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Case Report

Epidermoid cyst of floor of mouth

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ABSTRACT

Epidermoid cysts are developmental malformations which are soft, mobile and slow-growing masses and they are unattached to the overlying skin. The most common cervical location of these cysts is the floor of the mouth without any gender predilection. The following report presents a case on epidermoid cyst and its management and a discussion on various differential diagnoses. This report presents a case with a painless swelling over the floor of mouth with dysphagia, dysarthria and orthopnea. Thorough history and examination of the swelling was done. Preoperative assessment was made with CT imaging. Complete surgical excision of the mass was done via intraoral approach under general anaesthesia with an uneventful recovery period. Swellings over the floor of mouth can be congenital, infectious, inflammatory or tumours. Preoperative evaluation can be done by taking thorough history, examination and radiological imaging. Surgical excision is the treatment of choice for epidermoid cysts with approach based on its relation with the mylohyoid muscle.

Keywords: Epidermoid cyst, Dermoid cyst, Floor of mouth

INTRODUCTION

Swellings in the floor of mouth and submandibular area may be due to different pathologies such as inflammation, developmental anomalies, cysts and neoplasms.[1] Cysts can be epidermoid, dermoid or teratomatous.[2] 1.6 to 6.9% patients of cysts of head and neck are epidermoid and dermoid.[3] Epidermal cysts are asymptomatic, slow-growing, mobile, rare, congenital anomalies of mesodermal and ectodermal origin without any gender predilection.[3,4,5] Floor of the mouth, being the most common cervical location, they do not have any association with the hyoid bone, thus do not move on the protrusion of the tongue.[4]

Three histological varieties have been described by Meyer; namely, epidermoid, true dermoid and teratoid/complex. Epidermoid cyst has simple squamous epithelium lining only, while true dermoid cyst, in addition, contains skin appendages and teratoid cyst possesses simple squamous to ciliated epithelium lining along with structures derived from all 3 germ layers.[1]

In following case report, we present a case of epidermoid cyst of the floor of the mouth and its management and a discussion on similar cases elsewhere along with various differential diagnosis of such swellings.

CASE REPORT

A 32-year-old male from Rangapara, Sonitpur presented with a painless intraoral swelling, which was initially small and increased in size over a duration of 3 years. The patient also had dysphagia and dysarthria for 1 year

and orthopnea for 2-3 months. Oral cavity examination showed a globular swelling of diameter around 6 cm occupying the whole of the floor of mouth, pushing the tongue upward and backward. The surface of the swelling was smooth with normal overlying mucosa without any pulsation. The patient was unable to protrude his tongue. The swelling was compressible but not reducible. On bimanual palpation a mobile, non-tender mass with soft doughy consistency was felt. Neck examination revealed a well circumscribed swelling of around 4cm×3cm×2cm in submental region with a smooth surface and regular margin. The skin over the swelling was normal. A contrast enhanced CT scan showed a well-defined, thin-walled, non-enhancing, cystic lesion measuring approximately 6.9×6.7×7.2 cm in sublingual space with posterior displacement of the tongue, suggesting simple ranula. Owing to the course of disease and the absence of pain, dental caries and lymphadenopathy, infective and malignant lesions were ruled out. The mass was excised via intraoral approach with an incision made on the floor of mouth under general anaesthesia, where fibreoptic bronchoscopic assisted nasotracheal intubation was done. Histopathological examination showed a cystic structure lined by squamous epithelium with loose and edematous wall containing congested blood vessel, which was suggestive of epidermoid cyst. Recovery was uneventful.

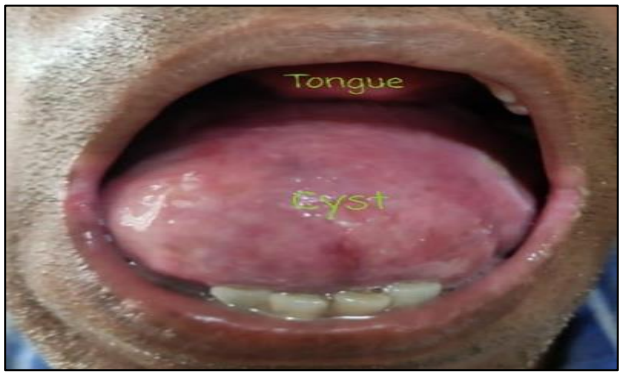

Figure 1: Swelling over floor of mouth with tongue pushed upward and backward.

