

Case Report**Plunging Epidermoid Cyst of the Floor of the Mouth Mimicking a Ranula**

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ABSTRACT

Plunging epidermoid cyst of the floor of mouth is indeed an uncommon entity. A 34-year old Malay gentleman had presented to our centre with a floor of mouth lesion that extended into the submental region. Clinical findings and imaging studies pointed towards the impression of a plunging ranula. Histopathological examination of a completely excised mass via intraoral approach, confirmed the diagnosis of an epidermoid cyst. He was well on follow up with no subsequent recurrence. We discuss the nature of epidermoid cyst and its surgical management.

Keywords: Floor of mouth; Epidermal cyst; Ranula

INTRODUCTION

Epidermoid and dermoid cysts are developmental cystic malformations which are known as dysontogenetic cyst. Epidermoid cysts arise as a result of entrapped ectodermal tissue of the first and second branchial arches, which fuse during the third and fourth week in-utero (1). The incidence of it arising in the floor of the mouth along the midline is less than 0.01% (1,2). We describe the case of an epidermoid cyst which has grown through the mylohyoid muscle resembling a plunging ranula.

CASE REPORT

A 34-year-old gentleman presented to us with a painless, soft swelling of the floor of mouth which had been gradually increasing in size for the past 14 years. He had recently developed difficulty in chewing solid food hence the reason for seeking treatment. Otherwise, he did not have any dysarthria, dysphagia or dyspnoea. There was no previous surgery or trauma to the oral cavity. Intraoral examination revealed a well-defined, 40mm x 30mm cystic swelling on the floor of mouth displacing the tongue posteriorly (Figure 1). Examination of the neck revealed a mobile, non-tender 40mm x 40mm swelling in the submental region (Figure 2). Computed tomographic scan (CT) showed a well-defined cystic lesion measuring 65mm x 35mm arising from the floor of mouth above the mylohyoid muscle, and extending inferiorly into the submental region up to the level of the hyoid bone (Figure 3).

A provisional diagnosis of plunging ranula was made based on clinical and radiologic findings. The cyst was completely excised under general anaesthesia using nasotracheal intubation via an intraoral approach. A horizontal incision was made on the floor of mouth, and the cyst released from its adjacent structures using blunt dissection. The cyst had grown through the mylohyoid muscle, was well encapsulated and contained thick whitish sand-like material. The lingual nerve, hypoglossal nerve, and Wharton's duct were identified and preserved.

Post-operatively, the patient recovered well returning to normal diet within 3 days and to full mastication function within 3 weeks. Histopathologic examination of the excised mass demonstrated a 85mm x 65mm x 40mm cyst lined by true epithelium, containing abundant light brownish lamellated keratin material (Figure 4), confirming the diagnosis of an epidermoid cyst instead of a ranula. No recurrence was noted on subsequent follow-ups.

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Figure 1: Swelling on the floor of the mouth displacing the tongue posteriorly



