UNIVERSIDADE FERNANDO PESSOA

DIAGNOSIS AND MANAGEMENT OF EROSIVE ORAL LICHEN PLANUS: REPORT OF A CLINICAL CASE

[Diagnóstico e abordagem do líquen plano oral erosivo: relato de caso clínico]

Dissertação de Mestrado

[Mestrado Integrado em Medicina Dentária]

Matilde Corciulo

Orientador

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Crescat scientia vita excolatur – Lascia che la conoscenza cresca, che la vita si arricchisca.

A mia madre, che ha plasmato amorevolmente il mio percorso.

Ti dedico questa tesi per il tuo sostegno incrollabile

e la tua ispirazione duratura.

Ti ringrazio per essere stata la mia luce guida,

per avermi insegnato la perseveranza e la dedizione.

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RESUMO

O líquen plano oral é uma doença autoimune comum, caracterizada por uma inflamação persistente da mucosa oral, causada pela ação das células T. Afeta predominantemente mulheres entre a quarta e a sexta décadas de vida. A sua etiologia não é completamente compreendida e as suas várias apresentações clínicas dificultam o diagnóstico e são um desafio terapêutico. Esta dissertação tem como objetivo fazer o relato de um caso clínico de líquen plano oral erosivo, de forma a contribuir para o esclarecimento do diagnóstico, abordagens terapêuticas e vigilância pós-tratamento, e formação contínua dos médicos dentistas em medicina oral. O caso clínico relata uma paciente de 68 anos diagnosticada com líquen plano oral erosivo cuja apresentação clínica e achados histopatológicos se alinham com as características comummente descritas na literatura. A paciente esteve sob acompanhamento clínico contínuo de 2021 a 2024, período durante o qual apresentou complicações como candidíase oral e queilite angular. Essas complicações ressaltam a importância da monitorização e da uma abordagem atenta à evolução da doença e efeitos adversos da terapêutica. As estratégias terapêuticas seguidas neste caso incluíram corticosteroides tópicos, antifúngicos tópicos para candidíase e queilite angular. A compilação da documentação iconográfica e história clínica detalhada ao longo de três anos, revela a importância do acompanhamento e monitorização desta doença.

Palavras-chave: líquen plano oral, apresentações clínicas, forma erosiva, diagnóstico, abordagens terapêuticas.

ABSTRACT

Oral lichen planus is a common autoimmune disease, characterized by persistent inflammation of the oral mucosa, caused by the action of T cells. It predominantly affects women between the fourth and sixth decades of life. Its etiology is not completely understood and its various clinical presentations make diagnosis difficult and a therapeutic challenge. This dissertation aims to report a clinical case of erosive oral lichen planus, in order to contribute to the clarification of the diagnosis, therapeutic approaches and post-treatment surveillance, and continuous training of dentists in oral medicine. a 68-year-old patient diagnosed with erosive oral lichen planus whose clinical presentation and histopathological findings align with the characteristics commonly described in the literature. The patient was under continuous clinical follow-up from 2021 to 2024, during which time she presented complications such as oral candidiasis and angular cheilitis. These complications highlight the importance of monitoring and an attentive approach to the evolution of the disease and adverse effects of therapy. The therapeutic strategies followed in this case included topical corticosteroids, topical antifungals for candidiasis and angular cheilitis. The compilation of iconographic documentation and detailed clinical history over three years reveals the importance of monitoring and monitoring this disease.

Keywords: oral lichen planus, clinical presentations, erosive form, diagnosis, therapeutic approaches.

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INDEX OF ABBREVIATION

°C	Celsium Degrees
AC	Angular Cheilitis
BD	Behçet's Disease
CD4+	Cluster of Differentiation 4 Positive
CD8+	Cluster of Differentiation 8 Positive
cm	Centimeter
CO_2	Carbon Dioxide
CPMD-UFP	Clínicas Pedagógicas de Medicina Dentária da Universidade Fernando Pessoa
DIF	Direct Immunofluorescence
DR6	Human Leukocyte Antigen-DR6
ELP	Erosive Lichen Planus
EOLP	Erosive Oral Lichen Planus
GVHD	Graft Versus Host Disease
HCV	Hepatitis Virus Infection
HPA	Hypothalamic-Pituitary-Adrenal
IFN-α	Interferon-alpha
IFN-γ	Interferon-gamma
IIF	Indirect Immunofluorescence
IL-12	Interleukin 12
IL-2	Interleukin 2
IL-4	Interleukin 4
IL-6	Interleukin 6
IU	International Units

Kv	Kilovoltage
LD	Lichenoid Dysplasia
LHRs	Lichenoid Hypersensitivity Reactions
LP	Lichen Planus
mA	MiliAmpere
mg/kg/daily	Miligram per Kilogram per Day
MHC-II	Major Histocompatibility Complex Class II
mm	Milimeter
MMPI	Minnesota Multiphasic Personality Inventory
MRG	Median Rhomboid Glossitis
NSAIDs	Non-Steroidal Anti-Inflammatory Drugs
OLL	Oral Lichenoid Lesions
OLP	Oral Lichen Planus
OPMDs	Oral Potentially Malignant Disorders
OSCC	Oral Squamous Cell Carcinoma
PUVA	Psoralen Ultraviolet A
PV	Pemphigus Vulgaris
SCC	Squamous Cell Carcinoma
SLE	Systemic Lupus Erythematosus
TNF-α	Tumor Necrosis Factor-alpha
WHO	World Health Organization

1. INTRODUCTION

The oral cavity serves as a reflection of one's overall health status, acting as a sentinel for early signs of health issues or ailments. It is crucial to accurately identify these oral manifestations to ensure that patients receive timely attention and care (Mehrotra et al., 2010).

Oral Lichen Planus (OLP) presents unique challenges in diagnosis and treatment due to its complex nature and varied clinical manifestations. Developing an effective treatment plan requires a thorough understanding of the condition and personalized approaches tailored to individual patient needs. This case report explores the importance of studying OLP a chronic inflammatory condition affecting the oral mucosa, often causing discomfort and pain for patients. Understanding its etiology, pathogenesis, and treatment modalities is essential for providing optimal care and improving patient outcomes. Secondly, OLP shares clinical features with other oral mucosal disorders, making accurate diagnosis challenging. Investigating diagnostic criteria and differentiating factors enhances diagnostic accuracyand prevents misdiagnosis. Lastly, OLP has been associated with an increased risk of oral cancer development in some cases. Exploring this association and identifying risk factors can aid in early detection and intervention, potentially reducing the risk of malignant transformation. Studying OLP is essential for improving patient care, enhancing diagnostic accuracy, and reducing the risk of complications, recurrence rates, and patient satisfaction.

1.1. Objectives and motivation

The objective of this case report is to assess the effectiveness of comprehensive treatment plans in managing OLP. This involves evaluating the integration of various therapeutic modalities, including topical medications, systemic therapies, and supportive interventions such as laser therapy, as applied in this case. The case report aims to analyze the impact of these treatment approaches on symptom control, lesion regression, and overall patient well-being, specific to this patient. Additionally, it seeks to identify factors contributing to treatment success or failure in this individual case, thereby providing insights into optimizing management strategies for OLP.

2. DEVELOPMENT

2.1. Contextualization of the theme and objectives

2.1.1. Chronic oral pathologies

Chronic oral pathologies encompass a diverse spectrum of conditions that affect the mucosal tissues within the oral cavity. These conditions can manifest as persistent lesions, which may either occur simultaneously with or precede cutaneous manifestations of the underlying disease. The etiology of these lesions is multifactorial, with potential causal factors including autoimmune or immune-mediated responses, reactive processes, genetic predispositions, or infectious agents (Bukhari et al., 2020).

Oral health holds universal recognition as a fundamental aspect of overall well-being. However, historically, its significance has often been underestimated, with a predominant focus on local clinical outcomes, thereby overlooking the broader impact on individuals' daily lives. The World Health Organization (WHO) provides a comprehensive definition of oral health, emphasizing its pivotal role in sustaining a disease- and disorder-free state. This encompasses not only essential physical functions such as biting, chewing, smiling, and speaking but also extends to encompass psychological and social well-being (Yactayo-Alburquerque et al., 2021).

The recognition of the importance of oral health-related quality of life underscores the holistic nature of oral health and its profound implications for individuals' overall health and happiness. This comprehensive understanding emphasizes the need for a shift in perspective towards a more holistic approach to oral health care. Such an approach acknowledges the interconnectedness of physical, psychological, and social well-being, recognizing that optimal oral health is integral to overall well-being (Yactayo-Alburquerque et al., 2021).

In light of this, it becomes increasingly apparent that addressing chronic oral pathologies requires a multidimensional approach that transcends traditional clinical paradigms. Integrated care models that incorporate aspects of preventive dentistry, psychological support, and social services are essential for promoting optimal oral health outcomes and enhancing overall quality of life. By recognizing the intricate interplay between oral health and holistic well-being, healthcare providers can better tailor interventions to meet

the diverse needs of patients, ultimately fostering healthier, happier communities.

2.1.2. The Historical Evolution

OLP stands as a significant autoimmune disorder, characterized by a chronic T-cell-mediated inflammatory process affecting the integumentary and mucosal tissues, which presents clinical heterogeneity, posing considerable challenges in diagnosis and management due to its protracted course and propensity for recurrence. This condition is now understood to be a relatively common chronic inflammatory dermatosis involving the oral mucosa, marked by the development of raised white multiform lesions as well as areas of erosion, ulceration, and vesicle formation (Alrashdan et al., 2016).

The etymology of the term "lichen" can be traced back to the Greek "Leichen," signifying a moss tree, while "planus," from Latin, further emphasizes the flattened nature of this condition. Ferdinand Ritter von Hebra's characterization of the dermatological presentation as "Oral Ruber Planus" in 1860, later recognized as "Lichen Ruber," initiated the historical elucidation of OLP. Erasmus Wilson formally adopted the nomenclature "Lichen Planus" in 1869, with subsequent contributions from Thibierge, Wickham, Andreasen, and Dubreuilith, culminating in Francois Henri Hallopeau's documentation of the inaugural case of OLP-related carcinoma in 1910 (Gururaj et al., 2021).

The classic appearance of white papules on the buccal mucosa and tongue, arranged in reticulate and plaque patterns, was initially described by Erasmus Wilson in 1869, and further elucidated by Thibierge in 1885, who also noted areas of superficial ulceration among the papules. Audry, in 1894, highlighted the possibility of oral mucosal lesions occurring independently of skin involvement, while Poor, in 1905, characterized the occurrence of vesicular or bullous lesions in oral lichen planus as subepithelial bullae. In 1906, Dubreuilh provided the first histologic description of oral lichen planus, emphasizing lymphocytic infiltration as a principal feature and underscoring the utility of oral biopsy for diagnostic purposes. Subsequent to these seminal descriptions, refinements in both clinical and microscopic descriptions followed. Larger series of cases were studied by various investigators, including Trautmann, Culver, Little, White, and Jacob. Recent years have seen comprehensive studies on oral lichen planus by Cooke, Shklar and McCarthy, Dechaume and associates, Simpson, Hermann, Grinspan and

associates, and Andreasen. Laufer and Kufferls provided a comprehensive review of this material in their monograph, elucidating nuances in clinical presentation and histopathological characteristics (Shklar, 1972).

2.1.3. Clinical manifestations

OLP exhibits distinct clinical features that are identifiable upon examination. Generally, OLP manifests in two primary forms: the reticular form and the erosive form, although other variations are also documented. Originally described by Mollaoglu (2000), additional forms include the papular, "plate-like," bullous, and atrophic forms. While lichen planus lesions may manifest throughout the oral cavity as multiple occurrences, they predominantly localize to the buccal mucosa, followed by the tongue, lips, and gingiva (Rangel & Rosa, 2008).

The reticular form of OLP is more prevalent and is characterized by white lacy streaks known as Wickham's striae, typically surrounded by discrete erythematous borders. However, in certain locations like the dorsum of the tongue, lesions may present as keratotic plaques. This form of OLP is usually asymptomatic and commonly affects the posterior jugal mucosa bilaterally. Additional affected sites may include the upper and lateral surfaces of the tongue, gums, and palate. The papular variant is characterized by tiny white pinpoint papules approximately 0.5 mm in diameter. This form is infrequently observed, and due to the diminutive size of the lesions, they may go unnoticed during routine oral examinations (Rangel and rosa, 2008).

Plaque-like lesions bear resemblance to leukoplakia and manifest as homogeneous white patches. These lesions may exhibit a slightly elevated and smooth texture or a slightly irregular form and can occur in multiple locations. The primary areas affected by this variant are typically the dorsum of the tongue and the buccal mucosa. However, plaque-like oral lichen planus demonstrates resolution in only 7% of cases (Mollaoglu, 2000).

Erosive oral lichen planus (EOLP) ranks as the second most prevalent type, characterized by a combination of erythematous and ulcerated areas bordered by finely radiating keratotic striae. EOLP involves the attached gingival tissue, it is termed desquamative gingivitis. These lesions exhibit migratory behavior over time and often appear multifocally. Patients affected by EOLP commonly report symptoms ranging from intermittent pain to severe discomfort, which can significantly impact

masticatory function. Two additional presentations, the atrophic and bullous forms, are considered variations of the erosive type. Atrophic OLP manifests as diffuse, erythematous patches surrounded by fine white striae, causing notable discomfort. In the bullous variant, intraoral bullae develop on the buccal mucosa and the lateral borders of the tongue; these bullae rupture shortly after formation, resulting in the characteristic appearance of EOLP (cf. Table 1) (Edwards & Kelsch, 2002).

