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# Teratoid cyst of the lower lip in an adult patient: case report

## Quiste teratoide del labio inferior en un paciente adulto: reporte de caso

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**ABSTRACT:** Teratoid cysts are rare occurrences in the oral cavity, particularly in adults, and are more commonly found in infants. Histologically, these cysts are characterized by the presence of respiratory epithelium, smooth muscle cells, and sebaceous glands. This report aims to describe a case of a teratoid cyst located in the lower lip of an adult patient. A 57-year-old male presented with a slow-growing lesion on the right side of the lower lip, first noticed four years prior. An excisional biopsy was performed, revealing a well-defined cystic lesion with thick, whitish content within its lumen. Histopathological examination showed an orthokeratinized stratified squamous epithelial lining with abundant keratin, dense connective tissue, multinucleated giant cells, and mucosecretory cells. Additionally, cutaneous adnexal structures such as sebaceous glands and hair follicles were identified. Follow-up at one month revealed no cutaneous sequelae. Teratoid cysts in the oral region are rare in adults, and definitive diagnosis relies on histopathological evaluation.

**KEY WORDS: Teratoid cyst, maxillafacial surgery, excisional biosy.**

### INTRODUCCIÓN

Dermoid cysts are defined as congenital lesions derived from pluripotential cells and are classified according to the embryonic derivatives they contain: epidermoids (lined with epithelium without associated structures), dermoids (epithelial cysts with the presence of hair follicles, sweat or sebaceous glands), teratoids (lined with epithelial and non-epithelial elements such as bone, muscle, respiratory tissue, and gastrointestinal components), and finally, true teratomas, which contain all three well-differentiated germ layers (Sahoo *et al*., 2015; De Araújo Lima *et al*., 2016; Tazi *et al*., 2016; Cordero-Yanza *et al*., 2017). In the case of teratoid cysts, variations in their lining may occur, ranging from stratified squamous epithelium to ciliated respiratory epithelium containing ectoderm, mesoderm, and endoderm (Palaskar *et al*., 2014).

Their origin is attributed to the entrapment of epithelial remnants at the junction of the 1st and 2nd pharyngeal arches (Sahoo *et al*., 2015) during the 3rd and 4th weeks of embryonic development (De Araújo Lima *et al*., 2016). Another theory proposed by De Araújo Lima *et al*. (2016) explains the pathological mechanism as the implantation of epithelial cells following traumatic, surgical, or iatrogenic events, or due to ductal occlusion of a sebaceous gland.

Sahoo *et al*. (2015) and Palaskar *et al*. (2014) report that 7% of these cysts appear in the head and neck region, while only 1.6% occur in the oral cavity, representing less than 0.01% of all oral cysts. Their incidence ranges from 0.02% to 1.8%, with no gender predilection (Cordero-Yanza *et al*., 2017). Most cases are reported in, although note occurrences between the 2nd and 3rd decades (Pentenero *et al*., 2013; Palaskar *et al*., 2014; De Araújo Lima *et al*., 2016; Tazi *et al*., 2016).

Therefore, the aim of this manuscript is to describe a lesion in the lower lip whose definitive diagnosis was a teratoid cyst.

## CASE REPORT

Male patient of 57 years of age, showed a lesion on the lower lip of the right side. He reports progressive increase in volume for about 4 years and placement of filler by an physician for aesthetic purposes in 2003. No other medical record was under registration.

On clinical examination, a nodule of 4 cm in diameter is observed on the right side of the lower lip, firm to palpation, mobile, not adhered to deep planes, smooth surface and the same color of the mucosa, painless, projecting below the vermilion edge creating asymmetry of the lip (Fig. 1A and 1B). The patient signed an informed consent where it was explained by the authors all the procedures, chart and photographic registers, and divulgation process regarding his condition.

