Periodontal Treatment of Benign Mucous Membrane Pemphigoid

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LEARNING OBJECTIVES:

After reading this article, the individual will learn:
• The diagnosis, clinical presentation and treatment for BMMP.
• The importance of effective bacterial plaque control in improvement of BMMP lesions.

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INTRODUCTION

Benign mucous membrane pemphigoid (BMMP) is a vesiculobullous/vesiculoerosive chronic disease, somewhat rare, with an autoimmune etiology, that involves mainly the oral cavity.\(^1-6\) However, it can also affect other mucous membranes such as conjunctive, genital, esophageal, and laryngeal.\(^4,7,8\) Although these lesions can be observed in young individuals, the disease affects mainly middle-aged and older individuals (aged 50 to 80 years), with higher predilection for women in the proportion of 2:1, without presenting geographic and ethnical differences.\(^4,6,9,10\)

The diagnosis is made with regard to the history, symptoms, clinical presentation, and histopathology. The histopathological findings define epithelial splitting disease which is more easily viewed and often confirmed with immunofluorescence. Therefore, it is often necessary to bisect the biopsy specimen and submit half for hematoxylin and eosin, and half for immunofluorescence. Furthermore, the “Siegel” technique can be utilized, in which the surgeon generates a positive Nikolsky’s sign and teases off the epithelial layer for histopathologic submission with immunofluorescence. BMMP is often noted for a positive Nikolsky’s sign. A positive Nikolsky’s sign refers to blistering upon light pressure to adjacent epithelial tissue. The differential diagnosis includes other oral autoimmune vesiculoerosive disease such as oral lichen planus, discoid lupus, pemphigus vulgaris, and erythema multiforme major, and other oral inflammatory disease such as oral candidiasis. Once the diagnosis is made, it is important for the dentist to refer the patient to an ophthalmologist for the evaluation of degenerative ocular disease.\(^1-5,11\)

The sites of higher involvement in oral mucosa are gingiva, buccal and alveolar mucosa, palate, tongue, and inferior lip,\(^5,8,12-14\) with manifestations that vary from erythema to vesicles/blister formations that break and expose the subjacent conjunctive tissue (erosion/ulceration). The individual with BMMP may be completely free from any symptoms or may
complain about a burning sensation,\textsuperscript{8} accompanied or not by pain symptoms, depending on the degree of superficial desquamation.\textsuperscript{9,12} The manifestations described above frequently involve both free and attached gingival margin, embracing the predominance of different forms, from erythema with few areas of desquamation to extensive ulcerated areas that can be denominated as desquamative gingivitis. This condition results in the formation of subepithelial blisters, which can result in detached epithelium even with minimal manipulation of gingival tissue (positive Nikolsky’s sign), thus promoting bleeding and pain in the reddish surfaces.\textsuperscript{6,8,12} Intact blisters are rarely observed, and the presence of a pseudomembrane, easily detached and that exposes the subjacent conjunctive tissue when removed, is common.\textsuperscript{9,15}

As BMMP is a chronic condition, the control of the clinical situation requires adequate treatment. Therapy for autoimmune vesiculoerosive disease is directed to control disease rather than cure disease. Such treatment is variable, individual, and requests a multidisciplinary approach that includes dentists, dermatologists, and ophthalmologists. The therapeutic use of systemic corticosteroids is dependent on the degree of involvement of oral and other mucous membranes.\textsuperscript{5,6,13} However, when lesions are restricted to the oral cavity, the administration of topical corticosteroids is the treatment of choice, promoting good results and reducing collateral effects.\textsuperscript{2}

In conjunction with corticosteroid therapy, the elimination of trauma and infection is beneficial for patients with BMMP with oral manifestations. In this context, nonsurgical periodontal therapy consisting of scaling and root planing, effective bacterial plaque control, and the elimination of factors that can directly damage the tissue can represent an important approach for the control of lesions.

A case report is described that demonstrates the importance of periodontal support therapy with effective bacterial plaque control in improvement and stabilization of gingival manifestations of BMMP.

