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A New Approach to the Pharmacological Treatment of Oral Lichen Planus: Case Report

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Abstract

Background: Lichen Planus (LP) is a chronic inflammatory mucocutanoeus disease with an unclear pathogenesis, in which the immune system plays an important role. In the majority of the cases the disease affects the oral mucosa, but it may also affect also the skin, the vaginal mucosa, the hair scalp and the nails. These lesions are generally multiple and almost always appear bilaterally with a symmetric distribution. In some cases the lesions represent erythematous and erosive characteristics mixed or superimposed on each other.

Case Report: The purpose of this article is to report a case of 79-year-old male with Oral Lichen Planus for more than 10 years. Previous therapies have proved partially success because their withdrawal was associated with a more aggressive reactivation of the lesions. Our aim is to report a new approach to the standard therapy for the management of the disease and the long term life improvement of the patients.

Conclusion: Improvement of symptoms in this case is achieved with the use of local corticosteroids. Since the treatments are not specific, they aim at eliminating the inflammation. Therefore, they are partially successful. Besides pharmacological treatment, maintaining oral hygiene and particularly the cooperation of the patient, are essential factors in the successful management of the disease.

Keywords: oral lichen planus, corticosteroids, long term therapy.

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INTRODUCTION

Lichen Planus (LP) is a chronic inflammatory mucocutanoeus disease with an unclear pathogenesis, in which the immune system plays an important role (1). In the majority of the cases the disease affects the oral mucosa but it may affect also the skin, the vaginal mucosa, the hair scalp and the nails (2,3). Its clinical forms are reticular, papular, plaque, erythematous (atrophic), erosive and bullous which is very rare. The unique characteristic is often presented under the appearance of lesions in parts of traumatized or damaged skin, also known as the *Koebner phenomenon.* In most cases, LP is limited to the oral mucosa. These lesions are generally multiple and almost always appear bilaterally with a symmetric distribution. In some cases the lesions represent erythematous and erosive characteristics mixed or superimposed on each other. Prevalence rates of oral lichen planus (OLP) vary from 0.5% to 2.2% of all population. The disease affects more women than men in a ratio 3:2. Most of the patients belong to the fifth decade with an average age of diagnosis 55 years (4).