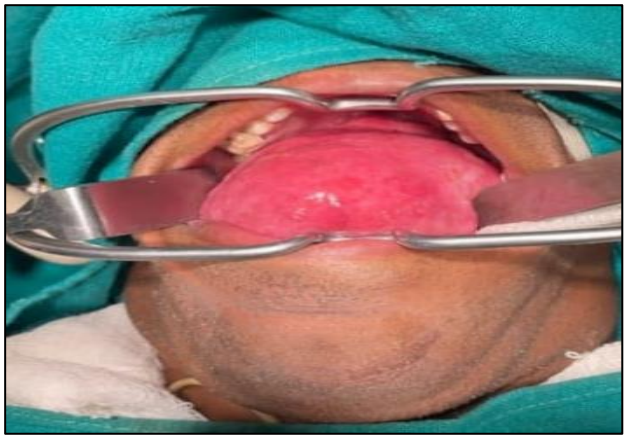

Figure 2: Lips and bilateral cheeks retracted for exposure of the cyst.

Figure 3: Fibreoptic bronchoscopic picture.

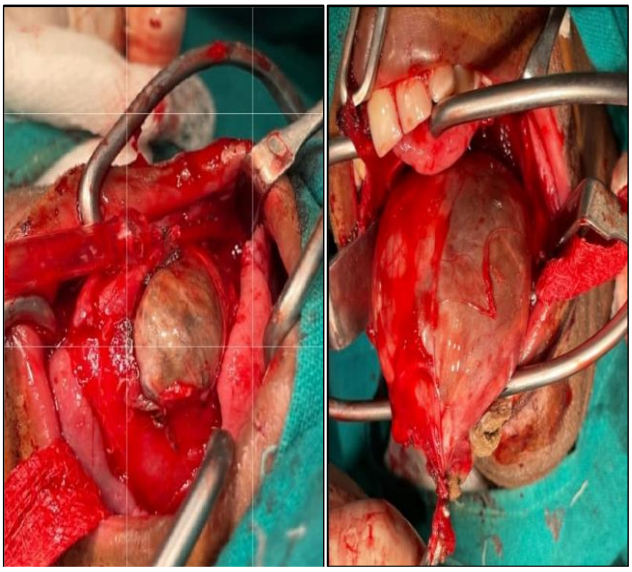

Figure 4: Intraoperative steps showing dissection of the cyst intraorally.

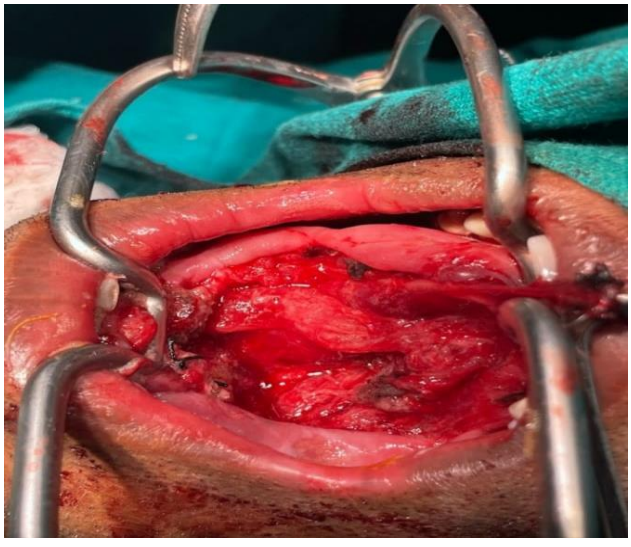

Figure 5: Floor of mouth after cyst excision.

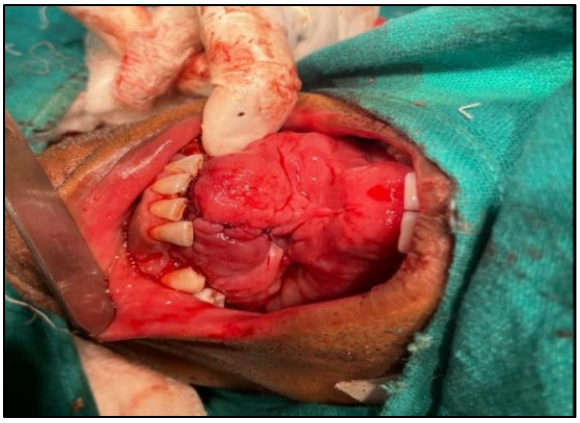

Figure 6: Floor of mouth after repair.

