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Differential diagnosis of two white lesions in jugal mucosa: case report

Diagnóstico diferencial de duas lesões brancas na mucosa jugal: relato de caso

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ABSTRACT

Leukoedema is a change that affects the jugal mucosa bilaterally, presenting as a whitish or grayish-white plaque. It has uncertain etiology, but is believed to be derived from a developmental change, while leukoplakia is a clinical term for the definition of a non-shaved white plaque that can affect the jugal mucosa and other oral sites. Its etiology may be linked to the use of tobacco, alcohol and ultraviolet radiation, being considered a potentially malignant lesion and treatment will depend on the degree of cellular dysplasia and extent of the lesion. The aim of this article is to present a clinical case of a patient diagnosed with two white lesions in the jugal mucosa. A 57-year-old female brown patient sought dental care complaining of white spots on her cheeks. She reported being a smoker for 35 years, having the habit of consuming a pack and a half a day. After clinical examination, the diagnostic hypotheses of leukoedema and leukoplakia were raised. Incisional biopsy, followed by histopathological analysis, confirmed the diagnosis of leukoedema with overlapping leukoplakia. Leukoedema does not require treatment as it is a variation of normality. However, it may be clinically associated with disorders that require intervention, as in the case presented, generating masking of characteristics and, consequently, diagnostic confusion.

Keywords: Leukoedema. Leukoplakia. Pathology.

RESUMO

Leucoedema é uma alteração que afeta a mucosa jugal, bilateralmente, apresentando-se como uma placa esbranquiçada ou branco-acinzentada. Possui etiologia incerta, mas acredita-se que seja proveniente de uma alteração de desenvolvimento, enquanto isso a leucoplasia é um termo clínico para a definição de uma placa branca não raspável que pode afetar a mucosa jugal e outros sítios orais. Sua etiologia pode estar ligada ao uso de tabaco, álcool e radiação ultravioleta, sendo considerada uma lesão potencialmente maligna e o tratamento dependerá do grau de displasia celular e extensão da lesão. O objetivo deste artigo é apresentar um caso clínico de uma paciente diagnosticada com duas lesões brancas na mucosa jugal. Paciente do sexo feminino, de 57 anos de idade, parda, procurou atendimento odontológico com queixa de manchas brancas em suas bochechas. Ela relatou ser fumante por 35 anos, tendo o costume de consumir um maço e meio por dia. Após o exame clínico, foram levantadas as hipóteses diagnósticas de leucoedema e leucoplasia. A biópsia incisional, seguida de análise histopatológica, confirmou o diagnóstico de leucoedema com leucoplasia sobreposta. O Leucoedema não requer tratamento, pois é uma variação da normalidade. No entanto, pode estar clinicamente associado a transtornos que requerem intervenção, como no caso apresentado, gerando mascaramento de características e, consequentemente, confusão diagnóstica.

Palavras-chave: Leucoedema. Leucoplasia. Patologia.

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INTRODUCTION

The name leucoedema was suggested by Sandstead and Lowe (1953), due to this lesion being clinically asymptomatic and presented as a whitish area, bright in the form of diffuse mist, which affects bilaterally the jugal mucosa (Cruz et al., 2009).

Its involvement is pronounced more among patients of the fourth decade of life, male and black race (Pinto et al., 2018).

Its etiology has not yet been well established, but it is presented as coming from a developmental anomaly. In addition, it may be present in smoking patients (Viñals, 2000).

An extremely important clinical criterion in the diagnosis of leukoedema is the fact that, when the jugal mucosa is dislocated, the lesion disappears, returning when we stop exerting traction (Cruz et al., 2009).

The term leukoplakia was first described by Schwimmer (1877). However, in 1978, the World Health Organization (WHO) defined it as a white spot or plaque that cannot be characterized clinically or pathologically like any other disease. It is a strictly clinical term and does not imply a specific histopathological change. Thus, it is considered as a potentially malignant lesion (Schwimmer, 1877; Warnakulasuriya et al., 2007; Ramos et al., 2017).

The involvement of this lesion is more observed in patients from the fourth to the seventh decade of life, male and without predilection for race (Ribeiro et al., 2012; Ramos et al., 2017).