Table 1

Atrophic OLP manifestations

Subtypes Olp	Clinical manifestations
Reticular	'Wickam Striae', Bilateral, Asymptomatic White lace type Erythematous or non-erythematous (Weston & Payette, 2015)
Erosive	Irregularly shaped Whitish pseudomembranes Severely erythematous mucosaAtrophy Radiating white striae at the junction between involved and uninvolved mucosaTypically painful (Weston & Payette, 2015)
Papular	Small white papules (0.5mm to 1.0 mm)Fine striae in the periphery Rarity Rarely observed (Canto et al., 2010)
Plaque-like	Whitish homogeneous irregularities similar to leukoplakia Mainly involves the dorsum of the tongue and the mucosa of the cheek Lesions can be multifocal (Canto et al., 2010)
Atrophic	Diffuse red lesions Resembles a combination of two clinical forms: - Presence of white striae characteristic of the reticular type - Surrounded by an erythematous area (Canto et al., 2010)
Bullous	Presence of blisters that increase in size Blisters tend to rupture, leaving the surface ulcerated and painful Lesion periphery surrounded by fine keratinized striae (Canto et al., 2010)

2.2. Materials and Methods

For the preparation of this thesis on the management and treatment of erosive oral lichen planus – a case report, a bibliographic research was conducted on various platforms, including PubMed,B-on, and Google Scholar. The consulted articles encompassed full texts published between 1972 and 2024. The consulted articles were written in Portuguese, Italian and English.

Using the keywords "management of erosive oral lichen planus" and "treatment of erosive oral lichen planus," a total of 161 articles were found. Of these, 93 were excluded due to

incomplete or irrelevant content, resulting in a total of 68 articles included in the study.

The search strategy on the PubMed platform involved defining the Mesh terms "Lichen Planus," "Erosive Form" , "Management" and “Treatment” combined using the boolean operator AND. The terms "leukoplakia" and "systemic lupus erythematosus (SLE)" were excluded from the results by incorporating the boolean operator NOT.

Regarding the inclusion criteria, the typology of articles considered for clinical case included reviews, original research articles, and case studies concerning oral lichen planus, systematic literature reviews.

The clinical case at the core of this research concerns a patient from the Private Clinic of the supervisor, affected by the described condition, followed from March 2021 to May 2024.

The patient was invited to participate in the study and promptly agreed, providing informed consent (cf. Annex A). The project was submitted to the Ethics Committee of the University Fernando Pessoa, where it was accepted (cf. Annex B). Authorization was also obtained from the clinical director of the private clinic for the release of the patient's clinical data.

2.3. Erosive Oral Lichen Planus

The EOLP lesion lead to varying levels of discomfort. Apart from pain, which is the most common complaint, patients also report sensations of burning, swelling, irritation, and bleeding upon tooth brushing (Eisen, 2003).

Effective management of OLP, as discussed in recent reviews, emphasizes patient education before treatment initiation. Patients should understand that therapy aims to control inflammation and symptoms, rather than cure the condition. Given the delayed response to treatment and the need for continuous maintenance, patients must be prepared for prolonged therapy. Variability in treatment response warrants consideration, withsequential use of multiple regimens often necessary for optimal symptom control (Chenget al., 2016).

Because no therapy for OLP is curative, the primary objective for symptomatic patients is palliation. While it might seem intuitive to speculate that aggressive treatment of erosive and atrophic OLP could reduce or eliminate the risk of malignant transformation,

this hypothesis remains unsubstantiated and unexplored (Eisen, 2003).

2.3.1. Understanding Oral Lichen Planus: Prevalence and Manifestations

Erosive lichen planus, one of the various clinical presentations of lichen planus, shares similarities with other forms of the condition. While the precise incidence of erosive LP remains undetermined, it typically manifests in individuals aged between the 5th and 8th decades of life, aligning with the age range commonly associated with other presentations of LP (Eisen, 2002).

The prevalence of OLP is estimated to range from 0.5% to 2.2%. Studies report a female-to-male sex ratio ranging from 1.5 to 3, and the typical age of onset falls between 30 and 60 years. Beyond the oral cavity, lichen planus can affect other anatomical sites such as hair follicles, leading to lichen planopilaris and scarring alopecia, as well as nails, esophagus, and occasionally, the eyes, urinary tract, nasal mucosa, and larynx (Farhi & Dupin, 2010).

Genital and cutaneous lichen planus are associated with approximately 20% and 15% of OLP cases, respectively. OLP is observed in 70% to 77% of individuals with cutaneous lichen planus (Farhi & Dupin, 2010).

Considering the prevalence of OLP and its potential to cause substantial discomfort as a chronic disease, it is imperative for clinicians to possess a comprehensive understanding of its clinical manifestations and therapeutic approaches. Oral lichen planus is characterized by its chronic nature, often persisting for prolonged durations, with certain cases enduring for up to 25 years, highlighting a notable distinction from cutaneous lichen planus in terms of disease longevity (Mollaoglu, 2000).

2.3.2. Triggering Factors

Like other forms of LP, erosive LP may be drug-induced and often resolves with the removal of the offending agent can be associated with the broader context of understanding the multifactorial etiology of OLP (Al-Hashimi et al., 2007).

OLP is believed to have a multifactorial etiology, involving genetic, immunological, environmental factors, and potentially related to viral infections, drug reactions, stress,

and local traumas (Elenbaas et al., 2022).

The autoimmune aspect of OLP indicates an aberrant immune response targeting oral mucosal cells, while genetic factors may determine an individual predisposition to the disease. Moreover, the complex interplay of these factors could influence the severity and frequency of clinical manifestations of OLP (DeAngelis et al., 2019).

2.3.2.1. Viral infections factors

Several viruses are suspected to be correlated with the development of OLP, although their exact causal role has not been definitively established. It is important to note that the detection of viral genomes in tissues affected by OLP does not constitute direct evidence of a causal correlation with this medical condition. However, such evidence suggests a potential correlation between viral presence and the development of lichen planus, warranting further studies to fully understand this potential relationship (Carrozzo and Gandolfo, 2003).

The authors hypothesized the potential for an indirect association between LP and other hepatotropic viruses, mirroring the transmission patterns observed with hepatitis B virus, encompassing non-A, non-B hepatitis, cytomegalovirus, and Epstein-Barr virus. They reported the first case wherein LP emerged in a patient with chronic hepatitis, likely stemming from hepatitis C virus (HCV) infection (Lodi et al., 2005).

Recent epidemiological studies have shown a significant association between OLP and HCV infection, particularly prevalent in Southern Europe and Japan. However, due to the retrospective nature of many studies, establishing whether HCV exposure precedes or follows OLP onset remains challenging. Consequently, it's unclear if HCV-infected individuals are at a higher risk of developing OLP or vice versa. Further prospective studies are needed to conclusively address this issue. Recent experimental and epidemiological findings suggest that individuals are likely infected with HCV before developing OLP, possibly through an immunological mechanism driven by HCV (Lodi et al., 2005).

However, more research is needed to understand this pathway fully. Exploring whether the lymphocyte response targets neo-antigens expressed on infected cells by HCV or viral

proteins inducing specific T-cell responses is crucial. While interventional studies could provide insights into the causal link between HCV and OLP, limited attention has been given to the effects of IFN-α therapy, with or without ribavirin, on OLP. Therefore, trials assessing the impact of HCV eradication therapy on OLP are necessary. Conversely, the association between oral carcinoma and HCV seems weak, potentially influenced by liver cirrhosis. Other oral conditions like PV and BD are unlikely to be triggered by HCV (Carrozzo, 2008).

2.3.2.2. Genetic factors

Geographic differences in studies on OLP and hepatitis C virus (HCV) suggest that certain genetic backgrounds may predispose HCV-positive individuals to develop OLP. An Italian study found a higher prevalence of the human leukocyte antigen-DR6 allele in OLP patients with HCV compared to those without. Additionally, genetic variations in cytokines like interferon-γ and TNF-α appear to influence the clinical presentation of LP, with specific polymorphisms associated with oral and cutaneous lesions. However, further research across various regions is needed to confirm these findings and fully understand the genetic factors influencing OLP development (Farhi & Dupin, 2010).

2.3.2.3. Psychological factors

In recent years, there has been a growing recognition of the significant role played by psychological factors, particularly high stress and anxiety levels, in the development of lichen planus. Despite awareness of this association for many years, challenges in objectively quantifying these variables have hindered comprehensive understanding. However, recent advancements have shed light on the importance of anxiety and stress in lichen planus, leading to a surge in research efforts aimed at elucidating their impact. Stress and psychological factors have a recognized impact on the immune system, causing changes in immune function that may contribute to the development or worsening of immune-related conditions, including OLP. Prolonged stress can disrupt the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system, resulting in heightened production of stress hormones like cortisol and catecholamines. These hormones have the ability to regulate immune function by

inhibiting specific aspects of the immune response, which could increase vulnerability to inflammatory disorders such as OLP (Wang et al., 2015).

A recent study delved into the intricate relationship between psychological factors, particularly stress, and OLP. Prior research has consistently associated OLP with depressive and anxiety disorders, with a notable portion of OLP patients displaying symptoms indicative of depression and anxiety. Utilizing psychological assessments such as the Minnesota Multiphasic Personality Inventory (MMPI), researchers observed significantly higher scores for hypochondriasis, depression, and hysteria among OLP patients in comparison to control subjects. These findings suggest a predisposition towards psychosomatic reactions to stress among individuals with OLP. Furthermore, the study highlighted evidence of neuroimmune interactions involving the hypothalamic-pituitary-adrenal (HPA) axis, a key regulator of stress response and immune function. Dysregulation of the HPA axis appeared to contribute to the pathogenesis of OLP, as evidenced by elevated cortisol levels observed in EOLP patients. Despite the immunosuppressive effects of cortisol, chronic stress and depression were linked to heightened pro-inflammatory cytokine levels, indicating a potential hypofunctional state of glucocorticoid receptors on immune cells. Notably, antidepressant treatments were found to modulate immune responses, emphasizing the complex interplay between psychological factors and immune function in the context of OLP. The study underscores the critical importance of addressing psychological factors in the management of OLP. It suggests the potential benefits of integrating psychiatric services into treatment strategies aimed at mitigating stress-induced exacerbations of the disease. However, the need for further research, particularly in larger and more diverse populations, is emphasized to validate these findings and explore potential therapeutic interventions targeting stress and psychological well-being in OLP patients (Ivanovski et al., 2005).

2.3.2.4. Medications

Medications can trigger reactions that mimic LP, termed lichenoid hypersensitivity reactions (LHRs), making diagnosis challenging. Certain drugs, including NSAIDs, antihypertensives, and others like sulfonylureas and antifungals, are known to induce oral LHRs. Polymorphisms in cytochrome P450 enzymes may contribute to susceptibility to these reactions (Suryana, 2020).

Diagnosing drug-induced LHRs involves considering medication history alongside consistent histopathology. LP has also been associated with thyroid disease, raising questions about causality. Various medications, including statins, tyrosine kinase inhibitors, and biologic agents, have been implicated in causing LP-like reactions. In summary, medication-induced reactions resembling LP pose diagnostic hurdles, requiring careful evaluation of medication history, clinical presentation, and histopathological features for accurate diagnosis and management (Suryana, 2020).

2.3.2.5. Dental restorative materials

The most prevalent dental materials implicated in OLP associated lichenoid reactions include dental amalgam, composite resins, nickel, and gold, which induce a contact sensitivity reaction. A patch test serves as a diagnostic tool to assess these allergens, with dental amalgam and nickel exhibiting the highest reaction rates. Notably, lichenoid reactions often diminish following the removal of the offending material. Moreover, corrosion of dental amalgams or galvanic corrosion resulting from the interaction of dissimilar materials in alloys in continuous contact may also trigger lichenoid reactions. In cases where lesions persist despite the removal of the suspected material, a diagnosis of OLP is typically confirmed. Histopathological examination reveals an increased number of mast cells in OLP compared to lichenoid reactions, providing a potential histological marker to distinguish between the two conditions. This distinction underscores the importance of comprehensive clinical and histopathological evaluation in accurately diagnosing OLP and guiding appropriate management strategies (Elenbaas et al., 2021).

Further risk factors include other systemic diseases, gender and age differences, and geographic variations in the prevalence and clinical presentation of OLP. These risk factors represent ongoing areas of research aimed at better understanding the etiology and pathogenesis of OLP. Examples of systemic diseases include diabetes mellitus, autoimmune diseases (such as systemic lupus erythematosus and Sjögren's syndrome), and gastrointestinal diseases (such as celiac disease and Crohn's disease), which may influence susceptibility to oral lichen planus through immunological and inflammatory mechanisms (Elenbaas et al., 2021).

Tobacco use has also been associated with the onset and severity of OLP. The detrimental

effects of smoking on the immune system and inflammatory response may contribute to the development and persistence of the condition. Nutritional deficiencies, particularly deficiencies in vitamins such as vitamin A, vitamin B12, and iron, may affect the health of the oral mucosa and potentially increase the risk of developing OLP. These evidences provide important insights into understanding specific risk factors that may contribute to the pathogenesis of OLP in specific contexts (Elenbaas et al., 2021).