Presumptive diagnosis: reaction to foreign body by filler material, mucocele and lipoma. Excisional biopsy of the lesion was performed by means of an incision in the inner lip, a flat debridement of the lesion was performed by

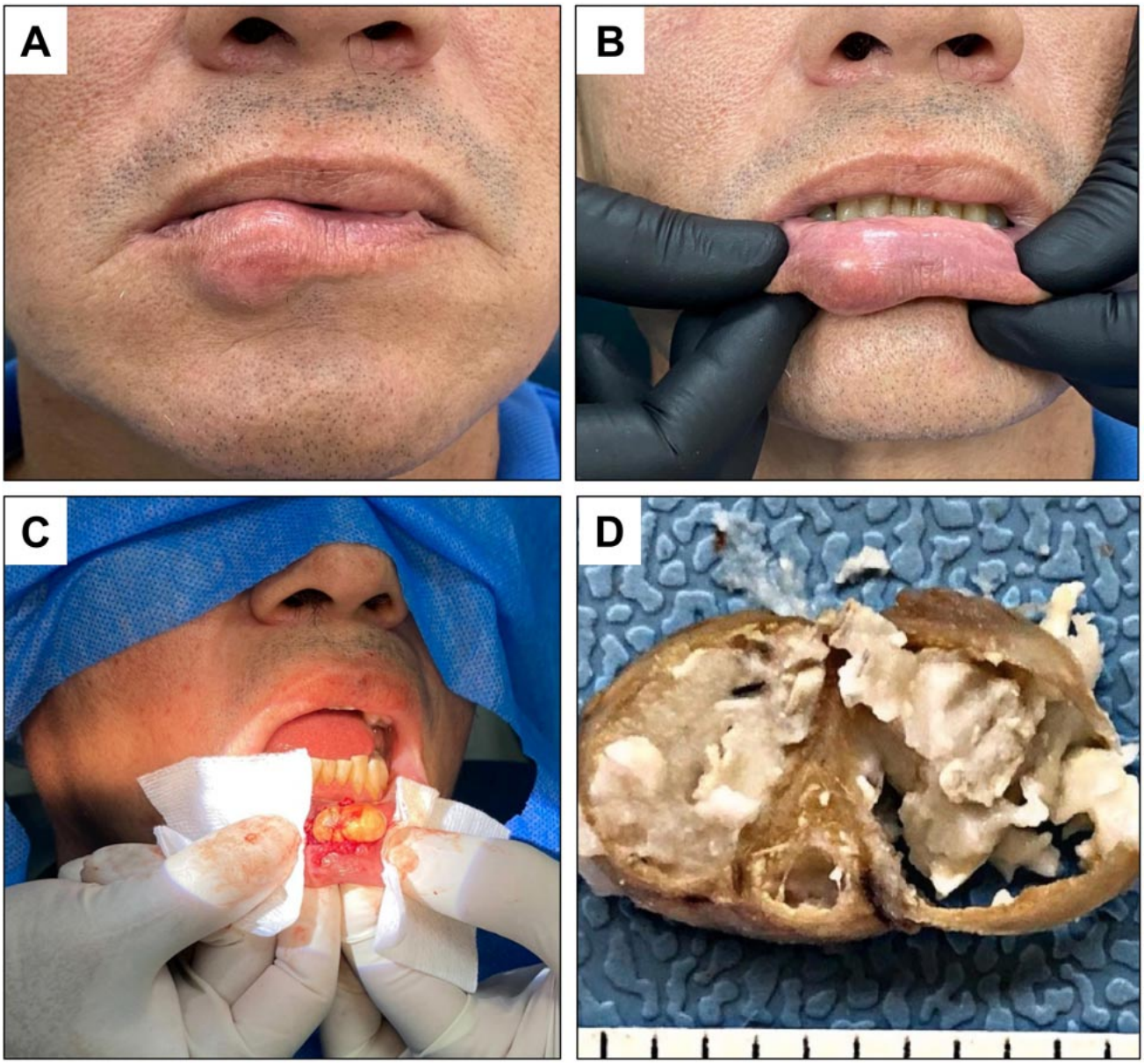


Fig. 1. Frontal photography of the lesion with increased volume of the external surface of the lower lip (A) and internal surface (B). C) Excisional biosy of the lesion. It can be seen a yellow capsule. D) Macroscopic study of the sample: Cystic lesion, well delimited with a white-like color interior.

