

Epidermoid Cyst of Floor of the Mouth: A Rare Entity

Praveen K Pandey¹, Swatee Agarwal², Gaurav Chandra³, Sujeet Singh⁴, Amartya P Srivastava⁵, Durga P Soni⁶

Received on: 09 July 2024; Accepted on: 30 July 2024; Published on: 31 August 2024

ABSTRACT

Dermoid and epidermoid cysts, originating from ectodermal tissue, are benign, slowly growing developmental cysts that can appear anywhere in the body. Just 1.6% of these cysts occur in the oral cavity and less than 7% of them impact the head and neck area. Three histological variations of dermoid cysts that Meyer revised and described in 1955 are the teratoid variant, epidermoid cysts, and dermoid cysts. The ectodermal tissue of the first and second branchial arches which gets entrapped might fuse during the third and fourth weeks of pregnancy and may lead to the development of a midline epidermoid cyst in the floor of the mouth. The sublingual, submaxillary, and submandibular areas are the sites of development, the floor of the mouth being an uncommon location for this condition. A slow-growing intraoral dermoid cyst may increase and obstruct speech or deglutition, or it may represent a compromise to the airway and necessitate prompt surgical surgery. We document a case of a 23-year-old female with an epidermoid cyst clinically appreciable as a large sublingual swelling obstructing swallowing and speech. An intraoral approach was used to surgically incise the pathology.

Keywords: Case report, Dermoid cysts, Epidermoid cyst, Floor of the mouth, Non-odontogenic cysts.

Dental Journal of Advance Studies (2024): 10.5005/djas-11014-0050

INTRODUCTION

Embryonic lateral mesenchymatic mass mainly from the first and second branchial arch fail to unite and the result is the tissue inclusion from various sources (ectoblastic, mesoblastic, or endoblastic) which in turn causes the development of dermoid cysts in 5th week of embryological development.¹

About 60% of patients with Gardner's syndrome and hereditary familial polyposis can have dermoid cysts and epidermoid cysts. The face, scalp, arms, and legs are the areas where cysts are most commonly observed in these situations. Both dermoid and epidermoid cysts have a limited malignant transformation rate of 5% only. Cases have been reported in the head and neck, ovaries, and cerebral and lumbar regions.²⁻⁵

The child's hyoid bone is typically attached to dermoid cysts, which are soft, non-fluctuating structures on the floor of the mouth. The adult floor of the mouth cyst is situated in the space between the mylohyoid and geniohyoid muscles. It causes slurred speech, trouble swallowing, and an upward shifting of the tongue. If the cyst is present in between the mylohyoid muscle and cutaneous neck muscles, it is known as geniohyoid cyst which causes outward displacement and double chin.⁶

The three histological variations of the dermoid cyst that Meyer revised and described in 1955 are the teratoid type, true dermoid type, and epidermoid type.⁷ Real dermoid cysts are cavities with recognizable skin on the cyst wall and epithelium exhibiting keratinization. Epidermoid cysts are lined by simple squamous epithelium with a fibrous wall and no connected structures. Teratoid cyst linings range in appearance from ciliate respiratory epithelium with ectoderm, mesoderm, and/or endoderm derivatives to simple squamous. A greasy-looking substance is present in all three histological categories.

Either an intraoral or an extraoral surgical approach may be utilized to treat an epidermoid cyst involving the base of the mouth, depending mainly on the size and site of the lesion.

^{1,2,4-6}Department of Oral and Maxillofacial Surgery, Chandra Dental College and Hospital, Safedabad, Barabanki, Uttar Pradesh, India

³Department of Prosthodontics, Chandra Dental College and Hospital, Safedabad, Barabanki, Uttar Pradesh, India

Corresponding Author: Swatee Agarwal, Department of Oral and Maxillofacial Surgery, Chandra Dental College and Hospital, Safedabad, Barabanki, Uttar Pradesh, India, Phone: +91 9897501856, e-mail: swats_grv@rediffmail.com

How to cite this article: Pandey PK, Agarwal S, Chandra G, *et al.* Epidermoid Cyst of Floor of the Mouth: A Rare Entity. *Dent J Adv Stud* 2024;12(2):115-117.

Source of support: Nil

Conflict of interest: None

Patient consent statement: The author(s) have obtained written informed consent from the patient for publication of the case report details and related images.