2.3.3. Pathogenesis

The pathogenesis of OLP is intricately linked to dysregulated immune regulation, primarily mediated by CD8+ T lymphocytes. These lymphocytes induce damage to epithelial keratinocytes through a cytotoxic response triggered by the modification of membrane antigens on the epithelial cells themselves. Specifically, OLP lesions form as a consequence of epithelial damage caused by the direct attack of cytotoxic lymphocytes. Immunity initiates with antigen uptake by Langerhans cells, which subsequently migrate to lymph nodes to present the antigen to T lymphocytes (afferent phase). Activated T lymphocytes then return to the epithelial layer, where they accumulate in the lamina propria and target basal cells (effector phase). These lymphocytes, particularly CD8+ cells, localize within the epithelial layer (exocytosis) and induce basal cell degeneration through the secretion of pro-inflammatory cytokines and apoptosis mediation. Furthermore, OLP is characterized by an increase in Langerhans cells and an upregulation of MHC-II expression, facilitating antigen presentation to CD4+ lymphocytes. These lymphocytes, activated by interleukin-12 (IL-12) and other cytokines, subsequently activate CD8+ lymphocytes through receptor interaction, interferon γ (IFN-γ), and IL-2. Activated CD8+ lymphocytes then induce basal cell apoptosis through various mechanisms, including the release of pro-apoptotic cytokines such as tumor necrosis factor α (TNF-α) and granzyme B-mediated cytotoxicity (Sugerman et al., 2002).

In patients with erosive lichen planus (ELP), biopsies have revealed over-expression of tumor necrosis factor-alpha (TNF-a) in the cytoplasm of the basal epithelialkeratinocytes. This over-expression suggests that TNF-a may contribute to the pathogenesis of erosive lichen planus by promoting inflammation and immune-mediateddamage to the oral mucosa (Zhou et al., 2009).

In summary, the pathogenesis of OLP involves a complex interplay among immune cells, cytokines, and keratinocytes, culminating in the progressive destruction of oral epithelial tissue (Zhou et al., 2002).

2.3.4. Histopathology

The histopathology of OLP serves as a cornerstone in its clinical diagnosis and management. Microscopic examination unveils characteristic features such as hyperparakeratosis, cytoid bodies (Civatte bodies), lymphocytic infiltration, and other distinctive signs, offering valuable insights for diagnosis and therapy. While OLP lesions exhibit differences from cutaneous ones, including atrophy, melanosis, and melanin incontinence may be noted in biopsy specimens, particularly in individuals with darker skin tones. Understanding these features is paramount for effective OLP management (Cheng et al., 2016).

Similarly, in the assessment of erosive lichen planus (ELP), diagnosis primarily relies on the patient's medical history and clinical examination, with biopsy often necessary for definitive confirmation and malignancy exclusion. However, ulceration in ELP lesions can obscure characteristic features, potentially leading to non-specific findings in biopsy specimens (Eisen, 2002b; Schlosser, 2010).

2.3.5. Differential diagnosis

The clinical presentation and histopathologic data may initially align with the criteria for OLP, and early patient response to conventional topical therapy could support this diagnosis. However, if adequate control of OLP is not maintained despite continued initial and subsequent alternative therapies, additional patient evaluation and testing are necessary. This may include procedures such as direct immunofluorescence (DIF) and indirect immunofluorescence (IIF) studies, rheumatologic assessment, and patch testing. Positive findings in this diagnostic process may reveal a lichenoid clinicopathologic mimic, such as chronic ulcerative stomatitis, lichen planus pemphigoides, lupus erythematosus, paraneoplastic pemphigus, or contact hypersensitivity. Identification of these mimics allows for the initiation of a more appropriate patient management strategy (Cheng et al., 2016).

Distinguishing erosive lichen planus from other conditions such as aphthae, mucous membrane pemphigoid, pemphigus vulgaris, drug reactions, erythema multiforme, and

acute lesions of lupus erythematosus is crucial. Similarly, the pigmented form requires differentiation from various causes of mucosal pigmentation. Clinically diagnosing "desquamative gingivitis" can be challenging, especially when lesions are absent in other sites. Mucous membrane pemphigoid, pemphigus vulgaris, and OLP may all present with a similar clinical appearance of desquamative gingivitis. Therefore, conducting histopathological examinations and direct immunofluorescence is essential for accurate diagnosis (Nico et al., 2011).

It's important to recognize the clinical and histopathologic similarities between OLP and other conditions, emphasizing the need for caution and patient education regarding diagnostic challenges before treatment initiation. While histopathological examination can rule out oral cancer and epithelial dysplasia, ongoing clinical monitoring is crucial for disease control and management of treatment-related changes or underlying systemic conditions (Nico et al., 2011).

2.3.6. Treatment

Treatment of OLP is tailored to the specific location and severity of the lesions, with therapeutic objectives aimed at alleviating symptoms, promoting lesion healing, and preventing disease progression. Reticular oral lichen planus typically presents as an asymptomatic condition and often does not necessitate therapeutic intervention. In the case of EOLP, therapeutic management follows similar principles but may require more aggressive intervention due to the increased severity and pain, which can impede normal functions like eating and drinking (Le Cleach & Chosidow, 2012).

High-potency topical corticosteroids are commonly recommended as the first line of treatment for EOLP. However, their efficacy in reducing ulceration or pain has not been universally successful. Trials of long-term systemic corticosteroids, immunosuppressants, or retinoids are also common but are associated with numerous side effects and rarely induce permanent remission (Ho & Hantash, 2012).

2.3.6.1. Non-surgical treatment

Recent research underscores the importance of good oral hygiene and professional

periodontal care in managing gingival lesions, as tartar and plaque buildup can exacerbate inflammation and worsen conditions such as OLP. Replacing metal restorations has been shown to improve symptoms in patients with lesions near these restorations, indicating a potential hypersensitivity response to materials like mercury (Scribante et al., 2023).

2.3.6.2. Pharmacological therapy and therapeutic options

2.3.6.2.1. Topical corticosteroids

OLP is a chronic inflammatory condition marked by varying degrees of discomfort, especially in its atrophic and erosive forms. The treatment landscape for OLP includes various pharmacological interventions, though their efficacy can be inconsistent. Typically, treatment relies on empirical methods due to a lack of robust control groups and methodological rigor in clinical studies.

Topical corticosteroids are the primary treatment for OLP, showing consistent effectiveness in clinical practice. However, managing OLP remains challenging due to the chronic nature of the disease, requiring prolonged treatment regimens. Additional complexities include patient-specific medical conditions (such as hepatic disorders, diabetes, and hypertension), psychological factors, adherence to treatment, and the economic feasibility of long-term therapy (Andabak-Rogulj et al., 2023).

2.3.6.2.2. Systemic corticoids

Systemic corticotherapy, including agents such as prednisone, prednisolone, methylprednisolone, betamethasone, and dexamethasone, is the primary treatment strategy for managing erosive lichen planus (ELP). This approach is commonly used for severe cases, those with extensive lesion involvement, or during acute exacerbations. Additionally, systemic corticosteroids are considered when topical treatments are insufficient. In clinical practice, a combination of oral and topical corticosteroids is often employed to provide comprehensive management of ELP lesions (Popa et al., 2024).

However, current evidence suggests that the use of corticosteroids provides only limited and short-term benefits in reducing pain, with minimal evidence supporting improvements in functioning. These benefits typically last only a few weeks, lacking long-term effectiveness. Moreover, corticosteroids are associated with multiple potential adverse

effects, including toxic impacts on articular cartilage and various systemic side effects, such as reduced immune function (Gharibo, Varlotta, & Grewal, 2021).

2.3.6.2.3. Immunosuppressants

Immunosuppressive drugs, which reduce the body's immune response by inhibiting T lymphocyte proliferation and function, are utilized in treating OLP. Common medications include cyclosporine, azathioprine, tacrolimus, and pimecrolimus. Despite their proven effectiveness in numerous studies, these drugs can have notable side effects. Patients may experience a bad taste and burning sensations upon initial application, and there are risks of nephrotoxicity and hypertension. Additionally, the high cost of these medications can be a significant concern (Andabak-Rogulj et al., 2023).

2.3.6.2.4. Retinoids

Retinoids, a class of polyisoprenoid lipids derived from vitamin A and its analogs, have emerged as a potential therapeutic avenue in the management of OLP (Petruzzi et al., 2013).

Commonly used topical retinoids for the treatment of OLP include tretinoin, isotretinoin, and fenretinide in 0.1% gel form. These retinoids are effective in reducing reticular and plaque lesions, but there is a risk of recurrence after discontinuation of treatment. Systemic retinoids such as etretinate, isotretinoin, and tretinoin are limited by side effects like cheilitis, liver damage, and teratogenicity. However, temaroten has shown effectiveness in treating OLP with fewer side effects (Andabak-Rogulj et al., 2023).

2.3.6.2.5. Antifungals

In around 37% of LP lesions, the presence of Candida albicans, a type of fungus, is observed. Symptoms of oral LP can worsen due to Candida overgrowth or infection. Treating erosive lesions with antifungal medication may sometimes transform them into the reticular form. The use of antifungal treatment in specific cases of oral LP might reduce the risk of *Candida albicans* producing carcinogenic N-nitrosobenzylmethylamine (Mehdipour et al., 2010).

2.3.6.2.6. Others drugs

Dapsone, though modestly effective for EOLP, isn't the preferred choice due to side effects like hemolysis and headache. PUVA Therapy, successful in skin LP, also benefits severe OLP cases. However, it may induce nausea, dizziness, ocular symptoms, and carry oncogenic risks. Interferon use in erosive OLP requires caution due to potential exacerbation during therapy (Andabak-Rogulj et al., 2023).

Levamisole's immunomodulatory role can control severe erosive OLP, albeit with potential lichenoid lesions. Aloe Vera, particularly in gel form, proves effective in improving OLP signs and symptoms. Monoclonal Antibodies like efalizumab show potential for erosive OLP but can cause severe side effects (Andabak-Rogulj et al., 2023).

2.3.6.3. Surgical therapies

Surgical intervention is considered an effective treatment option for OLP, particularly in cases where patients experience significant clinical symptoms, recurrent lesions, or fail to respond adequately to medication (Fu et al., 2021).

Soft tissue grafting procedures, including autologous grafts harvested from the palate, have also been employed in managing localized lesions of erosive OLP, showing some clinicals success (Soltani & Loomer, 2018).

2.3.7. The malignant transformation of oral lichen planus

Research on the potential transformation of OLP into malignancy dates back to the early 20th century. Since the initial report by Hallopeau in 1910, numerous studies have sought to investigate this phenomenon. A summary of the most noteworthy studies involving OLP patients, spanning from 1924 to 2007, reveals varying rates of malignant transformation, ranging from 0% to 12.5% (Gonzalez-Moles et al., 2008).

The absence of universally accepted diagnostic criteria poses a significant challenge in the study of OLP. Consequently, findings from certain studies may be skewed due to the inclusion of OLP cases exhibiting histological features suggestive of epithelial dysplasia with a lichenoid appearance, known as lichenoid dysplasias (LD) (Gandolfo et al., 2004).

Lichenoid dysplasia (LD) is a distinct diagnostic entity characterized by the absence of basal cell liquefaction, often accompanied by other histologic criteria of LP. However, LD is differentiated from LP by the presence of dysplastic features within the epithelium, including increased nuclear size, nuclear pleomorphism, hyperchromasia, disturbed maturation, lack of cellular cohesion, abnormal mitoses, and irregular rete peg shapes. These subtle features distinguish LD from LP and require separate consideration for diagnosis (Krutchkoff & Eisenberg, 1985).

In an effort to obtain reliable and reproducible data, a set of strict diagnostic inclusion criteria was developed, based on the 1978 clinical and histopathologic definition of OLP by the World Health Organization (WHO). These criteria aimed to address the absence of universally accepted diagnostic standards in OLP research (cf. Table 2 e 3) (Van Der Meij et al., 2003).

Table 2

Clinical criteria and hystopathological criteria in OLP research

OLP	Clinical criteria	Hystopathological criteria
	Bilateral lesions and symmetrical appereance	Bandlike zone of cellular infiltration
	Erosive, atrophic, bullous, or plaque-type	Liquefaction degeneration
	Coexistence with reticular lesions elsewhere	Absence of epithelial dysplasia

Table 3

Criteria included in OLP research

OLL	Criteria included
	Clinically characteristic of OLP but histopathologically consistent only with OLP
	Histopathologically characteristic of OLP but clinically consistent only with OLP
	Clinically consistent with OLP and histopathologically consistent with OLP

2.3.8. OLP and malignant trasformation

OLP may serve as a predisposing factor for oral squamous cell carcinoma (OSCC), potentially enhancing the effects of carcinogens like tobacco and alcohol. Experimental evidence suggests OLP's inflammatory microenvironment could contribute to tumorigenesis. However, the exact role of environmental carcinogens versus intrinsic

factors in OLP-related malignant transformation remains unclear, warranting caution and advising patients to avoid known carcinogens (Mignogna et al., 2004).

2.3.9. LD and malignant trasformation

Lichenoid lesions, including oral LP and graft versus host disease (GVHD), exhibit similarities and are associated with an increased risk of malignant transformation, particularly squamous cell carcinoma. Studies on GVHD patients, especially those undergoing bone marrow transplantation, suggest a heightened susceptibility to oral cancer, emphasizing the importance of vigilance and monitoring in such cases. Additionally, other lichenoid lesions like discoid lupus erythematosus and amalgam-associated reactions may also pose a risk for malignant transformation (Lodi et al., 2005).

The findings suggest a potential premalignant nature for OLLs, yet this heightened risk wasn't observed in OLP patients. However, definitive conclusions regarding the premalignant status of OLP and OLL require further extensive and prolonged follow-up studies involving a larger patient cohort. Such investigations are essential for elucidating the potential transformation risks of OLP and LD (Van Der Meij et al., 2003)

3. CLINICAL CASE

3.1. Clinical History

The patient is a 68-year-old woman. Her first consultation was on November 8, 2021,at the private dental clinic of Doctor Otília Lopes. She is retired and lives in Porto.

