

Case Series

Giant plunging sublingual dermoid cysts with cervical extension: a case series

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ABSTRACT

Plunging sublingual dermoid cysts with cervical extension are rare developmental lesions that may present as combined intraoral and neck swellings and can pose diagnostic and surgical challenges. We present a case series of five patients with giant plunging sublingual dermoid cysts. The patients, aged 14-50 years, presented with long-standing, painless swellings associated with dysphagia and speech difficulty. Clinical examination revealed floor-of-mouth and cervical swellings, while imaging demonstrated well-defined cystic lesions occupying the sublingual space and extending into the cervical region, with posterior displacement of the tongue. Fine-needle aspiration cytology suggested dermoid or epidermoid cysts. All four patients underwent complete surgical excision through a transcervical approach. Histopathological examination confirmed the diagnosis of dermoid cyst in all cases. Postoperative recovery was uneventful, and no recurrence was observed during the available follow-up period. Giant plunging sublingual dermoid cysts should be considered in the differential diagnosis of cystic swellings of the floor of the mouth with cervical extension. Appropriate imaging is valuable for establishing the extent of the lesion and planning surgery, while complete surgical excision provides favorable clinical outcomes.

Keywords: Dermoid cyst, Plunging dermoid, Sublingual cyst, Floor of mouth, Cervical extension, Transcervical approach

INTRODUCTION

Dermoid cysts are benign developmental lesions that arise from sequestration of ectodermal tissue during embryological fusion. Histologically, they are lined by keratinized stratified squamous epithelium and contain adnexal structures such as sebaceous glands, hair follicles, and sweat glands, which differentiate them from epidermoid cysts.^{1,2}

Dermoid cysts of the head and neck region are uncommon, and intraoral involvement is relatively rare, with the floor of the mouth being the most frequent site.³ Based on their anatomical relationship with the mylohyoid muscle, these

cysts are classified into sublingual, submental, and submandibular types. A plunging dermoid cyst refers to a lesion that originates in the sublingual space and extends beyond the mylohyoid muscle into the submental or submandibular region.^{2,3}

Clinically, sublingual dermoid cysts usually present as slow-growing, painless swellings causing elevation of the tongue. In contrast, plunging variants often present with both intraoral and extraoral swelling, sometimes producing submental fullness or a “double chin” appearance.^{2,4} Unusual presentations, including occurrence in elderly individuals or atypical lateral

extension, have also been reported, further broadening the clinical spectrum of this condition.^{4,5}

As the lesion enlarges, it may result in dysphagia, dysarthria, and, in rare cases, airway compromise.⁴ However, clinical diagnosis can be challenging, as these lesions may mimic other cystic swellings of the floor of the mouth, particularly plunging ranula and epidermoid cysts.⁶

Radiological imaging plays a key role in diagnosis and surgical planning. Magnetic resonance imaging (MRI) and computed tomography (CT) help define lesion extent and its relationship with the mylohyoid muscle.^{2,4} Complete surgical excision remains the treatment of choice, with the approach determined by lesion size and anatomical extension.^{2,3}

CASE SERIES

Case 1

A 16-year-old female presented with a progressively enlarging neck swelling associated with dysphagia for the past 6 years (Figure 1). The swelling was painless and showed no signs of inflammation. On examination, transillumination test was negative. Contrast-enhanced CT scan revealed a large, well-circumscribed cystic lesion causing posterior displacement of the tongue (Figure 2). Fine needle aspiration cytology (FNAC) suggested features of an epidermal inclusion cyst. The lesion was completely excised via an external approach (Figure 3). Histopathological examination confirmed the diagnosis of a dermoid cyst.