The etiology of leukoplakia is still uncertain, but it is identified as multifactorial. Tobacco and alcohol can act separately or synergistically. In addition, ultraviolet radiation and the action of microorganisms such as HPV, *Treponema pallidum* and *candida albicans* are considered etiological factors (Warnakulasuriya et al., 2007; Della Vella et al., 2020).

Leukoplakia may present clinically in association with squamous cell carcinoma of the oral cavity, since carcinoma results from the malignant conversion of leukoplakia (Bewley & Farwell, 2017). In addition to other sites already with malignancy such as verrucous carcinoma and carcinoma in situ (Woo et al., 2014). It has also been described in association with white lesions without malignization potential, such as lichen planus, and keratosis (Albrecht et al., 1992; Woo et al., 2014).

Epidemiological studies report leukoplakia and leucoedema as common findings in tobacco users, and may be associated or not (Chandra & Govindraju, 2012).

The aim of this study is to present a clinical case of a smoking patient who was diagnosed with associated leucoedema and leukoplakia and the approach adopted.

CASE REPORT

A 57-year-old brown female patient sought dental care in the project "Diagnosis, treatment and epidemiology of oral cavity diseases" (LEBU) of the State University of Maringá complaining of “stain on cheek". The decision to seek treatment stemmed from the referral made by his dentist, after correction of a restoration fracture, a month ago. During the anamnesis, the patient reported that her visits to the dentist were scarce and did not notice the existence of the lesions, because they were asymptomatic. In her medical history, she denied being in medical treatment. As for the habits, she reported not consuming alcoholic beverages, but claimed to be a smoker for 35 years, with daily consumption of a pack and a half.

Intraoral physical examination showed diffuse white plaques in both jugal mucosa (Figure 1 – A and B). The plates were not detachable, allowing the differentiation of pseudomembranous candidosis. Traction of the jugal mucosa led to the disappearance of the lesion (Figure 1 – C and D). This made us raise the diagnostic hypothesis of leukoedema, but the possibility of leukoplakia was not ruled out due to smoking.

An incisional biopsy was performed. The chosen area was the most heterogeneous in relation to color, where there was a mixture of grayish white, with an opaquer white. Two semilunar incisions were performed, removing a small fragment of the lesion (Figure 2 - A) that was inserted into a vial

containing 10% formaldehyde and sent for histopathological analysis. Simple sutures were performed and postoperative guidance was provided to the patient, including cessation of tobacco use, especially during tissue healing. The following week, the patient returned without complications.

Histopathological examination revealed fragments of mucosa coated by parakeratinized and acanthotic stratified pavement epithelium, with the spinous layers exhibiting significant intracellular edema and vacuolization. The nuclei were often picnotic. At the same time, excerpts with hyperquethatosis and apparent duplication of the basal layer were also observed, in addition to a slight pleomorphism and hyperchromatism. We conclude that was a leukoplakia that developed with leucoedema as a "background" (Figs 2 – B, C and D).