The patient suffers from hypercholesterolemia and Ménière's Syndrome. Currently,she is on the following medications:

- Crestor ® 10 mg (rosuvastatin), 1 tablet daily
- Betaserc ® (betahistine dihydrochloride), 1 tablet daily
- Molinar ® 22,400 IU (colecalciferol), 1 tablet monthly

The patient has no history of hospitalizations or procedures requiring general anesthesia. She has no known allergies to medications or materials, and there is no family history of cancer. These factors are important as they suggest a lower risk for certain genetic or familial conditions and potential complications during medical procedures.

The patient leads a lifestyle free from smoking and alcohol consumption, which positively impacts her overall health and may contribute to better management of her conditions. Her diet is varied and balanced which provides a broad spectrum of essential nutrients necessary for maintaining good health. However, her hydration habits could be improved, as she currently drinks water only when thirsty. Proper hydration is crucial formaintaining optimal body function and potentially alleviating some symptoms of her conditions.

The patient has minimal significant sun exposure and does not regularly use sunscreen. While limited sun exposure reduces the risk of skin cancer, it also necessitates careful monitoring of vitamin D levels, which is managed through her monthly colecalciferol supplementation.

Understanding these factors is essential for developing a comprehensive management strategy for the patient. The absence of significant medical history and family cancer history reduces the risk of certain complications, while her healthy lifestyle habits contribute positively to her overall health and the management of OLP.

The potential for malignant transformation of oral lichen planus has been a topic of ongoing and contentious debate in the literature. The first documented case of carcinoma

arising from lichen planus in the oral mucous membrane was reported by Hallopeau in 1910 (Van Der Meij et al., 2003).

This highlights the critical need for careful monitoring and management of OLP to prevent serious complications.

During her first consultation at the private clinic, the patient reported mouth pain and a burning sensation that began approximately three weeks prior. The symptoms worsened with the consumption of acidic or very hot foods. She also experienced a sensation of dry mouth, particularly upon waking up. During a previous dental visit, a white reticular surface was observed in her oral mucosa, raising suspicion of possible oral lichen planus.

3.2. Clinical examination

3.2.1. Extraoral Clynical Examination

Upon extraoral examination, the patient was in good general condition, with normal skin coloration and hydration. There were no cutaneous alterations or palpable lymph nodes. She showed no signs or symptoms of temporomandibular joint dysfunction.

3.2.2. Intraoral Clynical Examination

During the intraoral examination, the patient had red, mildly atrophic oral mucosa, particularly in the buccal mucosa, with no ulcerative lesions or visible vesicles. Bilateral white striae were noted on the buccal mucosa (cf. Figure 1, 2). She uses an occlusal splint for bruxism and has had dental rehabilitation with implants and ceramic crowns (cf. Figure 3).

Figure 1

Left lateral/frontal intraoral photograph – buccal mucosa

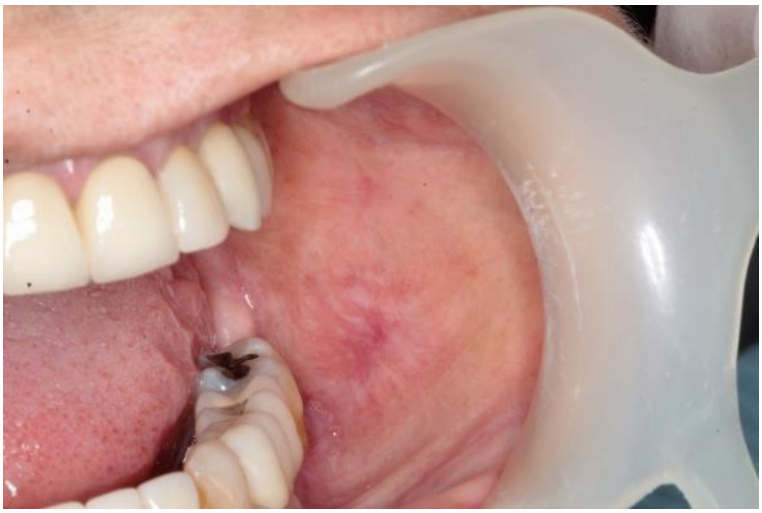


Figure 2

Right lateral/frontal intraoral photograph – buccal mucosa

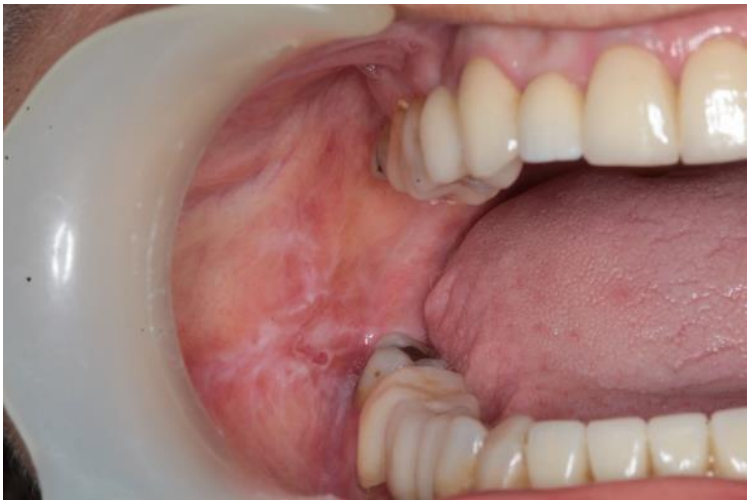
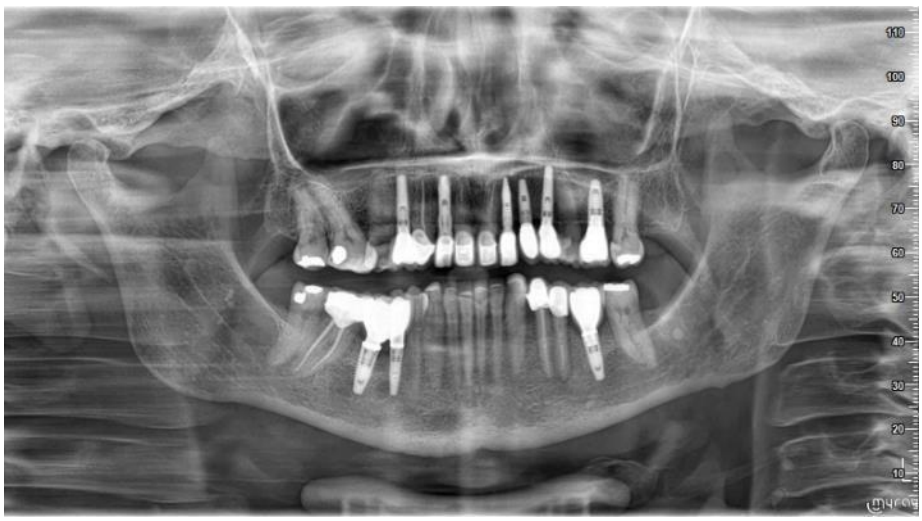


Figure 3

Orthopantomography



3.2.3. Diagnosis and Evolution of the Lesion

Based on the data gathered during the clinical observation conducted at the first consultation on November 8, 2021, the provisional diagnosis of the lesion was identified as probable OLP. This was hypothesized due to the presence of a white reticular appearance on the oral mucosa, especially on the buccal mucosa, without ulcerative lesions or apparent blisters, and considering the overall clinical picture of the patient (cf. Figure 1, 2, 4, 5).

Figure 4

Right lateral/frontal intraoral photograph - tongue

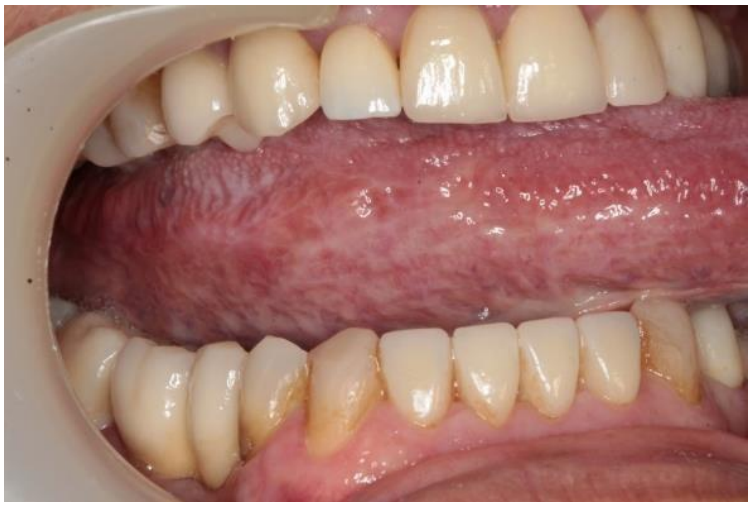
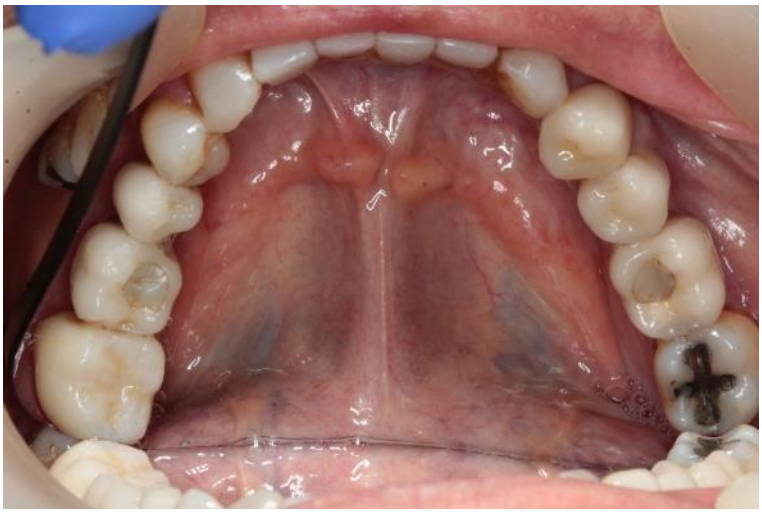


Figure 5

Inferior occlusal photograph



Before proceeding with the biopsy, the initial differential diagnoses considered were:

Oral lichen planus: This was compatible with the clinical manifestations observed and the reported symptoms.

Burning mouth syndrome: Given the absence of significant lesions and the sensation of burning and pain not correlating with visible lesions.

Xerostomia (dry mouth): Possibly exacerbated by medication use and inadequate hydration.

Nutritional deficiency: Potential deficiency of B-complex vitamins, considering the patient's diet, despite it being described as varied.

The patient was then advised to avoid acidic or spicy foods, as they may exacerbate the symptoms of oral lichen planus, and to maintain proper oral hygiene. Additionally, regular follow-up was recommended to monitor the evolution of the lesion and assess the need for further therapeutic interventions. It's worth noting that existing amalgam restorations in some molars were removed during the treatment process (cf. Figure 5).

Recent research has highlighted the potential for mercury from dental amalgam fillings to trigger OLP. These mercury-induced lichenoid reactions exhibit clinical, histopathological, and immunohistochemical features similar to those of OLP, complicating differential diagnosis. Notably, patients with oral lichenoid lesions often show improvement after the removal of amalgam fillings, suggesting a hypersensitivity

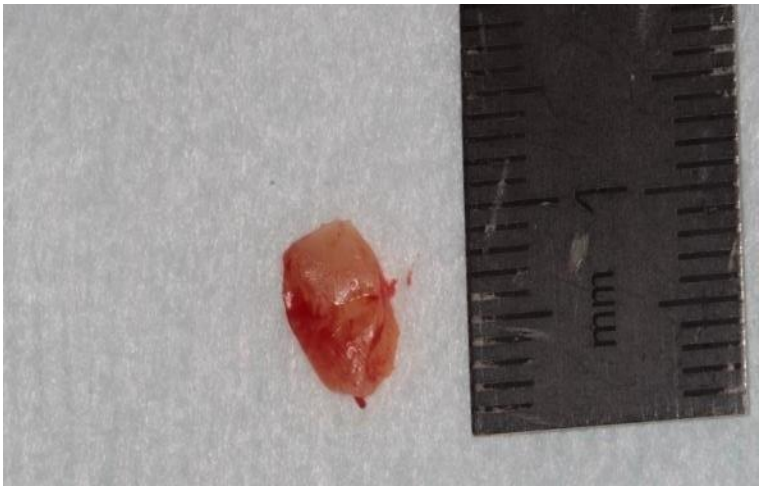
response to mercury as a potential trigger for these lesions (Albert et al., 2004; Guallar et al., 2002).

Clinical context and biopsy are crucial for accurate diagnosis, as histopathologic features vary based on lesion location, type, and prior treatments (Rotaru et al., 2020).

Similarly, diagnosing EOLP relies heavily on clinical evaluation, encompassing the observation of lesion characteristics, associated symptoms, and their progression over time. While microscopic examination can offer supplementary diagnostic insights, its primary role centers on detecting any indications of potential malignant transformation in suspicious lesions. It's imperative during microscopic analysis to procure samples from the periphery of EOLP lesions to ensure optimal diagnostic accuracy (Popa et al., 2024).

Figure 6

Biopsy photograph



In summary, the diagnosis of OLP poses formidable challenges due to its resemblance to other pathological conditions in both clinical manifestation and histopathological characteristics:

Numerous other pathological conditions bear resemblance to OLP in both clinical manifestation and histopathological characteristics, thereby confounding accurate diagnosis and necessitating meticulous consideration of differential diagnoses.

The histopathological profile of OLP exhibits variability, existing along a spectrum influenced by multifaceted factors such as disease progression, recent therapeutic interventions, clinical subtype delineations (reticular versus erosive) and anatomical localization within the oral cavity.