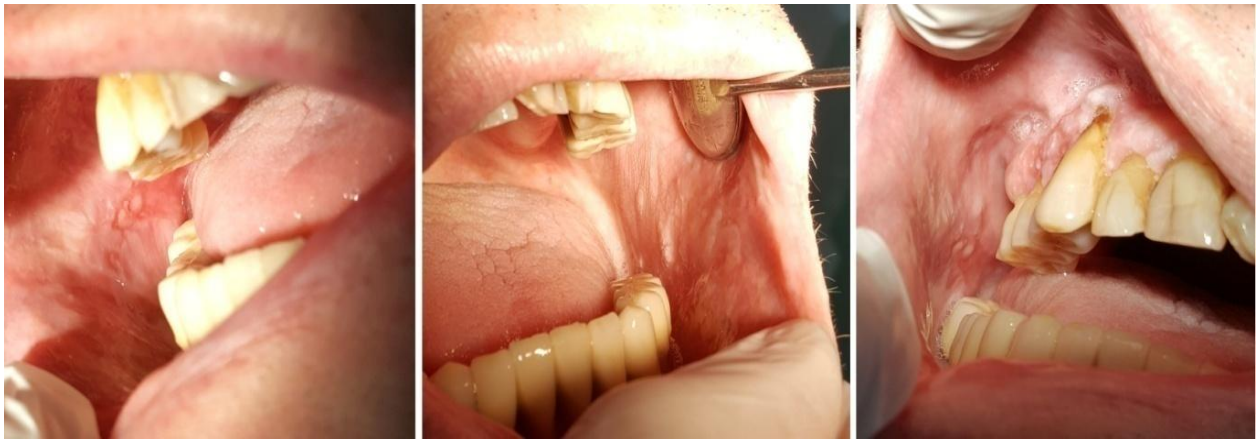
CASE REPORT

A 79 years old, male patient was referred to the University Dental Clinic of Tirana with the chief complaint of pain and burning sensation in the mouth during nutrition. The first symptoms appeared approximately 10 years ago. At that time, the patient was treated with clobetasol propionate 0.05%, 3times a day for 2 months. During that period, lesions showed improvement and no pain was present. After a period of interruption of the medication, a more aggressive reactivation of the lesions was noted associated with severe pain and burning symptoms during nutrition. During that period the patient did not use medications, instead he tried by himself to manage the symptoms changing his lifestyle and diet. Furthermore, after a few years the patient was treated by medical prescription with triamcinolone acetonide 0.5% cream 2 times a day for 1 month accompanied with topical gel for tissue regeneration with amino acids and hyaluronic acid. The therapy was partially successful. Four months after completion of the therapy, lesions appeared again and the patient complained as usually as in the past. . After 3 years from the last medical visit regarding this issue, the patient presented at our clinic. In a general examination, the patient reported surgery for cholecystectomy 37 years ago and he suffers from hypertension for more than 20 years which is perfectly managed by medications as stated. The subject uses digoxin, atenolol and aspirin. Recent blood tests showed values within normal range. No allergic reactions and no significant family history were reported. The patient does not smoke and rarely drink small amounts of alcohol. Tooth brushing is performed once a day with a horizontal movement without exercising force. Depression, anxiety and stress test (DASS) resulted negative. In a general perspective, the patient looked healthy.

A clinical intraoral examination showed bilateral erosive buccal lesions, in the right retro molar triangle and in the first quadrant extended from the second incisive to the first molar gingiva (Fig.1).

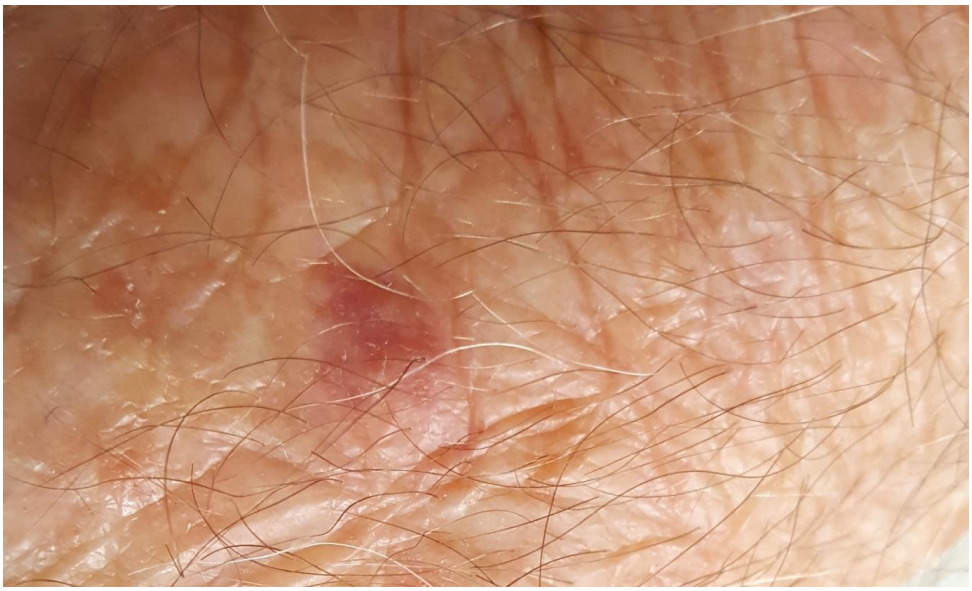
The preliminary clinical diagnosis was oral lichen planus. Differential diagnosis may include pemphigus, pemphigoid, lichenoid lesions associated with contact with restorative materials, leukoplakia and lupus erythematosus.

