

# Giant sublingual epidermoid cyst resembling plunging ranula

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## ABSTRACT

Epidermoid and dermoid cysts represent less than 0.01% of all oral cavity cysts. We describe a rare case of large epidermoid cyst in floor of mouth, with an oral as well as submental component resembling plunging ranula reported in the literature from India. We present a case of a 16-year-old girl with complaints of a mass in sublingual region, difficulty chewing, and dysphagia for about 5 months. Fine-needle aspiration cytology showed keratin flakes and proteinaceous material. Contrast-enhanced CT oral cavity was done and showed 7.0 × 5 × 4.5 cm well-circumscribed non-enhancing cystic mass extending into the floor of the mouth. On examination, a firm swelling was noticed in the submental area, extending down to the thyroid notch. The patient underwent surgical removal of the mass. On histopathology, acidophilic stratum corneum and basophilic dot like staining of stratum granulosum, which is the hallmark of an epidermoid cyst, were seen.

**Key words:** Dermoid cyst, epidermoid cyst, histopathology, ranula, stratum granulosum

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## INTRODUCTION

Epidermoid and dermoid cysts are benign lesions encountered throughout the body, with 7% occurring in the head and neck area and 1.6% within the oral cavity.<sup>[1]</sup> They represent less than 0.01% of all oral cavity cysts.<sup>[2]</sup> The cysts can be defined as epidermoid when the lining presents only epithelium, dermoid cysts when skin adnexa are found, and teratoid cysts when other tissue such as muscle, cartilage, and bone are present.<sup>[3]</sup>

The pathogenesis of the midline cysts of floor of mouth includes dysontogenetic, traumatic, and thyroglossal anomaly. Histologically, Meyer divided the cysts of the floor of the mouth into three groups: epidermoid, dermoid, and teratoid.<sup>[4]</sup> The term "dermoid" is used to indicate all three categories.<sup>[4]</sup> Dermoid cysts occur

primarily in the testes and ovaries, and the most common location in head and neck is external third of the eyebrow.<sup>[4]</sup>

The treatment of dermoid cysts of the floor of mouth is surgical and can be by an intraoral or extraoral route according to the localization and size of the mass.<sup>[5]</sup> Dermoid cysts usually present early in life as an asymptomatic mass and are treated by simple excision. They may reach a large size, involving more than one anatomical area.<sup>[6]</sup> Such swelling in the floor of the mouth can occasionally cause serious problems for swallowing and speaking.<sup>[7,8]</sup>

## CASE REPORT

A 16-year-old female presented with complaints of a mass in oral cavity beneath the tongue and difficulty in chewing and swallowing of solid foods for the past 5 months. The patient had no dyspnea or pain, no previous history of surgery or trauma to the oral cavity or neck. On examination, there was 7 cm × 5 cm sublingual mass that was non-tender, fluctuant, soft, non-mobile, with overlying mucosa showing no secondary changes [Figure 1]. There were no

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Figure 1: Large intraoral sublingual epidermoid mass



Figure 2: Sublingual epidermoid cyst being excised out



Figure 3: CT scan showing large well-circumscribed non-enhancing cystic mass extending into the floor of the mouth



Figure 4: Excised specimen of sublingual epidermoid cyst measuring approx. 7 cm x 5 cm

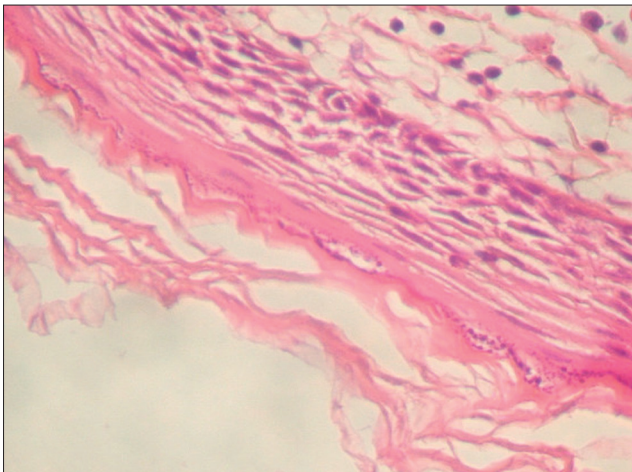


Figure 5: H and E stain 20x showing acidophilic stratum corneum and basophilic dot like staining of stratum granulosum

inflammatory signs or lymphadenopathy associated with the swelling. Mass was displacing the tongue superiorly and posteriorly [Figure 2].