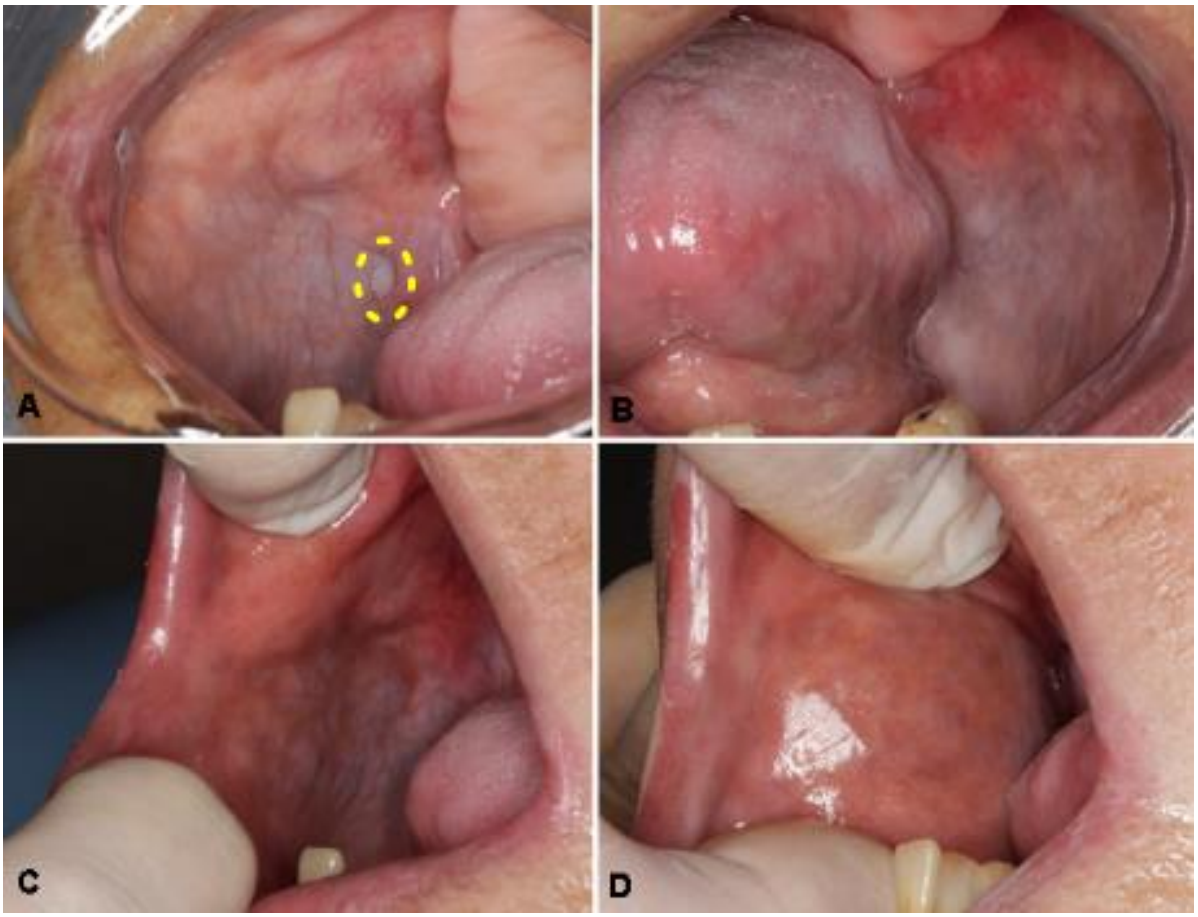

Figure 1. Initial intraoral physical examination. A and B: White plaques are observed in the right and left jugal mucosa. C and D: In the traction of jugal mucosa, it was possible to observe the disappearance of the plaque.
Source: the authors.