Fig. 1. Lesion distribution in the oral cavity at the first visit.



Extra oral examination resulted with purplish-colored lesions in the dorsum of the hands and a few nodules in the wrists (Fig.2).

Fig.2. Purplish-colored lesions in the dorsum of the hands.



To confirm the diagnosis incisional biopsy was performed. The specimen was taken from left buccal area in the center and edge of the lesion.

The histopathological result exhibited characteristics of LP with absence of malignant elements. To improve and stabilize the disease, the patient underwent a new pharmacological treatment plan. This plan was designed to heal the lesions, to maintain long ime results and to improve the quality of life for the patient. The therapy consisted in the use of fluocinolone acetonide 0.01% w/ lidocaine chlorhydrate 2% cream for local application directly in the affected area, mouth wash with chlorhexidine 0.1% and regenerative gel with amino acids and hyaluronic acid for local application directly in the affected area.

Corticosteroid was left to act for 30 minutes, while regenerative gel for 1 hour. In the evening, mouth wash with chlorhexidine 0.1% was done between these medications for 1 month. During the application of the drugs, the patient did not consume food or beverages. Dermatological preparations were applied in clean mucosa. The purpose of this combination consists in reducing inflammation and bacterial load and to stimulate tissue regeneration. To maximize the therapeutic efficiency and minimize side effects due to systemic absorption of corticosteroid, a de-escalated therapy was carried out (Tab.1).

Period (months)	Prescription	Usage
0-1	Fluocinolone acetonide 0.01% w/ lidocaine chlorhydrate 2%	3 times/day
	Mouth wash with chlorhexidine 0.1%	1 time/evening
	Regenerative gel with amino acids and hyaluronic	3 times/day
1-3	Fluocinolone acetonide 0.01% w/ lidocaine chlorhydrate 2%	2 times/day
	Regenerative gel with amino acids and hyaluronic	2 times/day
3-5	Fluocinolone acetonide 0.01% w/ lidocaine chlorhydrate 2%	1 time/day
	Regenerative gel with amino acids and hyaluronic	1 time/day
5-6	Fluocinolone acetonide 0.01% w/ lidocaine chlorhydrate 2%	1 time/3 days
	Regenerative gel with amino acids and hyaluronic	1 time/3 days

Tab.1. Therapy mode distributed in the duration of treatment.

RESULTS

To assess the impact of pharmacological treatment in the progress of the disease, we used the scoring system proposed by Kaliakatsou et al. (2002) (5) which includes the visual analog system for measuring the pain degree (Tab.2).