**CASE REPORT**

A male patient, aged 60 years, presented with a complaint of a bleeding gingival blister formation with rupture of the blisters. He was a former smoker with controlled hypertension. Lesions had been present for 4 years and showed intense bleeding during tooth brushing. The patient had been examined previously by 3 periodontists, but no definitive diagnosis was obtained. Clinical examination revealed erythema and bleeding in free and attached gingiva (Figure 1), with the presence of bleeding blisters in the distal region of the maxillary left second molar and mandibular right alveolar ridge (Figure 2). A biopsy was performed on the mandibular alveolar edge and confirmed the hypothetical diagnosis of BMMP.

After evaluation of oral hygiene condition by plaque index,\textsuperscript{15} treatment was initiated, consisting of 0.05% beclomethasone (dipropionate) spray and nonsurgical periodontal therapy consisting of scaling and root planing, and tooth polishing with nonabrasive toothpaste. The tooth brushing method prescribed was the modified Stillman with
the same toothpaste used during polishing. After 15 days, a partial improvement in clinical condition was observed, with approximately 50% reduction of blisters and erosive areas associated with a decrease of bacterial plaque surfaces. However, the interproximal regions presented desquamation and erosion (Figure 3) related to the difficulty in controlling bacterial plaque (Figure 4). Oral hygiene instruction was reinforced with the use of an interdental toothbrush that resulted in improvement of the clinical condition. In this phase, due to the continuous use of topical corticosteroids, an antifungal drug (20 mg of miconazol, oral gel) was prescribed.

After 90 days from the beginning of treatment, the patient reported a worsening of the condition that was related to stress episodes (Figure 5). The periodontal support and bacterial plaque removal were intensified on a weekly basis, and an alcohol-free 0.12% chlorhexidine solution was prescribed and applied in regions with higher plaque accumulation. The topical corticosteroids and antifungal drugs were discontinued. A 90% improvement in lesions was observed 160 days after beginning the treatment (Figure 6). The support periodontal therapy was evaluated every 3 months for a 5-year period, and no exacerbation of the clinical condition was observed.

**DISCUSSION**

The BMMP diagnosis is not always easily defined, and many times the inflammatory feature of gingival lesions can mimic periodontal disease. In this context, it is important to consider periodontal disease not only in the differential diagnosis, but also in the treatment of BMMP.

Oral hygiene maintenance is beneficial for patients with autoimmune vesiculoerose disease. Inflammation secondary to bacterial plaque tends to increase both the frequency and severity of BMMP and other autoimmune disease entities.

Even though tooth brushing may be associated with pain and possible blister ruptures, excellent oral hygiene is fundamental to bacterial plaque control. Inflamed gingiva tends to be painful; therefore plaque control tends to be more difficult. It is not unexpected that patients with BMMP tend to have higher levels of gingival inflammation than control patients. Oral hygiene must be evaluated by an appropriate and reproducible index to verify the necessity of altering hygiene procedures and to evaluate the results of treatment. In the present case, the Silness-Löe plaque index was used.

Avoiding trauma, pain, and discomfort during tooth brushing is also essential for BMMP patients. Thus, in the case presented, the patient was advised to use the modified Stillman technique, preventing the insertion of toothbrush bristles in the marginal gingiva. The careful use of dental floss was also recommended. The type of toothbrush is also of importance, and in the cases of BMMP it must be extra-soft. It is suggested to utilize toothpastes which are low-abrasive and free from whitening agents and/or inhibitors of bacterial plaque and dental calculus formation. Mouthwashes containing alcohol, hydrogen peroxide, cetylpyridinium chloride, thymol, or menthol may exacerbate the clinical condition and must be avoided.
The use of chlorhexidine digluconate, although it has an unquestionable effect on bacterial plaque control, must be avoided during acute manifestation of lesions, but it can be applied after the improvement of clinical condition in a non-alcoholic formulation.

