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### Clinical case

# Giant facial dermoid cyst: A case treated by marsupialization



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#### ABSTRACT

Dermoid cyst is considered a rare lesion caused by the epithelial cells inclusion along the lines of embryonic closure. Typically, intraoral dermoid cysts present as slow growing masses in the midline of the floor of the mouth and rare cases are reported in the tongue, cheek, and in the parotid gland. This paper describes a 59-year-old man with a large dermoid cyst in the right cheek treated by marsupialization technique. This seems to be the first report of marsupialization in an oral dermoid cyst, although some cases have been successfully described in other locations. The decision regarding which approach is most appropriate is based on the location and extent of lesion.

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#### Cisto dermóide gigante da face: Caso tratado por marsupialização

#### RESUMO

O cisto dermóide é considerado uma lesão rara, causada pela inclusão de células epiteliais ao longo das linhas de fusão embrionária. Normalmente, os cistos dermóides intra-orais apresentam-se como massas de crescimento lento na linha média do pavimento oral e raros casos são relatados na língua, região geniana e na glândula parótida. Este artigo descreve um homem de 59 anos com um grande cisto dermóide na face direita tratado pela técnica de marsupialização. Este parece ser o primeiro relato de marsupialização de um cisto dermóide oral, embora alguns casos tenham sido descritos com sucesso em outras localizações. A decisão sobre qual abordagem é mais adequada baseia-se na localização e extensão da lesão.

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##### Palavras-chave:

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## Introduction

Dermoid cysts are uncommon oral developmental cysts.<sup>1,2</sup> The term dermoid cyst has been used to clinically describe a group of lesions with similar features, although they have different denomination according to its histological aspect: epidermoid, dermoid or teratoid cyst.<sup>3</sup> The true dermoid cysts are lined by epidermis with the presence of dermal appendages, such as sweat glands, sebaceous glands, hair and hair follicles, whereas the epidermoid cyst are also lined by epidermis, but without the appendages.<sup>1-3</sup> The teratoid cysts are rare in the oral cavity and present elements from the three germ layers, ectoderm, mesoderm and endoderm.<sup>2</sup>

Head and neck dermoid cysts are relatively infrequent and account for only 6.9% of all dermoid cysts.<sup>1,3</sup> In the oral cavity, the floor of the mouth is the most common site, being rarely found in the cheeks.<sup>4-6</sup> Although very rare, these lesions may also occur in the lip.<sup>7</sup> Uncommon at birth, the dermoid cyst usually becomes clinically apparent during the second or third decades of life.<sup>4</sup> It shows no gender predilection and the size varies, with cases presenting up to 12 cm of extension.<sup>8</sup>

Surgical excision represents the most adequate treatment. However, the marsupialization technique can be an alternative approach for large lesions.<sup>3,7</sup> Marsupialization consists in performing a surgical cavity on the wall of the cyst, emptying its content and maintaining the continuity between the cyst and the oral cavity, maxillary sinus, or nasal cavity. This technique is indicated for large cysts, cystic lesions associated with unerupted teeth in pediatric patients, or in patients with systemic diseases, generally the elderly, but it is not indicated for infected lesions.<sup>9</sup>

Although the dermoid cyst presents a slow growth, some lesions can reach a broad volume compromising function and esthetics. In addition, depending on the site, the surgical treatment is not recommended. This report describes a giant cheek dermoid cyst treated by the marsupialization technique.