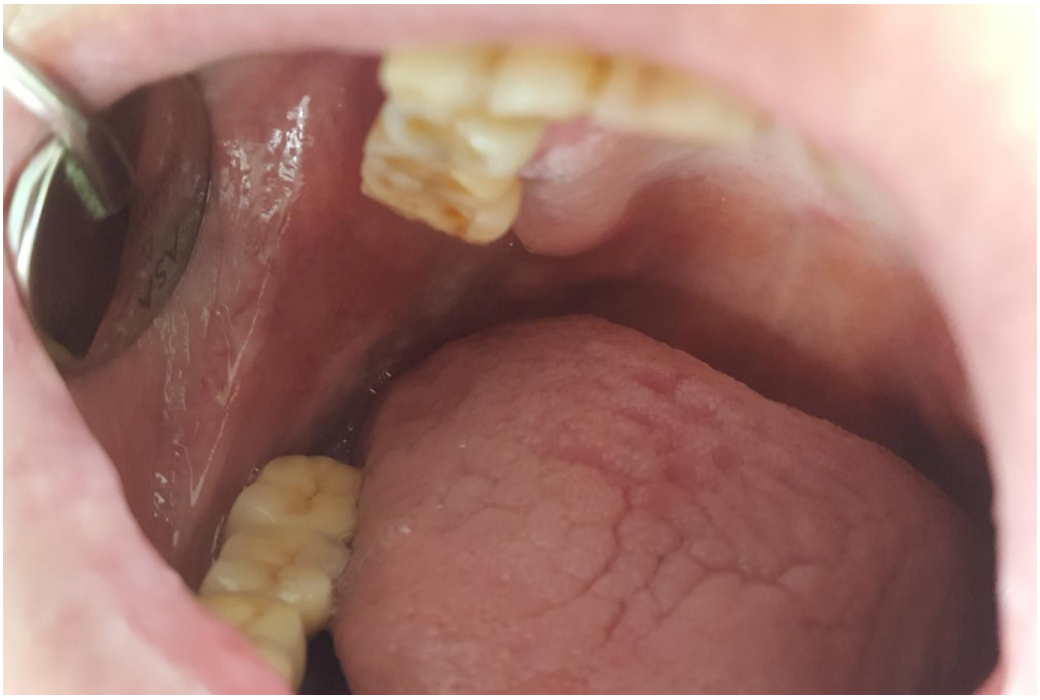
In the first clinical checkup, 10 days after the treatment plan had begun, the patient reported reduction up to 80% of pain and burning sensation and decreased lesions dimensions were noticed. In the second checkup, 1 month after the beginning of the treatment, the patient reported a complete absence of pain and burn sensation and was able to enjoy food again.

Period (months)	Evaluation of lesions	Evaluation of symptoms	
		VAS quiescence	VAS during nutrition
0	3	1	5
1	2	0	2
3	2	0	0
6	1	0	0

Tab. 2. Disease scoring system proposed by Kaliakatsou et al. (2002)*

*0= no lesion; 1= white striae only; 2= white striae and erosion ≤ 1 cm^2; 3= white striae with erosion ≥ 1 cm^2;4= white striae with ulceration ≤ 1 cm^2; 5= white striae with ulceration ≥ 1 cm^2. *Visual Analog Scale*: from 0 to 10; 0 – absence of pain, 10 – most intense pain.

Fig.3. Buccal lesion 6 months after the beginning of the treatment.



Erosive areas on buccal surfaces were healed. However, slightly erythematous areas were noticed. Gingival lesion showed slower improvements. Following further checkups, respectively 3 and 5 months after the beginning of the treatment, pain and burning sensation during food was reduced and completely lacking in quiescent state. During these clinical evaluations, the dimensions of buccal lesions decreased steadily while gingival lesion presented a slower improvement. In the last clinical evaluation, 6 months after the beginning of therapy, pain and burning sensation was absent (Fig.3).

Buccal lesions were healed and gingival lesions had not improved since the last evaluation. During this period, cutaneous lesion showed no changes. In addition, no allergic reaction or side effect of medications was noticed. However, the patient would be monitored thereafter.

DISCUSSION

Lichen planus constitutes an autoimmune pathology with an unclear etiology. Lymphocytic inflammatory infiltrate invades epithelial tissues and promote apoptosis of epithelial cells causing a chronic inflammation. Although the literature reports it as a very frequent disease (6), diagnosed cases in our institution are few. Statistical studies in our country are limited. In our case, the patient presents a particular age compared to the average age of diagnosis reported in literature. Although causative factors are not clear, Ismail et al. (7) reports a list of aggravating elements for the OLP (Oral Lichen Planus) and lichenoid reactions such as drugs (anti-malaria, diuretics, gold salts, antiretroviral) dental materials (amalgam, composites and resinous materials, metals), chronic diseases of the liver and Hepatitis C virus and genetic influence. In our case, none of the above-mentioned factors is present. Besides them, stress has been identified as one of the most frequent causes for the deterioration of the disease. A recent study showed that patients with LPO exhibit higher levels of anxiety and depression as compared to the control groups (8). In our patient, depression, anxiety and stress test (DASS) resulted negative for depression and anxiety, and very low stress levels. Furthermore, the patient reported a quiet life without major concerns. LPO cases with minimal involvement of the skin consist in 15% of all cases. Whereas, there are very few reports of cases of LP of the skin and oral cavity along (9). In our patient, the oral lesions were bilateral, multiple and with irregular borders. As well, we noticed a minimal involvement of the hands and wrists. In the scientific community, there is no consensus for the potential of malignancy of LP (9). Studies show that erosive and atrophic forms have a higher chance of malignancy which ranges from 0.3% to 12.5% according to different assessment criteria used by various authors (10). Development of squamous cell carcinoma (SCC) can occur in areas directly involved with OLP, as well as in other parts of the mucous membranes (10, 11). However, it is

