Clinical History:

A 32-year-old male patient underwent maxillofacial surgery consultation for evaluation of a soft swelling lesion in the floor of the mouth present since childhood, but with recent growth.

Imaging Findings:

An ultrasound of the salivary gland/ floor of mouth was performed initially, and showed a sublingual cystic lesion with heterogeneous contents resembling a "sack of marbles", almost pathognomic of a dermoid cyst (Fig. 1).

Following this, a Computed Tomography (CT) examination was performed, which confirmed the presence of a bulky cystic lesion, centred on the floor of the mouth, superior to the mylohyoid muscle (Fig. 2). Probably due to its large size, ectasia of adjacent Wharton's ducts was noted bilaterally (Fig. 2d).

The surgical team decided to excise the lesion and submit it for histopathological examination, proving its nature as a dermoid cyst.

Discussion:

Cystic lesions of the floor of the mouth are well recognised and can be congenital or acquired. The main differential includes: ranula, dermoid cysts and epidermoid cysts. Less common are: false sialoceles, hydatid cysts and thyroglossal duct cysts [3].

A ranula is a mucus retention cyst arising from a sublingual or minor salivary gland. They can be simple or plunging/diving. A simple ranula is a cystic collection confined to the sublingual space in the floor of the mouth. A diving or plunging ranula typically presents with a swelling in the submandibular region or upper neck as the result of mucus extravasating inferior to mylohyoid. This extension occurs more commonly from the sublingual space via a posterior route, and because they lack an epithelial lining plunging ranulas are classified as pseudocysts [1, 4].

Congenital inclusion cysts are commonly used in reference to both dermoid and epidermoid cysts [1]. Epidermoid cysts contain debris from their desquamated ectodermal lining with keratin and cholesterol elements derived from the breakdown of cell membranes [1]. They are more frequently seen in the floor of the mouth than in the submandibular space. On imaging they appear as midline simple cystic lesions and are often indistinguishable
from ranulas [3].

Dermoid cysts include components from all three layers of ectoderm and may present with adnexal structures such as teeth, hair and sebaceous glands. They may contain fatty and calcified components as well as fluid, important in the differential diagnosis. Fat content in dermoid cysts often collects in globules lending the cysts on imaging to have an appearance similar to a “sack of marbles” [1, 3].

Malignant transformation in a dermoid cyst is extremely rare, but has been described in the literature [6]. The oral cavity is the second most common location of dermoid cysts in the head and neck, the most frequent being the orbit [1]. They are classified as submandibular or sublingual based on their location with respect to the mylohyoid muscle [2].

On Magnetic Resonance Imaging (MRI) dermoid cysts usually demonstrate intermediate signal on T1-weighted sequences because of the presence of lipids, and high signal intensity on T2-weighted sequences. Epidermoid cysts have fluid-signal characteristics and show diffusion restriction, as do some dermoid cysts. The complex content of dermoid cysts helps differentiate them from epidermoid cysts and ranulas [1, 5]. Multiplanar imaging is essential for planning surgical resection and approach, demonstrating the exact location of the dermoid cyst with respect to mylohyoid [1, 4].

**Differential Diagnosis List:** Dermoid cyst, Ranula, Epidermoid cyst

**Final Diagnosis:** Dermoid cyst

**References:**


Description: Axial non-enhanced CT examination confirming the presence of a bulky cystic lesion in the floor of the mouth. Origin: Radiology Department, Centro Hospitalar São João, Faculdade de Medicina da Universidade do Porto – Porto/PT
Description: Coronal non-enhanced CT examination confirming the presence of a bulky midline cystic lesion in the floor of the mouth/tongue. Origin: Radiology Department, Centro Hospitalar São João, Faculdade de Medicina da Universidade do Porto – Porto/PT
Description: Sagittal non-enhanced CT examination confirming the presence of a bulky cystic lesion in the floor of the mouth/tongue. Origin: Radiology Department, Centro Hospitalar São João, Faculdade de Medicina da Universidade do Porto – Porto/PT
**Description:** Axial non-enhanced CT examination confirming the presence of ectasia of Wharton's ducts (arrows) bilaterally. **Origin:** Radiology Department, Centro Hospitalar São João, Faculdade de Medicina da Universidade do Porto – Porto/PT
Figure 2

Description: Sublingual cystic lesion with heterogeneous content resembling a sack of marbles’ (transverse view). Mylohyoid muscle (*). **Origin:** Radiology Department, Centro Hospitalar São João, Faculdade de Medicina da Universidade do Porto – Porto/PT