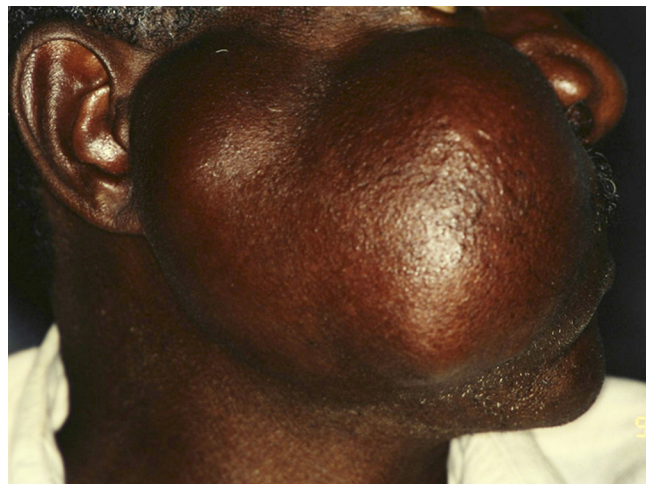
## Case report

A 59-year-old man was referred to the Oral Diagnosis Department complaining a large swelling in the right cheek with approximately 13 years of duration and esthetics impairment. The patient denied pain, tenderness, dysphagia, dysphonia, dyspnea or any trauma on the face or neck. Clinical examination showed a large well-circumscribed, soft, smooth mass that occupied the entire right face, which extended into the oral cavity and measured 13 cm × 8.0 cm in size. There were no local skin changes and the palpation indicated a well-delimited lesion, painless and with soft consistency (Fig. 1). Lateral view revealed a binodular surface, involving the cheek and the parotid region (Fig. 2).

A computed tomography (CT) scan demonstrated a well-defined and hypodense soft tissue mass in the superficial portion of the right parotid gland and cheek. Needle aspiration was performed, which exhibited large amount of a cheese-like keratinous substance (Fig. 3). Based on the clinical features, in addition to contents aspirated, a provisional diagnosis of dermoid cyst was made.



**Fig. 1 – Large, well-circumscribed, soft, smooth mass, affecting the entire right face.**



**Fig. 2 – Lesion with a binodular surface, involving the cheek and the parotid region.**



**Fig. 3 – Needle aspiration revealed a large amount of a yellowish and cheese-like keratinous substance.**

Surgical excision would be the treatment of choice if it could be done safely. However, because of large size of the lesion, the cyst capsule could eventually present close proximity to the branch from the facial nerve, with high risk of nerve injury. Thus, a marsupialization technique was proposed. Under local anesthesia (Lidocaine 2% with epinephrine; DFL, Rio de Janeiro – RJ), by intra oral approach, a vertical releasing incision was made in center of the cheek and a flap was raised with the necessary extension. Posteriorly was performed a surgical cavity on the wall of the cyst, emptying its content and maintaining the continuity between the cyst and the oral cavity. The flaps were repositioned and anchored using resorbable sutures of the cystic capsule to oral mucosa. (Vicryl 4/0, FS-2; Ethicon, St-Stevens-Woluwe, Belgium). Cyst wall specimens were obtained during surgery and sent to histological examination.

After surgery, the patient received an oral antibiotic (amoxicillin: 2 g loading dose, then 1.5 g/day for 7 days). A non-steroidal analgesic was also recommended. The patient was instructed to follow a soft diet for one week and to maintain appropriate oral hygiene, including twice daily rinsing with 0.2% chlorhexidine mouthwash and three daily irrigations of the buccal pocket, using a plastic syringe and chlorhexidine during the period of marsupialization.

Microscopically, the lesion showed a cavity lined by keratinized stratified squamous epithelium. The fibrous connective tissue capsule contained hair follicles, sebaceous glands and sweat glands, confirming the diagnosis of dermoid cyst (Fig. 4). Twenty-four months after treatment, the patient showed significant regression of the facial asymmetry. Under general anesthesia by intra oral approach, the remaining lesion was completely enucleated. No adjuvant therapy has been taken. In 6-year follow-up no evidence of recurrence was found (Fig. 5).