Moreover, microscopic examination of tissue specimens, while essential for diagnosis, unveils histological features that, though commonly associated with OLP, lack specificity and can also manifest in disparate pathologies, thus complicating the diagnostic process and demanding judicious evaluation (Cheng et al., 2016).

The diagnosis of OLP was confirmed through a soft tissue biopsy performed on November 22, 2021. The biopsy revealed an elongated flap of mucosa measuring 0.9x0.5x0.2 cm, characterized by white plaques with reticular striations and areas of erosion (cf. Figure 6). Additionally, white striations were noted on the contralateral side. These features are consistent with OLP in reticular or erosive form, as clinically suspected, confirming the diagnosis of mucositis lesions with a lichenoid pattern (cf. Annex C).

From a histological perspective, the examination revealed a mucosa lined by stratified squamous epithelium with acanthosis, papillomatosis, and parakeratotic hyperkeratosis. Marked vacuolization of basal keratinocytes was also observed. In the corium, an inflammatory infiltrate predominantly composed of lymphocytes was noted, permeating focally into the lining epithelium. No dysplastic lesions or signs of malignancy were identified.

These histological findings confirm the inflammatory nature of oral lichen planus, characterized by a lymphocytic infiltrate in the lamina propria and mucosal epithelial alterations. The absence of dysplasia or malignancy suggests that the condition is benign but chronic and potentially symptomatic for the patient.

Patients with oral lesions that may malignize at any time should evidently be followed up over an extensive period, even for life, although there is a lack of information to support recommendations on the appropriate periodicity of follow-up sessions. Therefore, it's crucial to establish comprehensive and regular follow-up protocols tailored to individual patient needs (González-Moles et al., 2019).

In line with this, on November 29, 2021, the histopathological results confirming the diagnosis were delivered. As part of the follow-up plan, a follow-up appointment in six

months and a consultation with an oral medicine specialist were recommended.

On March 10, 2022 a consultation was conducted in the field of oral medicine. The findings revealed the presence of median rhomboid glossitis and angular cheilitis (cf. Figure 7, 8).

Figure 7

Frontal extraoral photograph

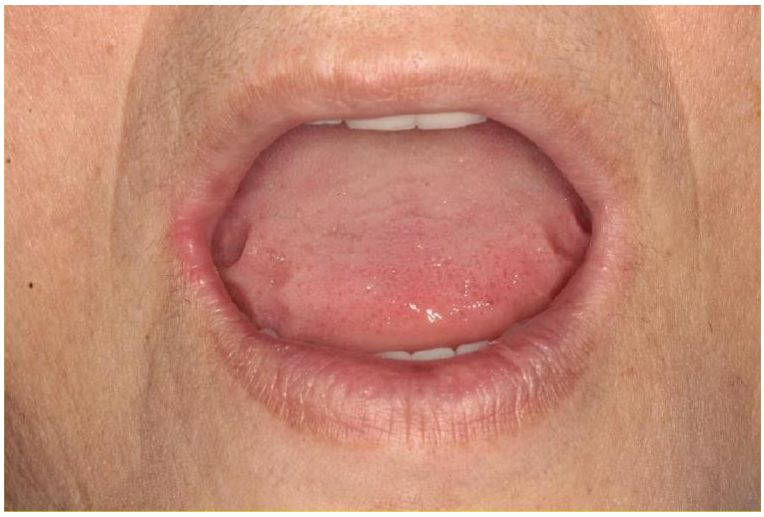
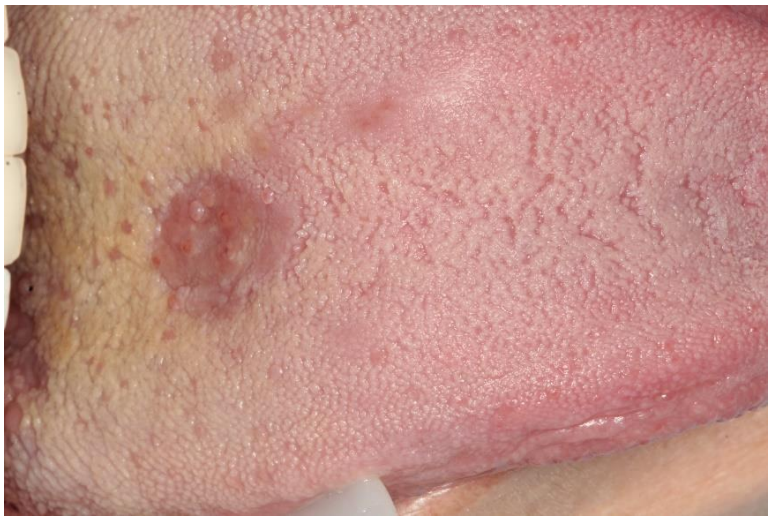


Figure 8

Frontal extraoral photograph



Median rhomboid glossitis (MRG) presents with papillary atrophy typically situated at the central aspect of the dorsum of the tongue. It exhibits a symmetrical distribution and is frequently devoid of pain, although a subset of patients may experience mild pruritus

and irritation. This condition exhibits a higher prevalence among males compared to females. Initially conceptualized as a developmental anomaly, MRG is currently widely acknowledged as a clinical expression of fungal etiology (John et al., 2023).

Angular cheilitis (AC) is a clinical condition distinguished by erythema, fissures, ulcerations, and crust formation at one or both corners of the lips and the surrounding perioral skin, resulting in discomfort that is both unpleasant and painful (Cabras et al., 2019).

Additionally, EOLP has stabilized into a reticular form, presenting without symptoms (cf. Figure 9, 10).

Figure 9

Left lateral/frontal intraoral photograph – buccal mucosa

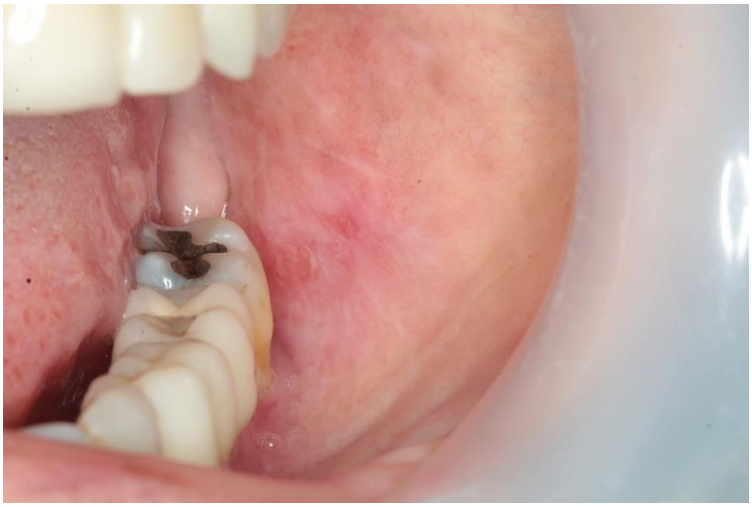
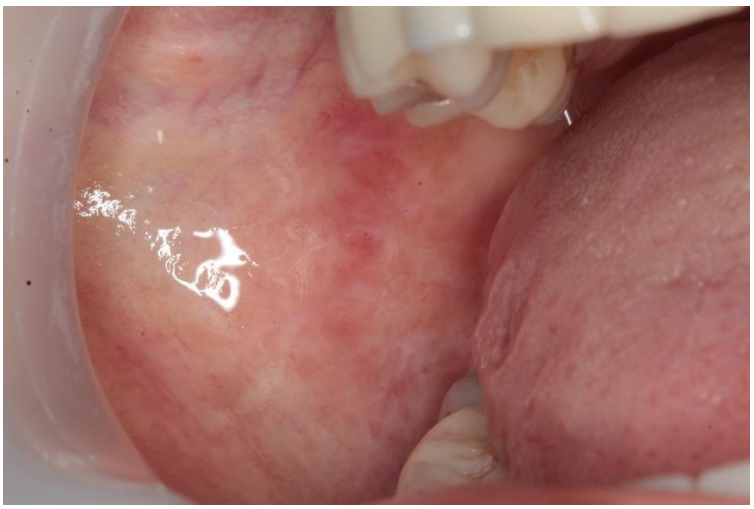


Figure 10

Right Lateral/frontal intraoral photograph



As part of the treatment plan, a prescription for Daktarin ® (miconazol) Oral Gel (2 packs) and Centrum 50+ was provided.

On May 16, 2022, an oral medicine consultation was conducted. The patient presented with angular cheilitis and median rhomboid glossitis, both of which responded to topical antifungal treatment with Daktarin ® oral gel. However, the patient experienced stomach pain as a side effect, prompting a switch to Mycostatin ® (nistatina), which provided greater comfort. Additionally, the patient underwent laser therapy on the left and right buccal mucosa by an oral medicine specialist, without anesthesia, resulting in improvement. No further sessions were scheduled. The use of biomodulation therapy was discussed, and the patient currently reports feeling slightly better. This therapeutic approach may be considered during symptomatic phases. Follow-up appointments are scheduled for every 6 months, including photographic documentation.

On November 14, 2022, an odonto-stomatological consultation was conducted at hospital. The patient was prescribed lepicortinolo 20 mg to be taken twice daily for 2 days, with a recommendation to avoid acidic foods. Additionally, the patient is using Cicálium ®. A follow-up appointment was scheduled for one month.

There is no consensus on second-line treatment for OLP. However, short-term systemic corticosteroids are often employed to quickly manage symptoms or treat persistent lesions that don't respond to topical steroids. Given that the erosive form of OLP causes significant pain and impacts patients' quality of life, the primary goal is to utilize the most effective therapeutic options available to alleviate symptoms and improve daily functioning (Andabak-Rogulj et al., 2023).

On December 12, 2022, an odonto-stomatological consultation revealed the presence of white plaque-like lesions in a rosette pattern on the gums and the vestibular aspect of the left cheek (cf. Figure 11, 12).

Figure 11

Front intraoral photograph – gum

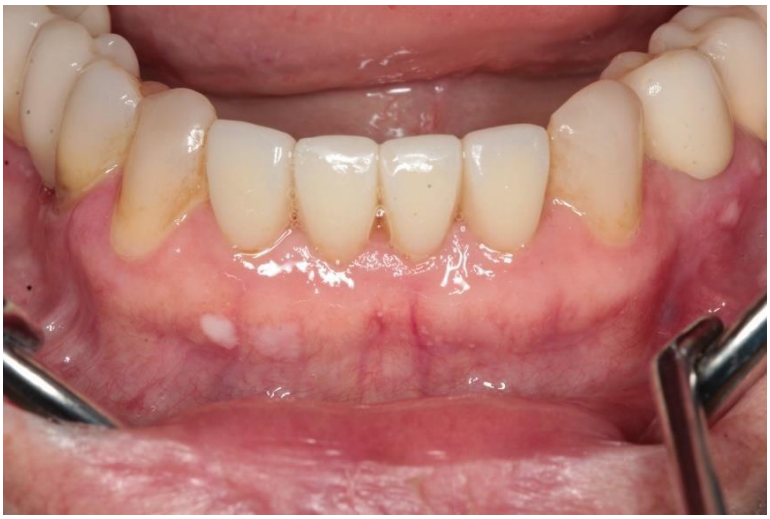
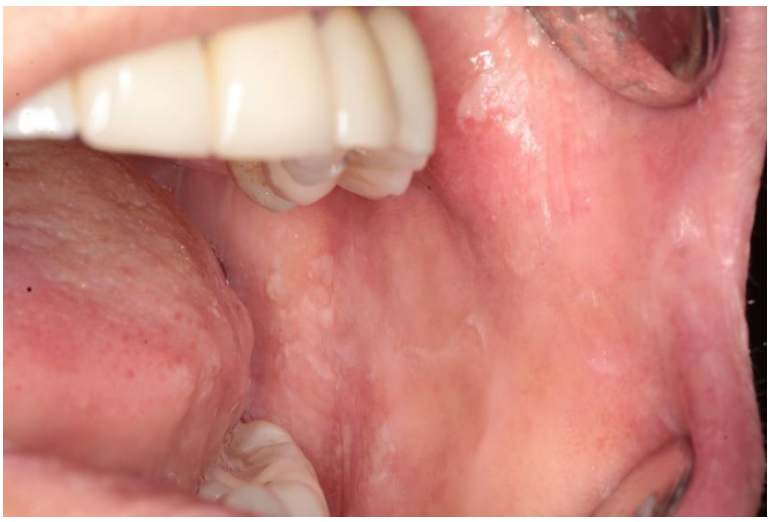


Figure 12

Left lateral/frontal intraoral photograph – buccal mucosa



These lesions appeared one week before and the patient initiated treatment with a preparation purchased from pharmacy X as prescribed by the stomatologist. Photographs were taken to document the lesions. Upon scraping, the lesions detach, leaving behind anerythematous and very dry surface, indicative of pseudomembranous candidiasis superinfection. Cotosol on tooth 25 was applied.

Oral lichen planus, especially in its erosive forms characterized by mucosal breakdown, promotes the colonization of Candida. The presence of Candida superinfection can exacerbate symptoms of OLP, particularly in its erosive

manifestations. Metabolic byproducts produced by Candida, such as nitrosamine or acetaldehyde, are known potential carcinogens. OLP lesions exposed to recognized risk factors for oral cancer, including smoking, alcohol consumption, or superinfection by Candida species, require close monitoring due to their heightened risk of malignant transformation (Rodriguez-Archilla & Fernandez-Torralbo, 2022).

The patient has a scheduled appointment with their dentist. Follow-up is planned in 15 days.