Case 2

A 50-year-old male presented with a long-standing history of neck swelling and difficulty in swallowing for 8 years, with gradual increase in size over time. MRI of the neck demonstrated a well-defined cystic lesion measuring approximately 44×46×57 mm in the sublingual space (Figure 4). The lesion appeared hyperintense on T2-weighted and short tau inversion recovery (STIR) images and hypointense on T1-weighted images, with homogeneous internal debris and septations. FNAC findings were suggestive of a dermoid cyst. Following complete preoperative evaluation, the patient underwent surgical excision of the cyst via a transcervical approach (Figure 5). The intraoperative and postoperative periods were uneventful.

Case 3

A 19-year-old male presented with complaints of dysphagia and difficulty in speech for 4 years (Figure 6). MRI revealed a well-circumscribed, thick-walled cystic lesion with internal septations, causing posterior displacement of the tongue (Figure 7). FNAC suggested an epidermal inclusion cyst. Complete surgical excision was

performed via a transcervical approach (Figure 8). The postoperative course was uneventful.



Figure 1: (A) Sublingual dermoid (black arrow) pushes tongue (green arrow) posteriorly; (B) clinical picture of submental plunging dermoid cyst as double chin appearance.

Case 4

A 14-year-old female presented with a swelling in the floor of the mouth extending into the cervical region. Clinically, the lesion mimicked a plunging ranula; however, transillumination test was negative. The cyst was completely excised via an external approach. Histopathological examination confirmed a dermoid cyst.

Case 5

A 28-year-old male presented with a painless, gradually progressive swelling in the submental region for 5 years (Figure 9). The swelling was not associated with pain, dysphagia, or respiratory difficulty but caused cosmetic concern and mild speech discomfort. MRI showed a hyperintense lesion on T2-weighted images with internal

heterogeneity, suggestive of a dermoid cyst. The patient underwent complete surgical excision via an external (submental) approach. Histopathological examination revealed a cyst lined by keratinized stratified squamous epithelium with adnexal structures, confirming the diagnosis of a dermoid cyst (Figure 10).

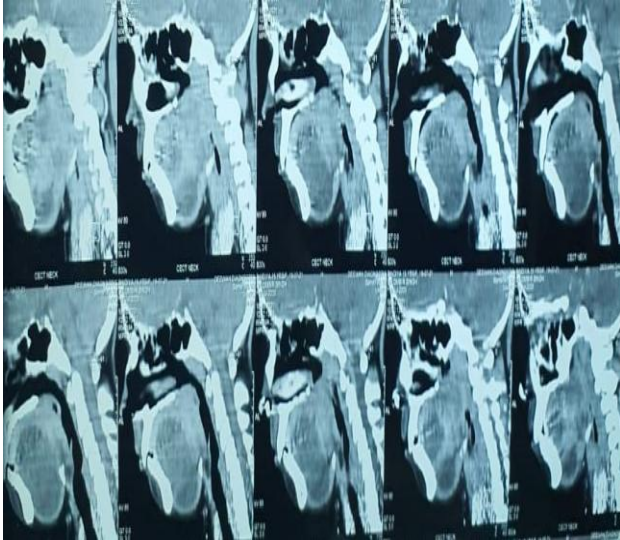


Figure 2: CT scan (sagittal views) showing a large, well-circumscribed, non-enhancing cystic mass occupying the sublingual space with extension into the submental region. The lesion causes superior displacement of the tongue and demonstrates features suggestive of a dermoid cyst.



Figure 3: Intraoperative photograph showing a large plunging dermoid cyst in the submental/submandibular space.