Hilton's maneuver with a blunt instrument and the lesion was discovered (Fig. 1C), where it was yellowish. When the lesion was inserted into the vessel with formaldehyde it did not float, which is characteristic of a lesion with fatty components. It is sent to the laboratory for histopathological evaluation.

The macroscopic study showed a well-defined cystic lesion, with a thick whitish wall, abundant whitish content and thick light (Fig.1D). In the histopathological study with hematoxylin and eosin staining (H&E), a cystic lesion covered by orthokeratinized stratified flat epithelium and abundant keratin light (Fig. 2A). In the wall, formed by dense connective tissue, adipocytes, hair follicles, keratin remains with giant foreign body cells are observed. In some portions the lining epithelium acquires a pseudostratified ciliated appearance, similar to the respiratory epithelium

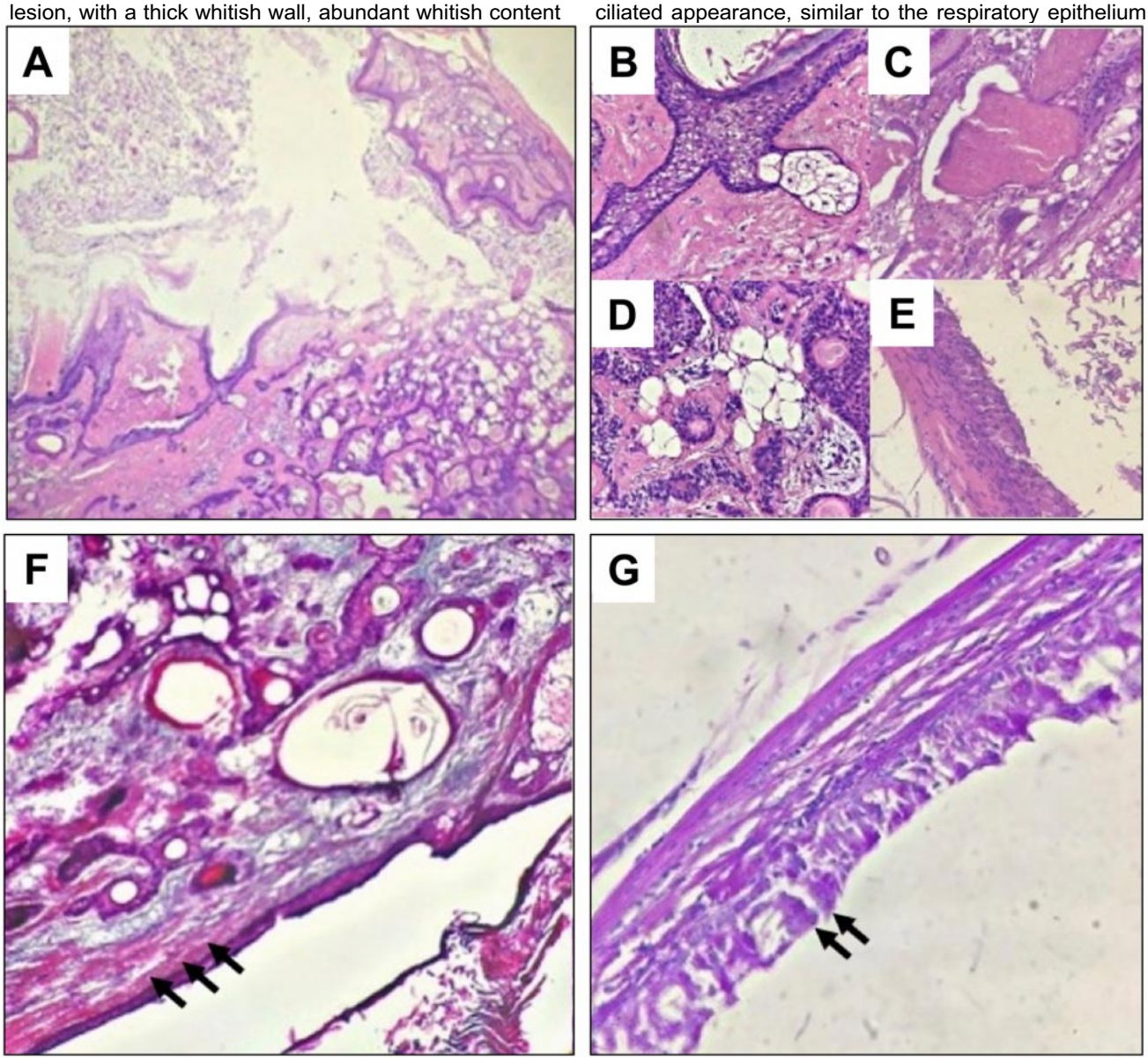


Fig. 2. Photomicrography, 4X, H&E: A) It can be identified a cystic lesion, coated with plain stratified orthoqueratinized epithelium, with cutaneous anexes. There is high quantity of