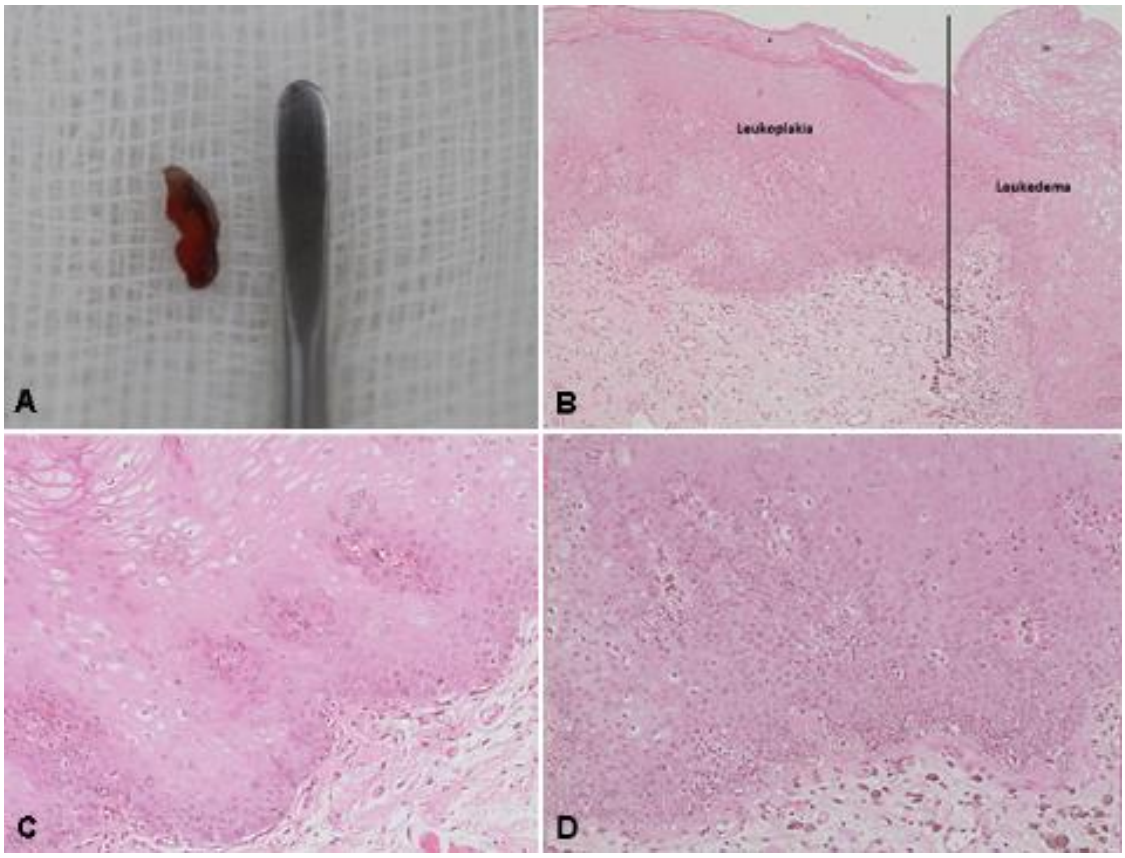

Figure 2. A: Incisional biopsy fragment. B: Histopathological examination presenting the region of leukoplakia and leukoedema. C: Leucoedema microscopy. D: Leukoplakia microscopy.
Source: the authors.

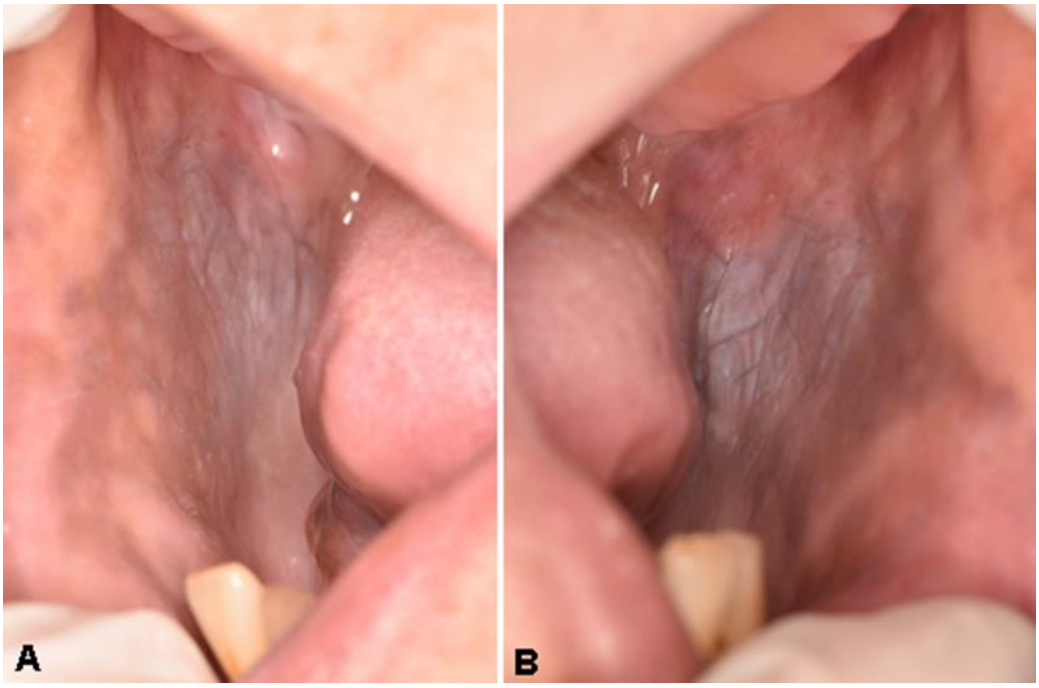

Figure 3. A and B: Clinical examination after one year of follow-up. A decrease in plaques is observed.
Source: the authors.

