*, *Daucus carota*, *Glycyrrhiza glabra*, *Vitis vinifera*, powders of *Emblica officinalis* and *Yashada bhasma*; and oils of *Triticum sativum*. *Mangifera indica* is shown to have antibiotic, anti-asthmatic, antiseptic, antiviral, hypotensive, anti-emetic properties. *Withania somnifera* provides overall health and wellness with its anti-stress, anti-anxiety, anti-inflammatory, anti-convulsive and anti-arthritic properties. *Daucus carota* acts as a good antiseptic as it is a rich source of vitamin A. *Glycyrrhiza glabra* normalizes the hoarseness in voice and has immunomodulatory and anti-inflammatory properties. *Vitis vinifera* have anti-inflammatory, astringent and an effect to curb the burning sensation. *Emblica officinalis* is a rich source of vitamin C and is a potent antibiotic. *Yashada bhasma* contains zinc which plays a significant role in protein synthesis, cell division and wound healing. *Triticum sativum* is a rich source of minerals and has an antioxidant property. Various ingredients of it acts as an immunomodulator, stimulator of antioxidant enzymes, free radical scavenger, astringent, source of vitamin A & C, potent antibiotic, also helps in protein synthesis, cell division, wound healing. Same drug formulation was successfully used in the treatment of Oral submucous fibrosis because of its antioxidant & anti-inflammatory properties [8].

Similarly, antioxidant properties of honey was used in the treatment of various vesiculobullous & desquamative gingivitis lesions. Pure, unboiled, commercially available honey was topically applied. Excellent healing noticed in such desquamative gingivitis lesions with no recurrence.⁸ The mechanism of therapeutic effects of honey as anti-inflammatory effect might be attributed to reduction in prostaglandin synthesis at the site of application, elevation of nitric oxide in the lesions, inhibition of leukotriene B₄, & to its antioxidant & anti-inflammatory activities [9]. Other antioxidant agents have also been successfully tried for desquamative gingivitis. Lower concentrations of retinoids combined with other antioxidant agents like lycopene and α -tocopherol (vitamin E) are known to have synergistic effect in the remission of the lichen planus lesions. Lycopene, a carotenoid, is a most efficient antioxidizing and immunomodulating agent, and is known to modify intercellular exchange junctions. It is the most promising candidate in reducing hyperkeratosis of oral mucosa and can be used effectively in management of oral lichen planus lesions. Alpha-tocopherol (vitamin E) is also an effective antioxidant at high levels of oxygen, protecting cellular membranes from lipidic peroxidation. It can be used to reduce the size of lichen planus lesions. Combination of lycopene, vitamin E, and retinoids, was found to be very effective in the reduction of gingival lesions of lichen planus, along with topical corticosteroids [10].

Various desquamated lesions are usually treated with steroids either topically or systemically. Steroids have many drawbacks, besides the side effects of long term use, they are not uniformly effective, can damage collagen, the candidiasis occasionally is a complication of their use. Antioxidants do not produce such effects even after long term use. So, antioxidants can be added to the traditional treatment modalities of desquamative gingivitis because it significantly speeds up resolution of inflammation, ulcerative oral lesions, pain sensation & helps to achieve healthy healing [9].

Further studies using long term follow up and histological examination for tissue changes after using antioxidants in desquamative gingivitis are required.

IV. Conclusion

The management of desquamative gingivitis is challenging because lesions reoccur after it goes into remission. The present case was successfully treated using systemic antioxidant therapy along with oral hygiene maintenance.

Clinical anecdotal evidence supporting the beneficial use of antioxidants for desquamative gingivitis lesion was found. Therefore antioxidants can be added to the traditional treatment modalities of such lesions & can be used as a first treatment option as a substitute to the corticosteroids.

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