On December 26, 2022, an odonto-stomatological consultation was conducted. The white plaques have disappeared, and the patient is asymptomatic (cf. Figure 13, 14, 15).

Figure 13

Right lateral/frontal intraoral photograph

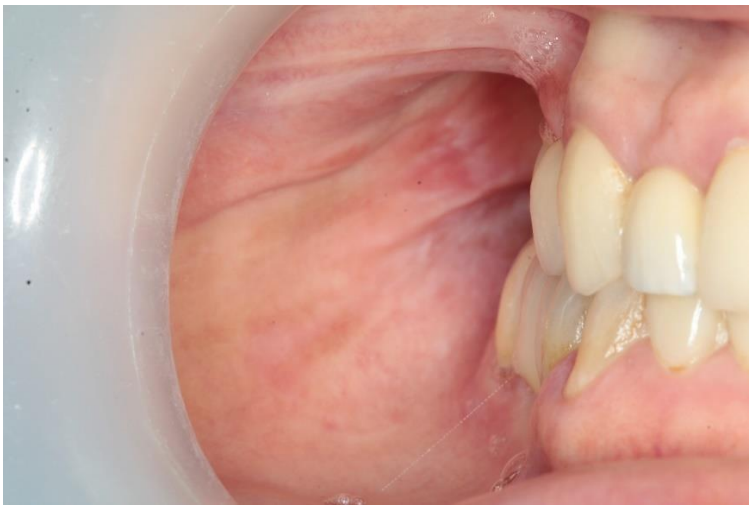


Figure 14

Left lateral/frontal intraoral photograph

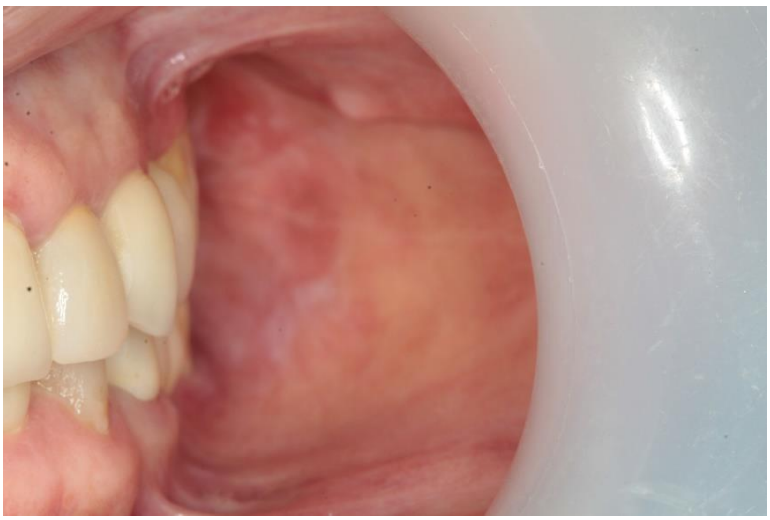
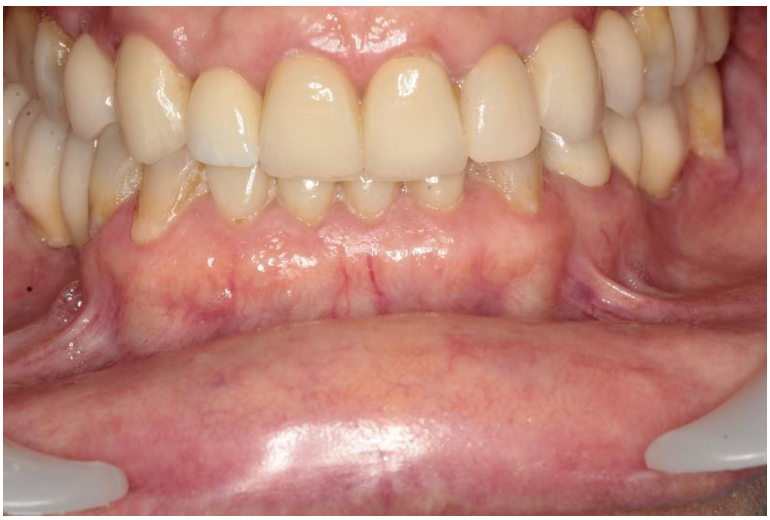


Figure 15

Frontal intraoral photograph-gum

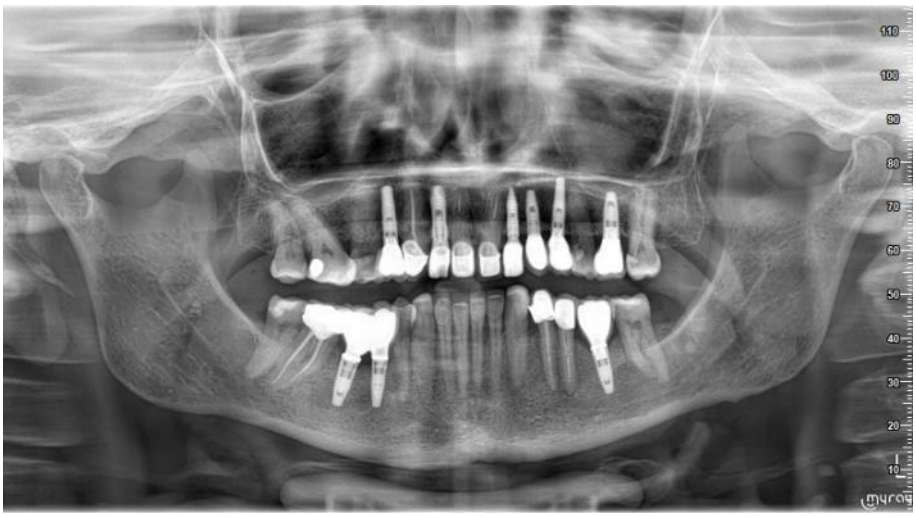


Photographs were taken. The patient brushes their teeth with Arthrodont toothpaste and applies Cicalium ® (clobetasol propinionato) in case of erosion. A follow-up appointment is scheduled for two months.

On January 26, 2023, an orthopantomography was performed with the following parameters: Kv 73, mA 10, S 13.92 (cf. Figure 16). This imaging procedure aimed to obtain acomprehensive view of the patient's dental and maxillofacial structures, assisting in diagnosing and assessing any dental or oral health issues.

Figure 16

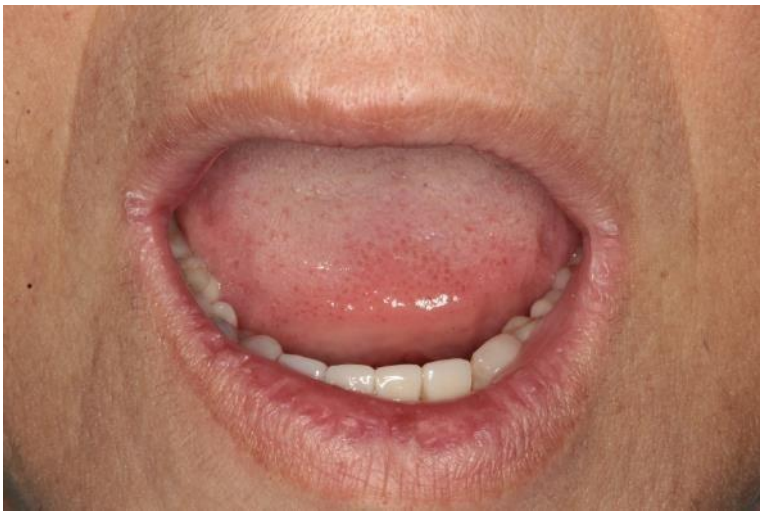
Orthopantomography



Simultaneously, on January 26, 2023, an odonto-stomatological consultation took place. The patient had undergone a biopsy of the left buccal mucosa at Hospital 8 days prior to the consultation. Following the biopsy, the patient has been experiencing pain throughout the oral cavity and is currently self-medicating with Ben-u-ron 1g and ibuprofen, in addition to using Cicalium ® spray. Subsequent examination, including photographic documentation, revealed the presence of angular cheilitis (cf. Figure 17). In light of the patient's symptoms and diagnoses, it was recommended to discontinue ibuprofen, and instead initiate treatment with paracetamol 1gevery 6 hours as needed, and Daktarin ® oral gel for the commissures and oral mucosa. The patient is advised to continue using Cicalium ®spray as previously directed.

Figure 17

Frontal extraoral photograph - lips



On February 13, 2023, the patient was prescribed sucralfate to gargle and then discard, as well as Fluticasone spray to be applied in the oral cavity. Currently, the patient is only using Cicalium ® spray. Additionally, she has decided on her own initiative to try ginger and propolis lozenges. Follow-up appointment scheduled in 6 months.

On July 10, 2023, an oral medicine consultation was conducted, and the patient mentioned that she has been a widow since March 2023, which has affected her overall well-being. The patient is regularly using Cicalium ® spray and uses Flutaide ® (fluticasone propionate) during acute phases. She was diagnosed with candidiasis. The treatment plan includes using Mycostatin ®/Daktarin ® gel for 8 to 10 days and returning for a follow-up consultation. Additionally, she requested an adjustment to her occlusal splint, which was previously made by another colleague of the stomatologist.

On August 7, 2023, an oral medicine consultation was conducted. The patient was asymptomatic at the time. The occlusal splint was checked for fit and occlusal adjustments were made. The next appointment is scheduled for January 2024 for a follow-up on OLP. On November 13, 2023, an oral medicine consultation was conducted. The patient was asymptomatic at the time. Occlusal adjustment of the mandibular splint was performed. The patient accepted and signed an informed consent to participate in a clinical case study.

During the acute phase of OLP, when there is noticeable inflammation and/or epithelial disruption along with pain and discomfort, treatment is

essential. The primary medications utilized are topical corticosteroids. For more severe cases, systemic corticosteroids and perilesional corticosteroid injections may also be employed (Andabak-Rogulj et al., 2023).

Potent topical corticosteroids are widely accepted as the first-line treatment for OLP; however, there is no strong scientific evidence to substantiate this claim. The effectiveness of previous therapies, including these corticosteroids, lacks convincing evidence, despite their acceptance as the primary treatment option for OLP (Andabak-Rogulj et al., 2023).

According to the literature, while local side effects such as candidiasis and atrophy are common, systemic side effects have also been reported. These include hirsutism and moon face typically observed between the fourth and sixth week of therapy. Other, less frequent side effects include dry mouth, bad taste and smell, swollen lips, and nausea. There have also been reports of two cases of hairy leukoplakia in immunocompetent patients, hypersensitivity reactions of the oral mucosa, hemorrhagic effusions on the skin and mucous membranes with the administration of 0.05% clobetasol propionate solution, and iatrogenic Cushing's syndrome in patients with OLP and pemphigoid undergoing 0.05% clobetasol propionate therapy (Andabak-Rogulj et al., 2023).

4. DISCUSSION

4.1. Summary of the Clinical Case

The management and diagnosis of EOLP present a significant challenge in clinical practice due to the disease's complexity and the variability of its clinical manifestations.

Determining a diagnosis of OLP is challenging due to the overlap in clinical and histopathological features with other conditions. Some cellular abnormalitiesthat suggest malignancy can appear in both OLP and epithelial dysplasia, complicating the diagnostic process. This complexity underscores the importance of long-term follow-up for patients, not solely because of OLP's malignant potential, but to account for potential diagnostic inaccuracies that may occur initially (De Sousa et al., 2009).

This clinical case provides an opportunity to explore the challenges and therapeutic strategies in managing OLP. The patient presented with symptoms of oral pain and burning, exacerbated by the consumption of acidic or very hot foods, along with a sensation of dry mouth. Clinical examination revealed erythematous oral mucosa with reticular white striae on the buccal mucosa, without obvious ulcerative lesions, leading to a suspected diagnosis of oral lichen planus. The diagnosis was confirmed through a biopsy, which revealed histopathological features consistent with reticular and erosive forms of OLP.

The initial treatment included the use of topical corticosteroids to control inflammation and antifungal gels to address the associated candidiasis. Throughout the treatment process, the patient developed additional complications such as angular cheilitis and median rhomboid glossitis, both effectively managed with antifungal therapy.

This case underscores the importance of a multidisciplinary approach in managing OLP, involving specialists in dentistry, stomatology, dermatology, and oral medicine to optimize therapeutic outcomes. It also highlights the necessity of regular, personalized follow-ups to monitor lesion progression and prevent recurrences or complications. The following discussion will explore the diagnostic and therapeutic strategies used, the complications encountered, and the clinical implications of this case. It aims to provide insights for improving the management of patients with erosive oral lichen planus.

4.2. Efficacy and Adaptation of the Treatment Plan for OLP

The treatment plan for the 68-year-old patient diagnosed with OLP demonstrates a comprehensive and adaptive approach to managing a chronic condition characterized by periodic flare-ups and associated complications. The initial management strategy focused on symptom alleviation and lesion stabilization through a combination of pharmacological interventions and lifestyle modifications.

4.2.1. Initial Treatment and Management

Upon the provisional diagnosis of OLP, the patient was advised to avoid acidic and spicy foods, which could exacerbate symptoms. This dietary adjustment aimed to reduce irritation of the oral mucosa and alleviate the burning sensation reported by the patient. Pharmacological interventions included the prescription of Daktarin ® Oral Gel to address secondary Candida infections and Cicálium ® Spray to manage mucosal inflammation. Additionally, Lepicortinolo 20mg (a corticosteroid) was prescribed during acute flare-ups to reduce inflammation and control symptoms.

The initial plan also involved the removal of existing amalgam restorations, hypothesized as potential irritants contributing to the OLP manifestations. Regular follow-up appointments were established to monitor the evolution of lesions and assess the efficacy of the treatment regimen.