Figure 2: Submental swelling in the patient thought to be a ranula



Figure 3: Axial view of the CT scan showing the lesion

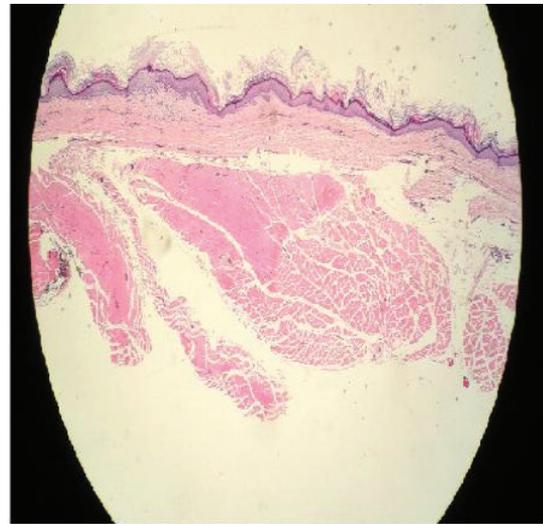


Figure 4: Microscopy of the cyst with true epithelial wall and keratin contents

DISCUSSION

Epidermoid cysts of the floor of mouth are uncommon. They are benign ectoderm-lined inclusion cyst without any dermal appendages, and may be congenital or acquired, although there is no difference between them in terms of histology or clinical presentation. Large intraoral cysts may present with dysarthria, dysphagia, or even dyspnoea in worse cases. Contents of the cyst can be sebaceous, keratinous, purulent or caseous. Although the development of the congenital cysts take place during embryonic life, patients typically present in their 2nd or 3rd decade of life due to the slow growing process and painless nature of these cysts.

Based on Meyer's classification, midline dermoid cysts can be classified histologically into three groups; dermoid cysts, which are cysts with presence of skin appendages, such as hair follicles and sebaceous glands; epidermoid cysts, which have a true squamous epithelial-lined wall; and teratomas, which contain, besides skin appendages, mesodermal elements such as bone and muscle (3,4). Malignant transformation has been reported in the teratoma types at a rate of 5%.

Anatomically, cysts of the floor of the mouth are divided into three groups according to their relation to the muscles of the floor of the mouth: sublingual or median genioglossal cysts, located above the geniohyoid muscles; median geniohyoid cysts, located in the submental region between the geniohyoid and mylohyoid muscles; and lateral cysts, located in the submaxillary region (5).

Salivary retention cyst, also known as ranulas have been well documented in the past to extend into the neck region, making them the plunging variant. However, epidermoid cysts plunging into the neck region is rather uncommon. Hence the differential diagnoses for a swelling in the floor of mouth extending into the sublingual or submental region could be of infective origin, a ranula, cysts or malignant lesions.

In the event that there is airway obstruction, decompression of the cyst with needle aspiration might be necessary, prior to definite surgical excision, which remains the main modality of treatment. Traditionally, intraoral excision is done for smaller cysts and extraoral excision for larger cysts, especially so if they are of the median geniohyoid type or, if the lesion lies under the geniohyoid muscle (6). We managed to remove this relatively large mass purely via intra oral approach, without an external scar and undesirable complications. Lacrimal probes have also been used in the past to cannulate the salivary ducts and reduce the rate of unwanted injury during excision, although it was not necessary in this patient. Epidermoid cysts of the floor of mouth are a rare benign condition. Surgical excision remains the treatment of choice. However, the approach can be it internal or external, must be decided appropriately based on every individual case.

ACKNOWLEDGEMENT

We would like to thank Dr Shafinaz and Dr Fatimah from the Department of Pathology, Hospital Taiping for providing us with the histopathology slides.

REFERENCES

1. Louis PJ, Hudson C, Reddi S. Lesions of Floor of the Mouth. *J Oral Maxillofac Surg* 2002;60:804-7.
2. Sandeep V, Jitendra KK, Sonka AA. Giant sublingual epidermoid cyst resembling plunging ranula. *Natl J Maxillofac Surg* 2012; 3(2): 211-3.
3. Walstad WR, Solomon JM, Schow SR, Ochs MW. Midline cystic lesion of the floor of the mouth. *J Oral Maxillofac Surg* 1998;56:70-4.
4. Baliga M, Shenoy S, Poojary D. Epidermoid cyst of the floor of the mouth. *Natl J Maxillofac Surg* 2014; 5(1): 79-83.
5. Longo F, Maremonti P, Mangone GM, De Maria G, Califano L. Midline (dermoid) cysts of the floor of the mouth: report of 16 cases and review of surgical techniques. *Plast Reconstr Surg* 2003;112:1560-5.
6. Lowry RE, Tempero RM, Davis LF. Epidermoid cyst of the floor of the mouth. *J Oral Surg* 1979; 37:271-3.