CASE DESCRIPTION

We document here a case of a 23-year-old female patient who came to our department with the problem of swelling in her mouth under the tongue and difficulty in swallowing and speech for the past 2 years. She had not observed any increase in the size of the cyst in the past 2 years. On extraoral examination, there was swelling in submental area presenting as a double chin. There was no sign of cervical lymphadenopathy. On intraoral examination, a huge swelling of the submental, submandibular, and sublingual areas measuring 3 × 3 cm² in diameter (Figs 1 and 2) was noticed. The lesion was painless, with normal mucosa of the floor of the mouth and well adhering to the deep planes. The tongue was displaced upward. The growth shifted upward on applying pressure in the submental area.

Aspiratory puncture was performed with the tentative diagnosis of ranula. This demonstrated the existence of desquamated



Fig. 1: Clinical presentation of epidermoid cyst

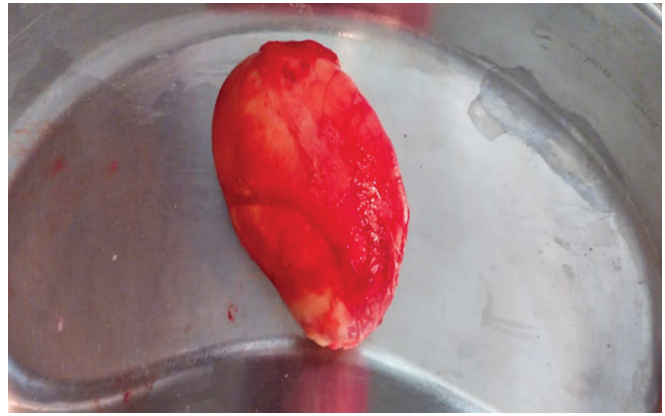


Fig. 3: Excised epidermoid cyst



Fig. 2: Macroscopic presentation of the cyst



Fig. 4: Closure done



Fig. 5: Postoperative view

tissue, cellular debris, and epithelial remains, suggesting a new epidermoid cyst diagnosis theory. The cyst was completely removed through surgical excision (Figs 3 and 4). The floor of the mouth was incised elliptically, and then the tissue was bluntly dissected. The postoperative phase went without incident (Fig. 5). Histopathology was performed for the excised lesion which confirmed the epidermoid cyst.

DISCUSSION

Pathologic diseases are mainly characterized as neoplastic, developmental, inflammatory, or obstructive, in origin which can affect the floor of the mouth and submandibular area. Prior to the patient seeking medical attention, lesions in this region may exist for an extended duration, typically due to difficulties in speaking or swallowing. In particular, dermoid cysts, lipomas, branchial cleft cysts, and thyroglossal duct cysts are the most occurring intraoral lesions of the oral soft tissues that occur on the floor of the mouth. Lesions in the head and neck region are uncommon, accounting for just 7% of cases. Dermoid and epidermoid variants account for only 0.01% and 1.6% of oral cysts, respectively.⁸⁻¹¹

Yilmaz et al.¹¹ reported that epidermoid cysts are much more frequent compared to dermoid cysts while some studies report similar distribution between genders, at 15–35 years of age predilection.¹¹⁻¹⁴ These lesions have been reported in 7-month to 77-year-old patients suggesting a wide variation in the affected age-group.⁹

Their clinical picture depends on their size which varies between 1 and 5 cm and their anatomical location.¹⁵

Epidermoid cysts affecting the floor of the mouth present as asymptomatic nodules but lips and tongue regions might also be

involved.^{3,4,10,14,16} Submental protrusion or tongue elevation or both may be seen. They mainly affect youngsters, presenting in midline or laterally as soft to rubbery swellings.

Histologically stratified squamous epithelium is seen. In the absence of dermal attachments, the lesion is called epidermoid whereas if associated with sweat glands, sebaceous glands, and hair follicles, the cyst is classified as dermoid.

Based on the size and location of the cyst, either an intraoral or extraoral surgical approach is considered.^{3,4,10} For small sublingual cysts, approach intraorally, if they present above the mylohyoid muscle, wherein extraoral approach is utilized in case of large cysts below the muscle.^{3,4} The fibrous capsule around the cyst facilitates enucleation and limits its recurrence.¹⁶

CONCLUSION

The floor of the mouth has never been an easy site to diagnose or treat lesions in that area. The spectrum of lesions observed in this area encompasses mucocele to cancer, thus it is advisable to do an investigation using current modalities prior to making a final diagnosis and undergoing surgery. Infections can travel through tightly netting critical structures all the way to the mediastinum, which increases morbidity and death in these situations.