queratina in the center of the lesion. The wall is formed with dense connective tissue. Photomicrography, 10X, H&E. B: cutaneous anexes (cebaseous gland and hair follicle). C: in the cystic wall, keratin remains and around multinucleated giant cells of foreign body. D: Adipocyte cystic wall identified. E: Portions of lining epithelium with respiratory differentiation. Photomicrography, 10X. F: Masson's trichrome, red dyed smooth muscle fibers are observed, forming the cyst wall (pointed with arrows). G: SBP, purple-stained mucosecretory cells are identified in the respiratory-looking lining epithelium (marked with arrows)

(Fig. 2B,2C and 2D). Smooth muscle fibers are identified in the cystic wall with Masson's tricomic staining and mucosecretory cells in the epithelium with respiratory differentiation (Fig. 2F and 2D). The patient was followed 1 month later (Fig. 3) where tissue replacement and satisfactory healing were evident, as well as perfect lip function.

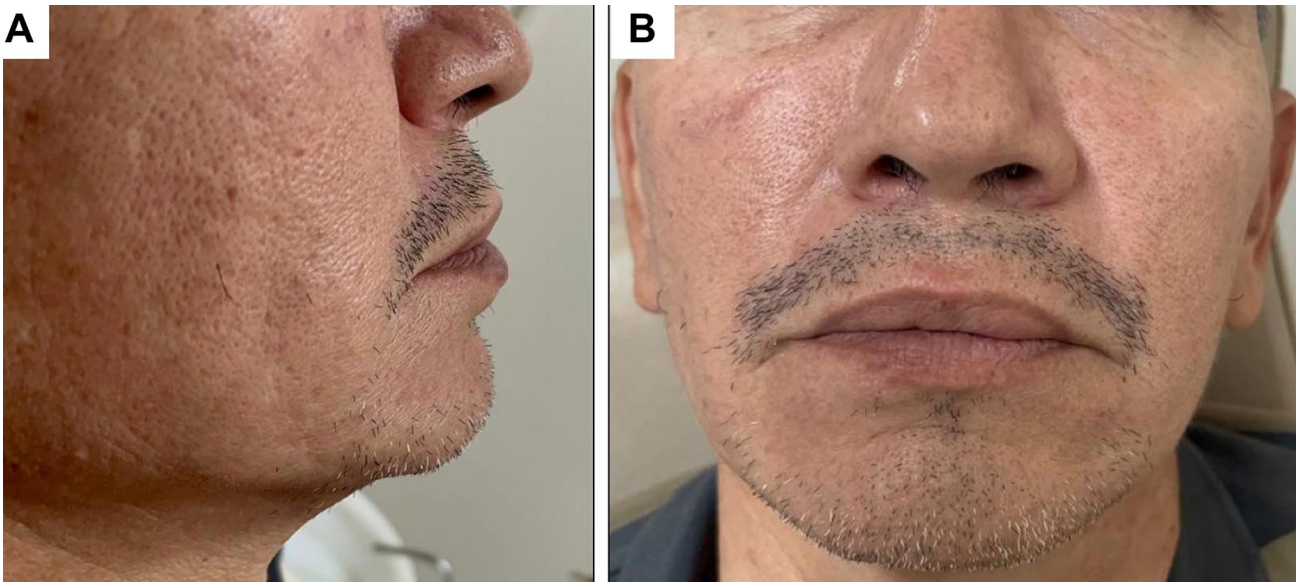

Fig. 3. Sagittal photography (A) and Frontal photography (B) with one month after the surgery follow up.