In the case presented, the plaque control performed by a professional and the application of 0.12% chlorhexidine digluconate resulted in 90% improvement of lesion conditions, demonstrating the importance of bacterial plaque control for the treatment of BMMP.

Scaling and root planing must be carefully and delicately accomplished in order to prevent tissue dilacerations, particularly in patients with a positive Nikolsky’s sign. During polishing, a rubber cup and low-abrasive prophylaxis paste in controlled speed must be used, thus avoiding injuries to gingival tissue. As a complementary procedure, areas with bacterial plaque retention, which make control of lesions more difficult, must be corrected; caries lesions must be restored and faulty prostheses and other restorations must be corrected. Agents that cause direct injuries to tissue must also be removed.1

Lesions should be considered for re-evaluation monthly and, after clinical stabilization, every 3 months. Professional plaque control and oral hygiene instruction should be considered weekly until improvement in the clinical condition is observed, and then intervals should be determined based on the requirements of each patient.

Possible surgical interventions for aesthetic reasons or complementary treatment as needed may be considered after the described periodontal treatment for BMMP, but only if BMMP-related lesions are in the remission phase, which permits adequate tissue manipulation. However, there is the possibility that the trauma of surgery will result in a flare-up of the BMMP condition. There are controversies concerning the maintenance of local corticosteroids during the post-operative phase, because these medications can retard cicatrization.23,24

The present case demonstrated that the periodontal treatment described was effective in reducing the gingival manifestations of BMMP in our patient and represents a complementary treatment to the use of corticosteroids with the aim of improving lesion conditions. This successful therapeutic result corroborates with the report by Damoulis and Gagari,23 which proposed a combined treatment of topical corticosteroids with periodontal therapy in patients with BMMP, highlighting the importance of frequent periodontal support visits.

**CONCLUSION**

A case has been presented which demonstrates that nonsurgical periodontal treatment with effective support therapy and plaque control was effective in improving and stabilizing the gingival manifestations of BMMP.

**REFERENCES**

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1. **Benign mucous membrane pemphigoid (BMMP) is:**
   a. A chronic disease with a bacterial etiology, that affects mucous membranes.
   b. An autoimmune disease with higher predilection for men in proportion of 2:1.
   c. A vesiculobullous/vesiculoerosive disease that involves only the oral cavity.
   d. A chronic disease that affects mainly middle-aged and older individuals.

2. **Which of the following is NOT one related to diagnosis of BMMP:**
   a. Histopathological findings.
   b. Clinical presentation.
   c. Periodontal therapy.
   d. Symptomatology.

3. **The differential diagnosis of BMMP includes:**
   a. Oral lichen planus.
   b. Periodontitis.
   c. Oral leukoplakia.
   d. Both a and b.

4. **In relation to desquamative gingivitis, the following is NOT correct:**
   a. This clinical sign is always present in individuals with BMMP.
   b. Results in the formation of subepithelial blisters and detached epithelium.
   c. Promotes bleeding and pain.
   d. Is characterized by extensive ulcerated areas.

5. **The adequate treatment of BMMP with gingival manifestation requires:**
   a. Only topical corticosteroids therapy.
   b. Systemic and topical corticosteroids therapy.
   c. Corticosteroid and nonsurgical periodontal therapy.
   d. Only fungal therapy.

6. **In relation to oral hygiene of individuals with gingival lesions of BMMP:**
   a. Dental floss is not recommended.
   b. The type of toothbrush is not significant.
   c. Mouthwashes containing alcohol are recommended.
   d. Low-abrasive toothpastes are recommended.

7. **The bacterial plaque control of patients with BMMP is:**
   a. Effective in reducing the gingival manifestations.
   b. Not beneficial for patients with autoimmune diseases such as BMMP.
   c. Associated with pain and should not be performed.
   d. Recommended for patients without gingival lesions.

8. **A positive Nikolsky’s sign refers to:**
   a. Blanching of adjacent epithelial tissue.
   b. Blistering upon light pressure to adjacent epithelial tissue.
   c. Inflammation of adjacent epithelial tissue.
   d. None of the above.
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