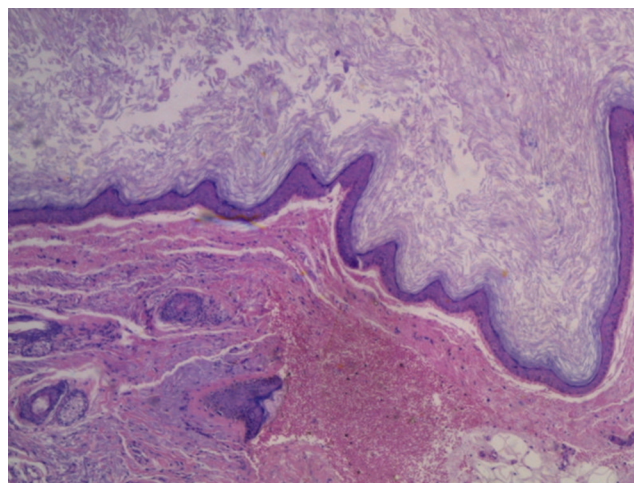
## Discussion

Dermoid cysts are development cysts resulting from entrapped ectodermal tissue into developing dermis or submucosa. In the oral cavity, this lesion occurs frequently in the midline of floor of the mouth. Dermoid cysts of the cheek are rare and few cases have been reported.<sup>10</sup>

Clinically, the cyst usually presents itself as a painless and slow-growing lesion. It has a doughy consistency and is often soft and well encapsulated, without associated lymphadenopathy, similar to our case. In the cases located in the floor of the mouth, depending on the size, the lesions may cause airways obstruction with consequent dysphagia, dysphonia and dyspnea.<sup>7</sup>

The differential diagnosis of oral dermoid cysts includes mucous retention cyst, benign mesenchymal tumors, and benign and malignant salivary gland tumors.<sup>3,8</sup> In the present case, although it appeared as giant nodule, the lesion was well-delimited, with soft consistency and a long-term evolution. Moreover, needle aspiration showed a large amount of keratinous substance, which is highly suggestive for cystic lesion producing keratin.<sup>3-10</sup>

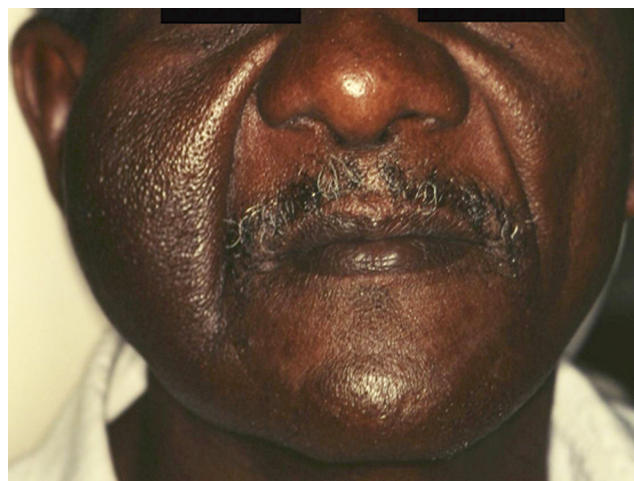
The most appropriated management for dermoid cysts is the complete surgical removal.<sup>3,5,7</sup> However, in some



**Fig. 4 – The microscopic exam showed a cystic lesion with cavity lined by squamous stratified epithelium hyperorthokeratinized with cutaneous attachments, such as sebaceous glands and hair follicles.**

instances, this is an inadvisable procedure. In the current case, it was a very large lesion located in the right cheek, probably in close proximity with the facial nerve. Therefore, the conventional surgical excision could be the cause of nerve injury with consequent irreversible facial paralysis.<sup>9</sup> Thus, a conservative surgical approach, which consisted in a marsupialization technique, was performed.

This seems to be the first report of marsupialization in an oral dermoid cyst, although some cases have been described in the other locations.<sup>10</sup> Marsupialization technique may be an important and attractive alternative to treat large oral dermoid cysts, avoiding extensive facial surgery with potential complications. The final decision regarding which approach is most appropriate is based on the location and extent of lesion.



**Fig. 5 – Significant regression of the facial asymmetry twenty-four months later, maintaining optimal cosmesis.**

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## Ethical disclosures

**Protection of human and animal subjects.** The authors declare that no experiments were performed on humans or animals for this study.

**Confidentiality of data.** The authors declare that they have followed the protocols of their work center on the publication of patient data.

**Right to privacy and informed consent.** The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

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## Conflicts of interest

The authors have no conflicts of interest to declare.

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