Yellowish lesions of the oral cavity. Suggestion for a classification

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ABSTRACT
The colour of a lesion is due to its nature and to its histological substratum. In order to ease diagnosis, oral cavity lesions have been classified according to their colour in: white, red, white and red, bluish and/or purple, brown, grey and/or black lesions. To the best of our knowledge, there is no such a classification for yellow lesions. So, a suggestion for a classification of yellowish lesions according to their semiology is made with the following headings: diffuse macular lesions, papular, hypertrophic, or pustular lesions, together with cysts and nodes. This interpretation of the lesions by its colour is the first step to diagnosis. It should be taken into account that, as happens with any other classification, the yellowish group of lesions includes items with different prognosis as well as possible markers of systemic disorders.

Key words: Yellow lesions, differential diagnosis, classification.

RESUMEN
Para facilitar el diagnóstico de las lesiones de la cavidad oral estas han sido clasificadas atendiendo a su color en: blancas, rojas, blancas y rojas, azules y/o púrpura, marrones, grises y/o negras. El color de la lesión se debe a su naturaleza y al sustrato histológico. Debido a que no existe ninguna clasificación de las lesiones, según nuestro conocimiento, atendiendo a su color amarillo, proponemos aquí esta clasificación desde una perspectiva semiológica, agrupándolas en lesiones maculares difusas, lesiones papulares, lesiones hipertróficas, lesiones pustulosas, quistes y nódulos. Esta lectura de las lesiones según su color constituye el primer paso para ayudar a su diagnóstico. Finalmente, debemos considerar que al igual que ocurre con las lesiones que se clasifican en cualquier grupo de color, el grupo de lesiones amarillas incluirá lesiones con diferente pronóstico y además lesiones que pueden indicar una patología sistémica de base.

Palabras clave: Lesiones amarillas, diagnóstico diferencial, clasificación.
INTRODUCTION
Changes in colour have been classically used to catalogue and classify the mucosal and soft tissue pathology of the oral cavity. Thus, these lesions have been catalogued as white, red, white and red, blue and/or purple, brown, grey and/or black. However, and to the best of our knowledge, yellow lesions and conditions of the oral cavity have not been organized and recognized as a separate group (1-4).
Isolated reports recovering yellowish lesions within the oral cavity have been published from time to time. The yellow set of lesions has a wide prognostic spectrum and represents a very heterogeneous group of lesions, acting some of them as occasional markers for systemic disorders (5-10).
From a semiological point of view, these disorders can emerge as diffuse macular lesions (hypercarotenemia and hyperbilirubinemia), papular lesions (Fordyce condition, accessory lymphoid aggregates, verruciform xanthoma, lipoid proteinosis and amyloidosis), hypertrophies (yellow hairy tongue), pustular lesions (pyostomatitis vegetans) cysts (dermoid and lymphoepithelial cysts) and nodes (lipoma and liposarcoma) (1, 11).
The interpretation of these elementary lesions is a previous step to diagnosis of the disorder. Thus, an attempt was made to classify yellowish lesions in several categories of elementary lesions attending to the most frequent and characteristic elementary lesion. However, several pathologies may present multiple elementary lesions and, in these situations, a number of differential diagnoses should be considered (11).

This proposal of a classification for those lesions/conditions in the oral mucosa displaying a “yellow colour” is based upon their nature and histological substratum (Table 1).

CLASSIFICATION
Diffuse macular yellow lesions:
-Jaundice. This is a condition characterized by an excess of bilirubin in plasma and its accumulation within the tissues, resulting in a uniform, diffuse yellowish colour of the skin, mucosa and the sclera of the eye. The intensity of the yellow coloration varies with the bilirubin serum level. In the oral mucosa, the discolouration is more frequently found at the junction between hard and soft palate, ventral surface of the tongue and cheeks, due to the affinity of the elastic fibres for bilirubin (12) (Figure 1).
- Hypercarotenemia. This condition is due to a high plasma concentration of carotenes, mostly diet-related (carrots, oranges, etc). Its clinical presentation is as a yellowish pigmentation in the palate and, occasionally, in palms, soles and nasolabial fold. The absence of sclerae pigmentation and the carotene serum level permit a differential diagnosis with jaundice (13).

<table>
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<tr>
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<td>Yellow hairy tongue</td>
<td>Hypertrophy of filiform papillae / chromogenic microorganisms</td>
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Table 1. Yellow lesions of the oral cavity according to their pathogeny and histological features.
Yellowish lesions of the oral cavity

Fig. 1. Jaundice at the junction between hard and soft palate.