4.2.2. Adaptations Based on Evolution

As the patient progressed through treatment, the plan was continuously adapted to address emerging symptoms and secondary conditions. For instance, when the patient developed stomach discomfort from Daktarin ® Oral Gel, the medication was switched to Mycostatin ®,which provided greater comfort and efficacy in managing Candida superinfection.

When OLP is refractory to conventional treatment and long-lasting lesions have been formed, surgery can be considered as a treatment option. New modalities of surgery, particularly laser therapy, have emerged as promising approaches in managing oral mucosal lesions. The early adoption of laser therapy, primarily using CO2 lasers, yielded favorable clinical outcomes, providing immediate symptom relief and demonstrating long-term efficacy (Derikvand et al., 2017).

Supportive therapies, such as laser therapy, were introduced to manage lesions more effectively. The patient underwent laser treatment on the buccal mucosa, resulting in significant improvement without the need for anesthesia. This approach minimized discomfort and enhanced lesion healing.

Further adjustments included the prescription of Fluticasone Propionate Spray, a potent topical corticosteroid, to manage inflammation locally with minimal systemic absorption. This medication significantly reduced painful symptoms, lesion size, and severity, improving the patient's quality of life.

4.2.3. Addressing Secondary Conditions

Throughout the treatment process, the patient developed additional conditions such as median rhomboid glossitis and angular cheilitis. These conditions were promptly addressed with targeted antifungal treatments like Daktarin ® Oral Gel and Mycostatin ®, alongside adjustments to topical agents. The timely identification and management of these conditions were crucial in preventing complications and ensuring the patient's comfort.

4.2.4. Holistic Approach and Long-term Management

The treatment plan emphasized a holistic approach to the patient's overall well-being. This included adjustments to the occlusal splint to address bruxism, reducing oral discomfort and preventing further mucosal damage. Nutritional supplements, such as Centrum 50+, were prescribed to support the patient's general health and immune function.

Regular follow-up appointments, scheduled every six months, ensured continuous monitoring and timely intervention. Photographic documentation during these appointments provided a visual record of lesion progression and treatment response, aiding in the accurate assessment and adjustment of the treatment plan.

The dynamic and responsive nature of the treatment plan for this patient with OLP highlights the importance of personalized medical care. By continuously adapting the approach based on the patient's evolving condition and integrating supportive therapies, the treatment plan effectively managed symptoms, minimized complications, and

improved the patient's quality of life. This case underscores the necessity of a comprehensive, patient-centered approach in managing chronic conditions like OLP, emphasizing regular follow-up, holistic care, and proactive adaptation of treatment strategies.

4.2.5. Complications and Onset Analysis

In this case, alongside the erosive symptoms characteristic of OLP, the patient also presented with median rhomboid glossitis and angular cheilitis, highlighting the multifaceted nature of oral mucosal pathology. These additional conditions contribute to the overall burden of oral disease and can exacerbate OLP symptoms, further complicating treatment outcomes. The onset of complications such as glossitis and cheilitis may coincide with exacerbations of OLP lesions, emphasizing the need for a comprehensive evaluation to discern the underlying etiology and inform targeted treatment strategies.

4.2.6. Treatment Analysis

The management of OLP complications requires a tailored treatment approach, integrating both topical and systemic therapies to address underlying inflammation and associated symptoms effectively.

Topical corticosteroids are a cornerstone in this treatment paradigm, frequently utilized to alleviate mucosal inflammation and promote lesion healing. In contemporary clinical practice, these steroid preparations are most often employed in various forms, including ointments, gels, creams, adhesive pastes, rinsing solutions, and sprays. The versatility of these formulations allows for targeted application, maximizing therapeutic efficacy while minimizing systemic exposure and potential side effects.

In the majority of cases, OLP lesions can be effectively controlled with high-potency topical steroid preparations. These high-potency formulations have been shown to be very effective in reducing pain and inflammation, which are hallmark symptoms of OLP. Moreover, they present a lower incidence of side effects compared to systemic corticosteroids, making them a preferred first-line treatment option. The effectiveness of these topical treatments has been well-documented in numerous clinical trials,

underscoring their central role in OLP management (Andabak-Rogulj et al., 2023).

Topical corticosteroids are widely employed not only for OLP but also for a range of vesiculo-erosive diseases of the oral mucosa. Their ability to reduce pain and inflammation is critical in managing these conditions, which can significantly impair a patient's quality of life. The broad spectrum of therapeutic options available to clinicians, including various trials and formulations of steroids, reflects the ongoing efforts to optimize treatment outcomes for patients with OLP (Thongprasom & Dhanuthai, 2008).

In the specific case presented, the use of topical corticosteroids, such as fluocinolone acetonide, alongside adjunctive therapies, proved to be highly effective. The patient was treated with Daktarin ® oral gel for Candida infection and Cicalium ® spray to alleviate inflammation and discomfort. This multifaceted approach successfully reduced inflammation and improved symptoms associated with OLP, as well as concomitant conditions such as glossitis and cheilitis. The integration of these therapies highlights the importance of addressing secondary complications that may exacerbate the primary condition, thereby improving overall treatment outcomes.

However, the management of OLP is not without its challenges. Ongoing treatment analysis is crucial to assess treatment response, monitor for adverse effects, and adjust therapy as needed. This continuous evaluation ensures that therapeutic outcomes are optimized and potential complications are promptly addressed. Continuous monitoring and personalized treatment adjustments are essential to ensure optimal outcomes and minimize potential risks, underscoring the importance of a tailored, patient-centered approach in the management of OLP.

4.2.7. Management of Topical and Systemic Therapies

Topical corticosteroids remain a cornerstone of OLP management, exerting potent anti-inflammatory effects and suppressing immune-mediated responses. However, the prolonged or high-dose use of corticosteroids may lead to adverse effects such as mucosal atrophy, highlighting the importance of judicious treatment monitoring and dose titration.

In cases of refractory or severe OLP, systemic therapies may be considered to achieve disease control and prevent complications (Thongprasom & Dhanuthai, 2008).

Systemic corticosteroids, such as lepicortinolo used in this case, along with

immunomodulatory agents and biologic agents, have demonstrated efficacy in select cases of recalcitrant OLP.

However, their use is often reserved for resistant cases due to potential adverse effects and long-term risks, necessitating careful consideration and monitoring by healthcare providers.

While there are some reports of systemic absorption and adrenal suppression from super-potent topical steroids in the treatment of chronic skin disorders, this issue has not been found in the long-term oral application of topical corticosteroids (Lodi et al., 2005).

Several studies have demonstrated successful treatment and management of OLP. A variety of treatment options are available, ranging from topical and systemic corticosteroids to immunomodulatory and biologic agents. These treatments have been shown to effectively manage symptoms and improve patient outcomes, with careful monitoring and adjustment to minimize potential side effects (Kaul et al., 2014).

The following table lists the most common types of treatments and their associated adverse effects (cf. Table 4) (Kaul et al., 2014).

Table 4

Most common types of treatments and their associated adverse effects

Type of Drug	Mechanism of Action	Adverse Etfect
Corticosteroids	Anti-inflammatory and immunosuppressive property	Blanching of mucosa, delayed wound healing,hypopigmentation Electrolyte imbalance, hypertension, hyperglycemia, osteoporosis, increased susceptibility to infection, hirsutism
Retenoids	Anti-keratinizing and immunomodulatory etfect	Dryness of skin and mucosa, rashes, itching,partial hair loss
Cyclosporine	Inhibits T cell activation, proliferation, inhibits lymphokine production and release of interleukin 2	Renal toxicity, neurotoxicity, hirsutism, gingival enlargement
evamisole	Immunomodulatory etfect and alters natural course of chronic recurrentinflammatory disease	Nausea, vomiting, headache and agranulocytosis
Azathioprine	Has anti-inflammatory property anddecreases antibody production	Leukopenia, thrombocytopenia and GI toxicity
Dapsone	Anti-inflammatory and immunomodulatory etfect	Hemolysis, headache
Mycophenolate mofetil	Selective inhibitor of purine cycle inlymphocyte	Reduces patient's immunity

4.2.8. Interactions and Complications in Oral Lichen Planus

While OLP presents significant challenges in diagnosis and management, its potential to lead to complications further complicates the clinical picture.

OLP is classified among oral diseases with a predisposition to malignancy, emphasizing the importance of thorough monitoring and timely intervention. Additionally, OLP may manifest with less severe complications, including oral candidiasis and submucosal fibrosis. Understanding the intricate relationship between OLP and its associated complications is crucial for clinicians to develop comprehensive management strategies and optimize patient outcomes (Parlatescu et al., 2021).

Caution is also warranted regarding the proliferation of Candida species during treatment with topical corticosteroids for OLP, which has been observed to increase proportionally with the mean duration of steroid therapy (Bombeccari et al., 2017).

Candida species, particularly Candida albicans, are often found in the oral cavity even in individuals without clinical symptoms of candidiasis. However, systemic and local

factors that reduce an individual's resistance can cause these fungi to transition from a commensal to a parasitic state. Systemic factors predisposing to Candida infection include malnutrition, endocrinological disorders, treatment with steroids, cytostatics, antibiotics, malignancies and immunopathies. Local factors include mechanical trauma, epithelial changes secondary to other diseases, low saliva secretion rates and low saliva pH. These factors are especially relevant in patients with OLP, as they can increase the risk of developing oral candidiasis during treatment (Lundström et al., 1984).

Furthermore, among the various types of OLP, the reticular pattern has a lower incidence of fungal infection compared to other types of OLP. This difference may be attributed to steroid agents, application type, and concurrent antifungal regimen use (Marable et al., 2016).

The prevalence of oral candidiasis in OLP patients ranges from 7.7% to 16.6% based on biopsy findings, and from 37% to 50% based on culture findings, despite the use of corticosteroids and antifungal drugs (Lundström et al., 1984). Candida species, particularly Candida albicans, adhere to the oral mucosa and trigger inflammation, exacerbating OLP symptoms. This is particularly evident in the erosive, atrophic, and bullous forms of OLP, which are more symptomatic and often associated with candidiasis. In contrast, the reticular form of OLP is typically asymptomatic and less commonly associated with Candida infection (Hatchuel et al., 1990).

The etiology of OLP may involve endogenous Candida infections and genetic mutations within the dynamic oral microenvironment. These findings are crucial for confirming the true etiology of OLP and developing more precise therapeutic strategies. Additionally, Candida species, commonly found as commensal fungi in the mucosal flora of healthy individuals, play a significant role in OLP pathogenesis (He et al., 2020).

Another important aspect regarding Candida involves its production of acetaldehyde, a carcinogenic substance, within the oral environment. This acetaldehyde plays a crucial role in the pathogenesis of potentially malignant oral disorders, such as leukoplakic and lichenoid lesions, thereby facilitating their progression toward malignancy. Furthermore, alcohol consumption and cigarette smoking can amplify Candida's metabolic activity in the oral cavity, resulting in heightened acetaldehyde production. These insights underscore the significant contribution of Candida and acetaldehyde to the onset and potential malignant transformation of severe oral disorders (Gainza-Cirauqui et al., 2012)

4.2.9. Risk of malignancy

Chronic oral diseases, such as EOLP, are of significant concern due to their multifaceted impact on individuals' health, encompassing complex clinical management, psychological repercussions, and socio-economic implications.

These conditions pose a dual threat, not only affecting oral health but also potentially predisposing individuals to the development of oral cancer. In 2000, Hanahan and Weinberg delineated a set of characteristics pivotal for recognizing neoplastic cells, providing insights into the intricate processes underlying cancer progression. These characteristics, termed oncogenic signatures, manifest progressively as cells transition from premalignant stages to the formation of fully developed tumors (González-Moles et al., 2022).

The identification of oral potentially malignant disorders (OPMDs) by the working group further underscores the gravity of the situation. OPMDs encompass any oral mucosal abnormality statistically associated with an elevated risk of oral cancer, including OLP. Given this heightened risk, continual monitoring is imperative to detect potential complications at their nascent stage. For instance, EOLP, though rarely progressing to malignancy, warrants meticulous surveillance to ensure early intervention if necessary (González-Moles et al., 2022).

Risk factors for malignant transformation of OLP reported in the literature include the location of the lesions (margins of the tongue), clinical features of the lesions (such as red color and heterogeneity), and unhealthy habits (smoking and alcohol consumption). However, the data on this topic are conflicting (Zotti et al., 2021).

In a study conducted by González-Moles the risk factors for malignant transformation included: tongue localization (RR = 1.82, 95% CI = 1.21–2.74, p = 0.004), presence of atrophic-erosive lesions (RR = 4.09, 95% CI = 2.40–6.98, p < 0.001), tobacco use (RR = 1.98, 95% CI = 1.28–3.05, p = 0.002), alcohol consumption (RR = 2.28, 95% CI = 1.14–4.56, p = 0.02), and hepatitis C virus infection (RR = 4.46, 95% CI = 0.98–20.22, p = 0.053) (González-Moles et al., 2019).

The mechanism by which OLP transforms into squamous cell carcinoma (SCC) is not entirely understood, but recent findings suggest that OLP creates a tumor-like microenvironment that contributes to its malignant transformation. Cellular signals and mediators of inflammation, such as interleukin 4 (IL-4) and IL-6, which are

implicated in chronic inflammation, play critical roles in increasing the sensitivity of oral keratinocytes to exogenous mutagens (Oujdad & Yahya, 2023).