The oral cavity rarely presents with an epidermal cyst. In our case, the clinical presentations of the lesion were in sync with the available cited literature.

REFERENCES

1. Containment P. Medical-Encyclopedie chirurgicale-E-20-860-A-10. Paris: Elsevier; 2000. Congenital fistulas and cysts of the neck.
2. Sahoo RK, Sahoo PK, Mohapatra D, et al. Two concurrent large epidermoid cysts in sublingual and submental region resembling plunging ranula: Report of a rare case. *Ann Maxillofac Surg* 2017;7:155–158. DOI: 10.4103/ams.ams_50_15.
3. Sahoo NK, Choudhary AK, Srinivas V, et al. Dermoid cysts of maxillofacial region. *Med J Armed Forces India* 2015;71:S389–S394. DOI: 10.1016/j.mjafi.2013.11.004.
4. Brunet-Garcia A, Lucena-Rivero ED, Brunet-Garcia L, et al. Cystic mass of the floor of the mouth. *J Clin Exp Dent* 2018;10:e287–e290. DOI: 10.4317/jced.54604.
5. Tandon PN, Gupta DS. Epidermoid cyst in the floor of mouth with submental component. *J Maxillofac Oral Surg* 2014;13:59–62. DOI: 10.1007/s12663-010-0098-4.
6. Neville BW, Damm DD, Allen CM, et al. *Oral and maxillofacial pathology*. 2nd ed. Philadelphia: Saunders; 2002.
7. Meyer I. Dermoid cysts (dermoid) of the floor of the mouth. *Oral Surg Oral Med Oral Pathol* 1955;27:1149–1164. DOI: 10.1016/0030-4220(55)90380-7.
8. Longo F, Maremonti P, Mangone GM, et al. Midline (dermoid) cysts of the floor of the mouth: Report of 16 cases and review of surgical techniques. *Plast Reconstr Surg* 2003;112:1560–1565. DOI: 10.1097/01.PRS.0000086735.56187.22.
9. Katabi N, Lewis JS. Update from the 4th Edition of the World Health Organization Classification of Head and Neck Tumours: What Is New in the 2017 WHO Blue Book for Tumors and Tumor-Like Lesions of the Neck and Lymph Nodes. *Head Neck Pathol* 2017;11:48–54. DOI: 10.1007/s12105-017-0796-z.
10. Hill CM, Renton T. Oral surgery II: Part 3. Cysts of the mouth and jaws and their management. *Br Dent J* 2017;27:573–584. DOI: 10.1038/sj.bdj.2017.916.
11. Yilmaz I, Yilmazer C, Yavuz H, et al. Giant sublingual epidermoid cyst: A report of two cases. *J Laryngol Otol* 2006;120:E19. DOI: 10.1017/s0022215106009194.
12. King RC, Smith BR, Burk JL. Dermoid cyst in floor of the mouth. Review of the literature and case reports. *Oral Surg Oral Med Oral Pathol* 1994;78:567–576. DOI: 10.1016/0030-4220(94)90166-x.
13. Al-Khateeb TH, Al-Masri NM, Al-Zoubi F. Cutaneous cysts of the head and neck. *J Oral Maxillofac Surg* 2009;67:52–57. DOI: 10.1016/j.joms.2007.05.023.
14. Derin S, Koseoglu S, Sahan L, et al. Giant dermoid cyst causing dysphagia and dyspnea. *J Craniofac Surg* 2016;27:e260–261. DOI: 10.1097/SCS.0000000000002476.
15. Min HJ, Lee JM, Han JK, et al. Influence factor in thickness of cyst wall of epidermal cysts. *J Craniofac Surg* 2017;28:e369–372. DOI: 10.1097/SCS.0000000000003687.
16. Gordon PE, Faquin WC, Lahey E, et al. Floor-of-mouth dermoid cysts: Report of 3 variants and a suggested change in terminology. *J Oral Maxillofac Surg* 2013;71:1034–1041. DOI: 10.1016/j.joms.2012.12.008.