not clear whether the lesion itself has intrinsic potential for malignant transformation or external factors encourage this process (12). In addition, some authors suggest that due to misunderstandings, misinterpretations and an incorrect diagnosis of this pathology, the malignant tendency of this disease was legitimized with time. Most of the cases in which oral lesions have undergone transformations, constitute patients with known history regarding exposure to these factors. Others pose mistakes in diagnosis and some fail to prove the presence of LP during transformation. Apart from these reasons, major errors lie in the incorrect identification of changes in epithelial cells during microscope evaluation (13). In our case, the patient underwent an incisive biopsy. It was the first biopsy during the entire progression of the pathology. Results presented a lesion with histological features of LP and without the presence of malignant elements. Subsequently, we can affirm that during these years there was no evidence of malignant transformation and the actual erosive lesions, showed no histological malignant characteristics. However, in some case reports, erosive forms present abnormal epithelial features under a microscope and as such they may be more susceptible to the carcinogenic transformation. For this reason, patients who present these lesions should be kept under continuous observation (13).

Management of patients with LPO is very important. Due to the chronic nature of the disease, it affects the quality of life of the patients. In general, the observed therapeutic plans in related studies, tend to be aggressive and for a short time (14). Hence, some authors are convinced that LP is a precancerous disease, thus justifying a more aggressive therapy in order to give a counter response to the disease and autoimmune inflammation (14,15). Since this disease is not curable, we can only focus on improving symptoms and the quality of life of the patient. Therefore, we focused on a de-escalating therapy, with low potency corticosteroid but extended in time. Being aware of the fact the fact that immunity is a dynamic system, we believe that a 'coexistence' and 'friendly' therapy against autoimmune lesions would be a mutual language to achieve and maintain the desired result for a longer time in the post therapy period. The fact that previous topical pharmacological therapies with corticosteroids of class I (powerful) and class IV (medium power) have resulted in an even more aggressive recurrence of lesions, shows that a possibility of the management of this disease might be a coexistence with the disease (16). Pharmacological drug choices are various and include ointments with clobetasol propionate, dexamethasone, betamethasone valerate, triamcinolone acetonide, fluocinolone acetonide, fluocinonide and hydrocortisone. A low potency corticosteroid of class 6 as fluocinolone 0,01% (17) was chosen. The effects showed to be slower, compared with high potency corticosteroids. However, side effects caused by

systemic absorption were absent. Our concept is a gradual reduction of inflammation and maintaining long-lasting positive effects, with minimal adverse effects. Consequently, a balance of the immune system, which over time will lean toward a gradual recovery and sustainable results

CONCLUSIONS

In oral lichen planus, identification and elimination of stimulant and influencing factors is very important. Improvement of symptoms is almost always achieved with the use of local corticosteroids. Since the treatments are not specific, they aim at eliminating the inflammation and therefore they are partially successful. Although possibilities for a malignant transformation are small, patients should be kept under a long-term supervision, particularly those who represent erosive lesions. Besides pharmacological treatment, maintaining oral hygiene and particularly the cooperation of the patient are essential factors in the successful management of the disease.

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Conflict of interest disclosure: None.

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