The literature proposes several mechanisms to explain this malignant transformation. One prominent hypothesis suggests that the inflammatory infiltrate in OLP induces oxidative stress, resulting in the release of inflammatory cytokines. These cytokines, in turn, activate transcription factors within premalignant cells. This mechanism is similar to those proposed for other chronic inflammatory diseases associated with cancer, such as the increased risk of colorectal carcinoma in patients with chronic inflammatory bowel disease (Fitzpatrick et al., 2014).

Regular monitoring of patients diagnosed with dysplastic OLP is essential, ideally scheduled every two to three months. However, patients presenting with asymptomatic lesions, commonly observed in the reticular type, may undergo annual monitoring. During these follow-up appointments, any worsening of symptoms or alterations in the lesion's appearance should be meticulously assessed. If such changes are noted, more frequent follow-ups and supplementary biopsies should be considered (Canto et al., 2010).

This comprehensive approach to managing chronic oral diseases not only addresses immediate oral health concerns but also plays a crucial role in averting potential oncological ramifications. By remaining vigilant and proactive in monitoring and addressing these conditions, healthcare providers can effectively mitigate risks and improve patient outcomes.

4.3. Practical Implications of the Case Report and Future Perspectives

Erosive oral lichen planus presents a multifaceted challenge for clinicians, underscoring the importance of a comprehensive and attentive approach to patient care. Through the detailed examination of a specific clinical case, this study has illuminated various clinical, therapeutic, and research implications relevant to managing this complex condition. By delving into the intricacies of the case and considering the patient's journey, several crucial insights have surfaced, emphasizing the significance of continuity of care and ongoing patient follow-up.

One paramount aspect highlighted by this case is the critical role of continuous patient monitoring and follow-up. In chronic conditions like erosive oral lichen planus, the

disease course can be dynamic, and patient responses to treatment may vary over time. This often leads patients to seek help from multiple healthcare professionals, both in hospitals and private clinics, to manage the evolving nature of the disease. Therefore, maintaining regular follow-up appointments allows clinicians to closely trackdisease progression, evaluate treatment efficacy, and make timely adjustments to the management plan as needed. Additionally, ongoing patient monitoring provides an opportunity to address emerging concerns, manage potential side effects of treatment, andoffer ongoing support and guidance to patients navigating the challenges associated withtheir condition.

Furthermore, consistent patient follow-up fosters a strong patient-provider relationship built on trust, communication, and collaboration. By establishing rapport and open lines of communication with patients, clinicians can better understand their individual needs, preferences, and concerns, empowering them to actively participate in their care journey. This patient-centered approach not only enhances treatment adherence and patient satisfaction but also facilitates shared decision-making, where patients are partners in their own healthcare decisions.

Moreover, ongoing patient follow-up contributes to the accumulation of valuable longitudinal data, which can inform clinical practice and drive further research advancements. Longitudinal studies tracking patient outcomes over time provide insights into the natural history of the disease, treatment response patterns, and factors influencing disease progression. Such data are invaluable for refining treatment algorithms, identifying prognostic indicators, and optimizing long-term management strategies for erosive oral lichen planus.

5. CONCLUSION

In the clinical case presented, both the patient's clinical information and the clinical and histopathological characteristics led to the diagnosis of erosive oral lichen planus The patient, a 68-year-old female at the time of diagnosis, fits within the age range typically described in the literature. The diffuse and multifocal location of the lesion (buccal mucosa, tongue, alveolar ridge, gingiva, soft palate, and hard palate) is characteristic of this disease, which tends to affect multiple sites in the oral cavity.

In conclusion, the importance of consistent patient follow-up cannot be overstated in the management of erosive oral lichen planus. By maintaining regular contact with patients, clinicians can ensure continuity of care, monitor disease progression, and address evolving patient needs. Moreover, ongoing patient follow-up fosters a collaborative patient-provider relationship, promotes treatment adherence, and generates valuable longitudinal data to inform clinical practice and drive future research efforts. As such, prioritizing patient follow-up represents a cornerstone of effective management and treatment strategies for erosive oral lichen planus, ultimately leading to improved patient outcomes and quality of life.

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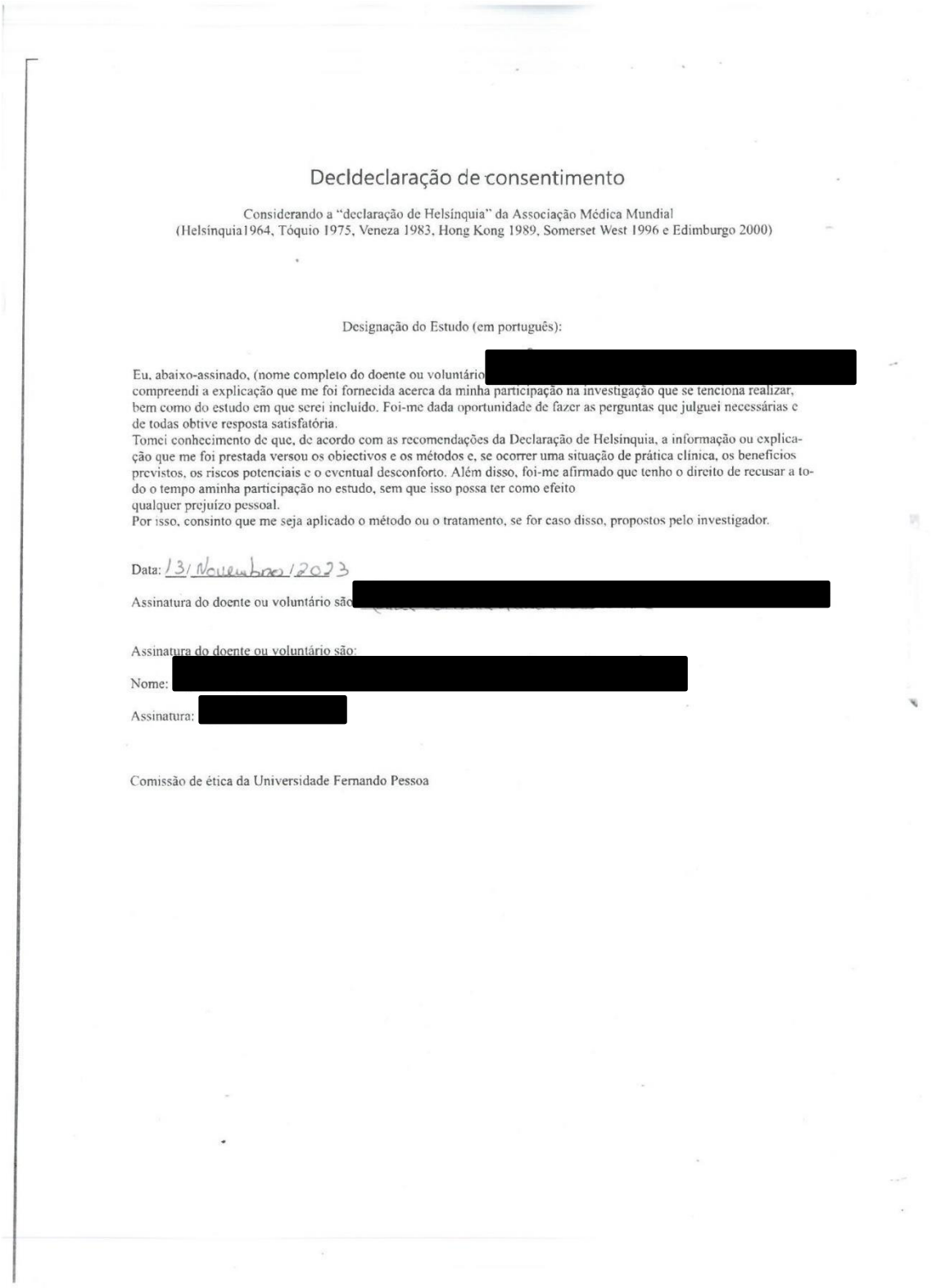
7. ANNEXES

Annex A. Informed consent



Decldeclaração de consentimento

Considerando a "declaração de Helsínquia" da Associação Médica Mundial
(Helsínquia1964, Tóquio 1975, Veneza 1983, Hong Kong 1989, Somerset West 1996 e Edimburgo 2000)

Designação do Estudo (em português):

Eu, abaixo-assinado, (nome completo do doente ou voluntário [redacted]
compreendi a explicação que me foi fornecida acerca da minha participação na investigação que se tenciona realizar, bem como do estudo em que serei incluído. Foi-me dada oportunidade de fazer as perguntas que julguei necessárias e de todas obtive resposta satisfatória.
Tomei conhecimento de que, de acordo com as recomendações da Declaração de Helsínquia, a informação ou explicação que me foi prestada versou os objectivos e os métodos e, se ocorrer uma situação de prática clínica, os benefícios previstos, os riscos potenciais e o eventual desconforto. Além disso, foi-me afirmado que tenho o direito de recusar a todo o tempo aminha participação no estudo, sem que isso possa ter como efeito
qualquer prejuízo pessoal.
Por isso, consinto que me seja aplicado o método ou o tratamento, se for caso disso, propostos pelo investigador.

Data: 13/ Novembro /2023

Assinatura do doente ou voluntário são [redacted]

Assinatura do doente ou voluntário são:

Nome: [redacted]

Assinatura: [redacted]

Comissão de ética da Universidade Fernando Pessoa

Annex B. Positive Opinion from the UFP Ethics Committee

UNIVERSIDADE FERNANDO PESSOA

Exma. Senhora
Prof. Doutora Sandra Gavinha
Diretora da FCS

Nº	Data
FCS/MMED – 525/24	27 de Fevereiro de 2024

Exma. Senhora Professor Doutora,

A Comissão de Ética apreciou o projeto de investigação apresentado por Matilde Corciulo, intitulado "Diagnosis and Management of Erosive Oral Lichen Planus: report of a clinical case", a realizar no âmbito do Mestrado Integrado em Medicina Dentária.

O estudo tem como finalidade contribuir para o cnhecimento crítico desta doença, nomeadamente, a sua abordagem na consulta de medicina dentária com vista ao diagnóstico, tratamento e acompanhamento, assim como, reforçar as competências dos médicos dentistas nesta área da medicina oral.

A Comissão de Ética considera nada haver a opor quanto à realização deste projeto.

Com os melhores cumprimentos,

A Presidente da
Comissão de Ética da UFP
Inês Lopes Cardoso
Inês Lopes Cardoso

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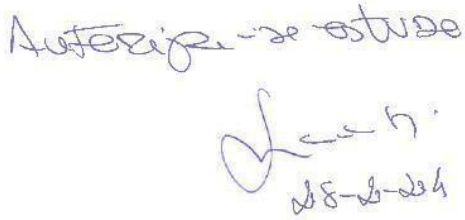
* (chamada para a rede fixa nacional)


Autorizo a estudo
28-6-24

Annex C. Anatomy-pathology report

ipatimup

UNIDADE DE PRESTAÇÃO DE SERVIÇOS
LABORATÓRIO DE PATOLOGIA E CITOPATOLOGIA

Diretora | Prof.ª Catarina Eloy
Médicos Especialistas | Drª Ana Marques | Dr. António Polónia | Dr. Daniel Pinto Dr. João Pinto | Dr. Jorge Pinheiro | Drª Sofia Campelos
Consultores | Prof.ª Fátima Carneiro | Prof.ª Leonor David | Prof.ª Elsa Fonseca Prof. José Manuel Lopes | Prof. Fernando Schmitt | Prof. Manuel Sobrinho Simões

RELATÓRIO ANÁTOMO-PATOLÓGICO

Nº do Exame: 2021/37424-1

* 2 0 2 1 3 7 4 2 4 1 *

Nome: [redacted] **Sexo:** F **Idade:** 66A
Natureza da peça: Boca **Nascimento:** 29/10/1955
Informação Clínica: Biópsia incisional na mucosa jugal direita. Presença de placas brancas com estrias reticulares e areas de erosão na mucosa jugal direita; presença de estrias brancas no lado controlateral. Confirmar diagnóstico clínico de líque plano oral em placas ou erosivo.

Material: Biópsia
Exame Requisitado: Histológico - biópsia incisional/excisional, raspagem, curetagem ou de eliminação espontânea
Nº de ID Amostra: M. N. O. P. G.

Médico/Hospital Requisitante: Drª Otilia Adelina Lopes
Telefone:
Fax:
Data de entrada: 23/11/2021
Data da colheita: 22/11/2021
Colheita da responsabilidade do cliente/entidade remetente.

Este material foi processado após a seguinte observação macroscópica

Descrição Macroscópica:
Retalho alongado de mucosa com 0,9x0,5x0,2cm, de superfície esbranquiçada e lisa.
IT:3F1C-C1

Descrição Microscópica:
Ao exame histológico observa-se mucosa revestida por epitélio pavimentoso estratificado com acantose, papilomatose e hiperqueratose de tipo paraqueratótico, com acentuada vacuolização de queratnóctios basais. No córion observa-se infiltrado inflamatório de predomínio linfocitário, em banda, que permeia focalmente o epitélio de revestimento.
Não se observam lesões de displasia nem sinais de malignidade.

Diagnóstico:
Lesões de mucosite de padrão liquenoide, compatíveis com a hipótese clínica de líquen plano oral (ver descrição).

Comentário:
Este resultado será disponibilizado no software SISO-DGS.

O Médico

Jorge Pinheiro

Dr. Jorge Pinheiro (M53582)
Este relatório foi validado eletronicamente pelo sistema informático

Porto, 25 de Novembro de 2021

Topografia: T-5100 **Morfologia:** D0-222

Pág: 1 / 1

Este laboratório possui Acreditação pelo Colégio Americano de Patologistas

Este exame foi processado e interpretado num fluxo digital

Advancing Excellence

IPAC acreditação E0022 ISO 15189 Exames Clínicos

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