On examination, a soft swelling was also noticed in the

submental area, extending down to the thyroid notch. Fine needle aspiration cytology showed keratin flakes and proteinaceous material. Contrast-enhanced CT was done and showed 7.0 x 5 x 4.5 cm well-circumscribed non-enhancing cystic mass extending into the floor of the mouth. Anteriorly, the lesion is abutting to mandible. Posteriorly, the lesion is abutting the base of tongue and causing compression over anterior wall of the oropharynx. CT features and extension suggested possibility of plunging ranula and thyroglossal cyst [Figure 3].

Under general anesthesia, intraoral incision was given in the floor of the mouth from base of tongue to mandible. Sharp and blunt dissection was done to free the cyst from fibers of mylohyoid muscle. Cyst was removed per oral *in toto* [Figure 4]. The resultant defect was closed in layers after ensuring hemostasis.

The postoperative period was uneventful and the tongue went back to its normal position. On histological examination, acidophilic stratum corneum and

basophilic dot like staining of stratum granulosum were seen. Stratum granulosum is the hallmark of epidermoid cyst. It confirmed the diagnosis of an epidermoid cyst [Figure 5]. The patient did well postoperatively, and no recurrence was noticed at the two-month follow-up.

## DISCUSSION

Epidermoid cysts may be classified as congenital or acquired. Many etiopathogenetical theories have been proposed. Congenital cysts are dysembryogenetic lesions that arise from ectodermic elements entrapped during the midline fusion of the first and second branchial arches between the third and fourth weeks of intrauterine life. Moreover, other authors proposed that midline cysts may represent a variant form of thyroglossal duct cyst.<sup>[4,5,7,9]</sup>

Dermoid cysts are generally diagnosed in young adults in the second and third decades of life,<sup>[5]</sup> although the case presented here is a 16-year-old girl.

The differential diagnosis of sublingual lesions includes ranula, lymphatic malformation, dermoid cyst, epidermoid cyst, and heterotopic gastrointestinal cyst. For this reason, bimanual palpation and conventional radiography are not always sufficient in making differential diagnoses. In these cases, it is necessary to use ultrasonography, CT scan, or MR imaging together with cytology examination by fine-needle aspiration biopsy.<sup>[7]</sup>

CT scan and MR imaging allow more precise localization of the lesion in relationship to geniohyoid and mylohyoid muscles, and enable the surgeon to choose the most appropriate surgical approach, especially for very large- and medium-sized lesions.<sup>[1,5]</sup>

In our patient, the cyst was 7 cm × 5 cm being one of large cyst reported in literature. CT scan showed it to be ranula but histopathology confirmed it to be epidermoid cyst; all the other possibilities of sublingual lesions were ruled out on the basis of histopathology and CT scan. In our patient, we used intraoral approach as the cyst was easily accessible through this route and was easily excised.

Surgical enucleation is the only effective treatment for these kinds of lesions. Several techniques are reported in the literature, which may be divided into intraoral and extraoral techniques depending on which approach is used.<sup>[5]</sup> Extraoral approach is generally preferred in the case of median geniohyoid or very large sublingual cysts, whereas the intraoral approach is typically used for medium-sized sublingual cysts.<sup>[5]</sup>

Prognosis is good, with a very low incidence of relapse. Malignant changes have been recorded in dermoid cysts by New and Erich but not in the floor of the mouth, although a 5% rate of malignant transformation of oral dermoid cysts of the teratoid type has been reported by other authors.<sup>[10]</sup>

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