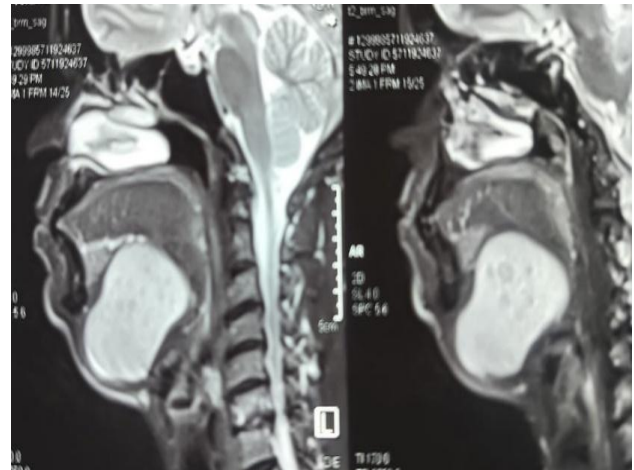


Figure 4: Sagittal MRI images showing a large, well-circumscribed cystic mass in the sublingual space with inferior extension into the submental region. The lesion appears hyperintense on T2-weighted sequences with internal heterogeneity, suggestive of a dermoid cyst.



Figure 5: Intraoperative photograph showing dermoid cyst in the submental and submandibular space exposed via transverse cervical incision.



Figure 6: External appearance of plunging dermoid.

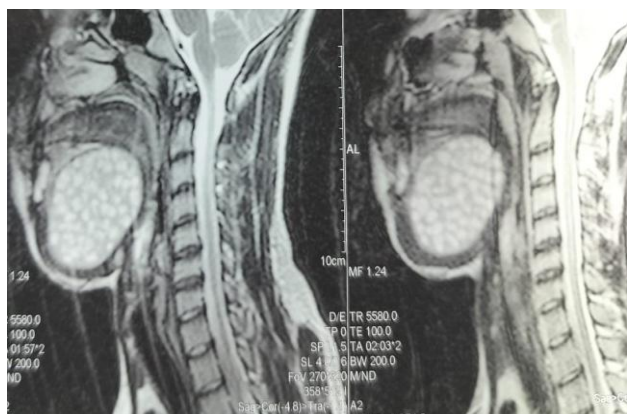


Figure 7: Contrast MRI neck sagittal view showed altered signal intensity lesion of size 83x80x56 mm in submental area.



Figure 8: Excised dermoid cyst specimen.



Figure 9: Intraoral photograph showing a well-defined, dome-shaped swelling on the ventral surface of the tongue, causing elevation of the tongue. The overlying mucosa appears smooth and stretched with visible superficial vessels. Findings are consistent with a cystic lesion of the floor of the mouth, later confirmed as a dermoid cyst on histopathological examination.

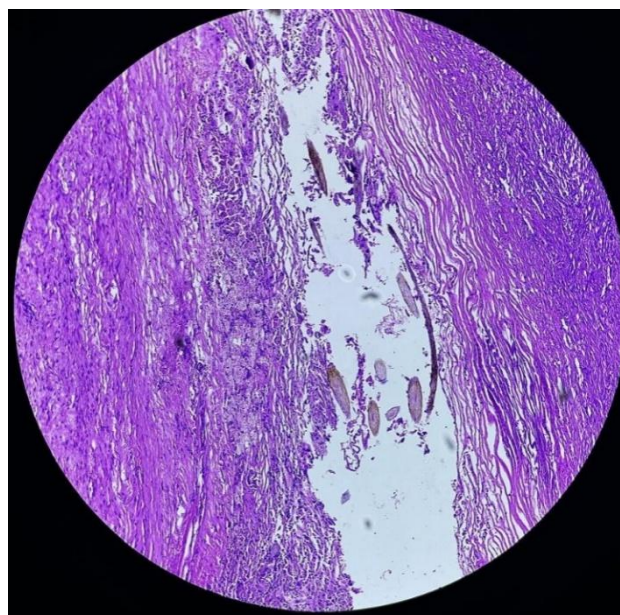


Figure 10: High-power view (100× H&E staining); Higher magnification photomicrograph demonstrating the cyst lumen filled with laminated keratinous debris and hair shaft fragments. The lining epithelium is keratinized stratified squamous type, and the wall shows adnexal structures, confirming the diagnosis of a dermoid cyst.