Fig. 2. Ectopic lymphoid tissue in the tonsillar arches.

Fig. 3. Verruciform xanthoma in the lateral border of the tongue.

Fig. 4. Verrucous proliferation of the epithelium with hyperkeratosis and high numbers of foam cells.

Fig. 5. Hairy tongue.
Mainly yellow papular lesions:
Papules are solid lesions resulting from the hyperplasia of the cellular elements of the oral mucosa (epithelial hyperplasia, connective tissue infiltration and metabolic deposits). The colour is a key element in the recognition of papular lesions.

-Fordyce condition. Is defined by the emergence of small, multiple heterotopic sebaceous glands in the oral mucosa and red lip. This is an asymptomatic, pseudo-pathologic condition present in up to an 80% of the individuals. It is more prevalent among adults probably due to hormonal factors (14).

-Accessory lymphoid aggregates or ectopic lymphoid tissue. This concerns normal lymphoid tissue located in the soft palate, floor of the mouth and tonsillar arches. The diagnosis is generally established relying on the clinical features (15, 16) (Figure 2).

-Verruciform xanthoma. Is an asymptomatic papular lesion with a well defined, mainly yellowish, verrucose surface that can be found on the alveolar ridge and gingivae. It does not seem to have any relationship with metabolic disorders and its aetiology and pathogeny are not fully understood (17, 18) (Figures 3 and 4).

-Lipoglycoproteinosis or lipid proteinosis. Is an inherited lesion that arises during childhood due to extracellular deposits of glycoproteins and lipids in lip mucosa, tongue, lingual frenum, palate, pharynx, larynx and skin. Clinically, this disorder reveals yellowish granules and papular lesions that evolve resulting in a scarring aspect. Hoarseness is a frequently and early symptom of this disease (19).

-Systemic amyloidosis. Is a deposit of amyloid protein in the skin, heart, kidney, digestive tract, liver, larynx and trachea. Rounded or irregular yellowish papules in the oral cavity are an early sign of the disease, along with nodes, ulcerations or bristles with a haemorrhagic content. A typical sign of this disorder is the presence of mucous folds by the corners of the mouth that cause difficulties for chewing, swallowing or talking. The prognosis is serious (6, 7, 20, 21).

Hypertrrophies
-Yellow hairy tongue. Is an ill defined lesion, located in the two anterior thirds of the tongue, with a hairy appearance as a consequence of the lengthening of the filiform papillae due to tobacco, fungi, food impaction and the overgrowth of chromogenic bacteria (22) (Figure 5).

Pustular lesions.
-Pyostomatitis vegetans. Is a chronic, pustular, mucocutaneous disorder. Oral lesions can be found in the buccal mucosa, lip, palate and gingivae. These lesions show small papillary vegetations, pustules and small superficial ulcerations on an erythematous surface. Typically, they are not painful and constitute a very specific oral mucosal marker for the existence of inflammatory bowel disorders, particularly ulcerative colitis (10, 23).

Cysts.
-Dermoid cyst. Is a developmental cyst made of a fibrous wall layered by a stratified epithelium with dermal adnexal structures (hair follicles, sweat and sebaceous glands). They are usually located over the mylohyoid muscle, causing a swelling in the floor of the mouth (24-25).
-Lymphoepithelial cyst. Is a slow growing, asymptomatic, small sized cyst (usually less than a cm), most frequently found in the floor of the mouth and ventral surface of the tongue (27).

Nodes.
-Superficial lipoma. Is an asymptomatic, mesenchymal benign tumour made of mature adipose tissue with a slow growth rate. Its most common intraoral locations are the cheeks, floor of the mouth and the tongue. Due to its clinical similarity with benign submucous cysts (lymphoid and lymphoepithelial cysts), the diagnosis can be established by a puncture that shows the presence of mature adipose tissue (28-31).
-Liposarcoma. This malignant mesenchymal tumour is most frequently found in the tongue. There are four different pathological types, with different biological behaviour and prognosis. It is a rare neoplasm that accounts for a 5.6% to 9% of all head and neck tumours. Its presence in the oral cavity is even less frequent (32).

CONCLUSION
The classification and organization of yellow intraoral lesions is relevant because it may ease differential diagnosis within a group of lesions and conditions with diverse clinical meaning and also because it will contribute to the early diagnosis of general disorders, as these lesions occasionally behave as markers of systemic disease.

REFERENCES