## DISCUSSION

Dermoid cysts are benign, congenital entities that can occur anywhere in the body, with the head and neck region being a less common location—particularly the oral cavity (Pentenero *et al*., 2013; Palaskar *et al*., 2014; Cordero-Yanza *et al*., 2017). To date, no cases of teratoid cysts located in the lower lip have been documented, as described in this manuscript. These cysts are typically observed in infants (De Araújo Lima *et al*., 2016; Cordero-Yanza *et al*., 2017); however, they may also be found in adults (Sahoo *et al*., 2015; Palaskar *et al*., 2014), as in the present case.

Clinically, they appear as slow-growing, asymptomatic masses (Palaskar *et al*., 2014; Cordero-Yanza *et al*., 2017), although their presentation may vary depending on location. Diagnosis is often challenging and generally requires imaging modalities such as ultrasonography, computed tomography, and magnetic resonance imaging. However, the gold standard for diagnosis remains histopathological examination (Sahoo *et al*., 2015; Tazi *et al*., 2016). Differential diagnoses depend on the lesion's anatomical location. One of the most frequent sites of occurrence is the floor of the mouth (Pentenero *et al*., 2013; Sahoo *et al*., 2015; De Araújo Lima *et al*., 2016; Cordero-Yanza *et al*., 2017), though they can also appear on the tongue (Tazi *et al*., 2016), buccal mucosa, mandible, and lips (Sahoo *et al*.,2015). Cases have also been reported in the zygomatic region (Sahoo *et al*., 2015); however, reports of adult patients with lesions located in the lower lip are rare.

Teratoid cysts are characterized by slow growth and a painless clinical course (Palaskar *et al*., 2014; De Araújo Lima *et al*., 2016; Cordero-Yanza *et al*., 2017), consistent with the present case, in which the patient reported a progressive increase in size over a four-year period. Histologically, teratoid cysts present a stratified epithelial lining. Within the cyst, respiratory epithelial cells may be observed (Cordero-Yanza *et al*., 2017), as demonstrated in this case, where mucosecretory cells were identified using PAS staining, along with smooth muscle cells, hair follicles, and sebaceous glands. We can conclude that oral teratoid cysts are rare entities, particularly in adults.

**Data Availability:** All data supporting this study are included in the article.

**Author Contributions:** The research was conducted with the equal participation of all authors, who equally contributed

to data collection and analysis, as well as to the writing of the manuscript. All authors have read and approved the published version of the manuscript.

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**Conflict of Interest:** The authors declare no conflicts of interest.

**Ethical Approval:** The study was conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from the subject involved in the study.

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**RESUMEN:** Los quistes teratoides son lesiones poco frecuentes en la cavidad oral, especialmente en adultos, siendo más comunes en lactantes. Histológicamente, estos quistes se caracterizan por la presencia de epitelio respiratorio, células musculares lisas y glándulas sebáceas. Este reporte tiene como objetivo describir un caso de quiste teratoide ubicado en el labio inferior de un paciente adulto. Un paciente masculino de 57 años se presentó con una lesión de crecimiento lento en el lado derecho del labio inferior, detectada por primera vez hace cuatro años. Se realizó una biopsia excisional, revelando una lesión quística bien delimitada con un contenido espeso y blanquecino en su lumen. El examen histopatológico mostró un revestimiento de epitelio escamoso estratificado ortoqueratinizado con abundante queratina, tejido conectivo denso, células gigantes multinucleadas y células mucosecretoras. Además, se identificaron anexos cutáneos como glándulas sebáceas y folículos pilosos. El seguimiento al mes no mostró secuelas cutáneas. Los quistes teratoides en la región oral son entidades raras en adultos, y su diagnóstico definitivo se basa en la evaluación histopatológica.

**PALABRAS CLAVE: Quiste teratoide, cirugía maxilofacial, biopsia excisional.**

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