One year after biopsy, the patient returned presenting an apparent decrease in plaque extensions on both sides (Fig. 3 – A and B). The patient reported that she had decreased daily cigarette consumption, having adopted medical therapy with nicotine release patches. In addition, due to leukoplakia the patient will be followed every six months in our service.

DISCUSSION

The diagnosis of leukoplakia and leukoedema should be made excluding the possibility of other white lesions such as lichen planus, candidiasis, frictional keratosis, tobacco bag keratosis, nicotinic stomatitis and spongy white nevus (Viñals, 2000; Van Der Wall & Axéll, 2002; Cruz et al., 2009).

Etiologically, although leucoedema appears to be a developmental change, Viñals (2000) cites in his study that chemical factors, physical irritants, immunosuppression, heredity, bacterial action and stress may contribute to its development. In addition, leucoedema is a finding observed in the mucosa of coca and betel leaf chewers, as well as cannabis and tobacco smokers (Viñals, 2000). In the case of leukoplakia, some factors are pointed out in its etiology as ultra violet radiation, HPV, *candida albicans*, immunosuppression, alcohol, but it is mainly believed that the factor that most contributes to its development is tobacco, because more than 80% of patients with leukoplakia are smokers and are more likely to develop the lesion than nonsmokers (Martínez-Sahuquillo et al., 2008).

The habit of smoking inverted cigarette, very common in Asia, can lead to the development of leukoplakia in the palate. In these cases, mainly due to the heat produced by the cigarette acting on the cells of the oral mucosa. Furthermore, studies show that carcinogenic chemicals such as tar, alquenoes, nitrosamines, thiocyafield, carbon monoxide, ammonia, nitrogen oxide and heterocyclic aromatic hydrocarbons contribute to the development of leukoplakia and its malignancy (Hecht et al., 1984; Hoffmann et al., 1994; Martínez-Sahuquillo et al., 2008; Shetty et al., 2016). On the other hand, Andersson et al. (1997) demonstrated that the prevalence of leukoedema increases with increasing cigarette consumption daily, but is independent of nicotine and the residues produced in its combustion.

Regarding treatment, as leukoedema is a benign condition, there is no need for a specific treatment (Viñals, 2000). Unlike leukoplakia, which is an injury with malignancy potential, its treatment aims to prevent its malignant transformation. Thus, Nadeau and Kerr (2018) mention the elimination of all contributing factors to their existence, mainly reducing the smoking habit.

Other treatment alternatives for leukoplakia are presented in the literature as the systemic modality that includes the application of reoptics, beta carotene, vitamin C supplements, use of bleomycin, 5-fluorouracil, use of epioxygenase-2 growth factor inhibitors, photodynamic therapy, administration of a systemic photosensitizer, and local therapy that includes total surgical excision of the lesion, use of electrotrocauterio, cryosurgery and laser excision with carbon dioxide (Holmstrup & Dabelsteen, 2016; Van Der Waal, 2019).

Thus, the treatment of choice will depend on the degree of cellular dysplasia and the location and extent of the lesions. In our case, we performed an incisional biopsy for the diagnosis, and during the clinical presentation of the lesion with small diameter and with a histological picture representing a low degree of epithelial dysplasia, we proposed a preventive approach, advising the patient to reduce tobacco consumption, a fact that, after one year of follow-up, it was possible to visualize the decrease in white plaque extensions.

CONCLUSION

Leukoedema is a variation of normality. It is presented in the jugal mucosa, bilaterally, especially in black men race. It does not require treatment due to its harmless character. However, on leukoedema, other lesions may develop, as in the case presented. Overlap can generate masked

characteristics and confuse the differential diagnosis, delaying the treatment of the associated lesion that requires intervention. In these cases, it is extremely important that the dentist perform a biopsy covering both areas, in order to have a correct diagnosis and, thus, establish a conduct for the case.

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