DISCUSSION

Plunging dermoid cysts are rare lesions characterized by extension of a sublingual dermoid cyst into adjacent cervical spaces through or around the mylohyoid muscle. Their pathogenesis is primarily attributed to embryological inclusion of ectodermal elements during midline fusion, although acquired forms secondary to trauma have also been described.²

The clinical presentation depends on the size and anatomical extent of the lesion. While lesions confined above the mylohyoid muscle present as intraoral swellings, plunging dermoid cysts typically manifest with both intraoral and cervical components.^{2,4} The extraoral component may resemble other neck masses, leading to diagnostic uncertainty. Large lesions may cause functional impairment, including difficulty in speech, mastication, and swallowing, and rarely airway compromise.⁴

A major diagnostic challenge is differentiating plunging dermoid cysts from plunging ranula and other cystic lesions. Epidermoid cysts, in particular, may closely mimic plunging ranula, as demonstrated by Sahoo et al, where concurrent cysts in the sublingual and submental regions presented with similar clinical features.⁶ Similarly, lateral dermoid cysts may present in an atypical manner and resemble plunging ranula, further complicating diagnosis.⁵

Imaging plays an important role in evaluation. MRI provides excellent soft tissue contrast and helps delineate lesion extent, while CT imaging may demonstrate characteristic features such as areas of fat attenuation.^{2,4} Despite these findings, imaging alone may not always be definitive, and histopathological confirmation is essential.

Histopathological examination remains the gold standard for diagnosis. The presence of adnexal structures within the cyst wall confirms a dermoid cyst, whereas their absence indicates an epidermoid cyst.^{1,6} This distinction is important for accurate classification and reporting.

Surgical excision is the definitive treatment. Traditionally, large plunging dermoid cysts have been managed through an extraoral approach; however, several studies have demonstrated successful excision via an intraoral route, even for large lesions, thereby avoiding external scarring and reducing morbidity.^{2,3,5} The choice of approach should be individualized based on lesion size, anatomical extension, and surgeon expertise. Complete excision is essential, as recurrence is uncommon.

Although malignant transformation is extremely rare, it has been reported in long-standing lesions.² Overall, plunging dermoid cysts have an excellent prognosis following complete surgical removal.

CONCLUSION

Plunging dermoid cysts are rare developmental lesions of the floor of the mouth that may mimic plunging ranula and other cystic neck masses. Accurate diagnosis requires careful clinical evaluation, imaging, and histopathological confirmation. This case series highlights their diverse presentations and diagnostic challenges. Complete surgical excision, tailored according to lesion extent, provides excellent outcomes with minimal recurrence and favorable functional and cosmetic results.

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REFERENCES

1. Safwan M, Godbole AA, Médéus AJR, García-González OY, Sanker V, Prashanth PSSS, et al. Unusual giant plunging sublingual epidermoid cyst: a case report and review of literature. *Clin Case Rep.* 2024;12:e9067.
2. Aydın S, Demir MG, Demir N, Şahin S, Kayıpmaz ŞS. A giant plunging sublingual dermoid cyst excised by intraoral approach. *Case Rep Otolaryngol.* 2016;2016:8064827.
3. Garg U, Batra R, Garg MK. Plunging sublingual dermoid: intraoral excision. *Egypt J Ear Nose Throat Allied Sci.* 2014;15(1):49-52.
4. Gaikwad TV, Mishra SS, Maini AP, Das S, Sarma A. A unique case of plunging dermoid cyst in an elderly male: a case report. *Cureus.* 2023;15(10):e45341.
5. Abdulai AE, Avogo D, Nuamah IK, Baddoo H, Gyasi RK. Large lateral dermoid cyst mimicking plunging ranula: a case report and intraoral approach to surgical management. *Int J Case Rep Images.* 2014;5:806-10.
6. Sahoo RK, Sahoo PK, Mohapatra D, Subudhi S. Two concurrent large epidermoid cysts in sublingual and submental region resembling plunging ranula: report of a rare case. *Ann Maxillofac Surg.* 2017;7(1):155-8.

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