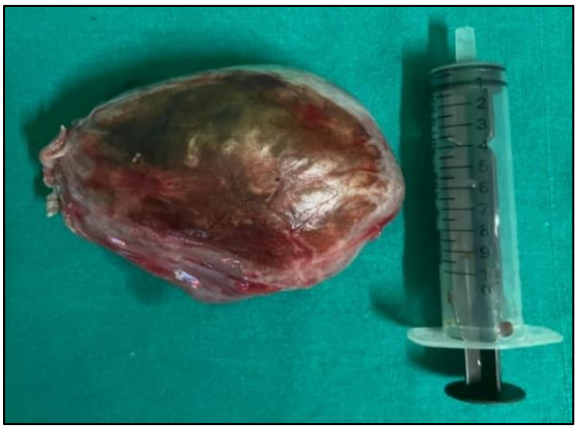

Figure 7: Specimen of excised cyst sent for HPE.

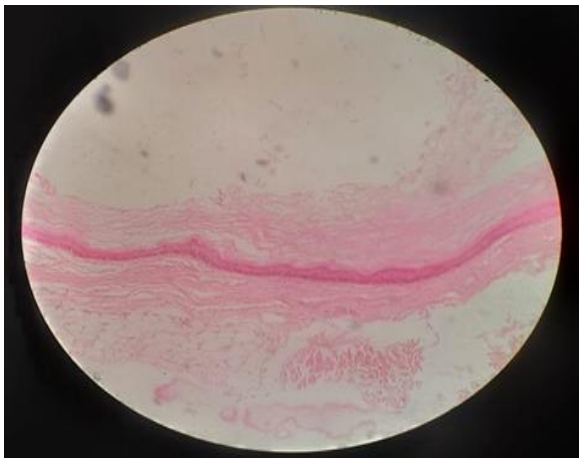

Figure 8: Histopathological examination showing cystic structure lined by squamous epithelium with loose and edematous wall containing congested blood vessel (H and E staining with 10X magnification).

DISCUSSION

A case series from Greece presented two such cases in a 14 year and a 35-year-old, both females. The former had an intra oral, soft, painless swelling for 10 months which gradually increased in size without any neck mass. A contrast CT showed the origin to be in the sublingual space, extending into the floor of mouth and aspiration from the swelling showed epithelial remnants. Complete surgical excision was done through the oral cavity, followed by histopathological examination. The latter had a neck and an intraoral swelling on left side for 6 months with dysphagia, dysarthria and dyspnea on exertion. Tenderness was elicited. A contrast CT in this case showed submandibular space to be the origin and FNAC was non-diagnostic. Surgical excision was done via external approach in the submandibular region. However, histopathology in both the cases revealed epidermoid cyst. Follow up was done upto 3 years and no signs of recurrence was noted.[3]

Another case series from Italy presented 16 cases over a duration of 10 years which presented with painless swellings over the floor of mouth and dysphagia, dysphonia and dyspnea. Age group ranged from 5 to 51 years with a male preponderance. Radiological and cytological diagnosis was made preoperatively and confirmed by post operative histopathological examination, which showed epidermoid cyst in 14 and dermoid cyst in 2 cases. FNAC was found to be 100% sensitive in the study. Surgical approaches were via submental, median glossotomy and extended median glossotomy done under general anesthesia. Rhinotracheal intubation was done in intraoral approaches. 10 cysts were located above the geniohyoid muscle and 6 were between the geniohyoid and the mylohyoid muscles. No relapse or malignant changes were found during the follow up period of an average of 6 years.[6]

New and Erich, in a review of 1,495 cases of dermoid cysts, found only 6.94% to be in the head and neck region, with the most common site being floor of the mouth in 11% of the cases. There was no age bar, although a peak is seen between 15 and 35 years with no gender predilection.[7]

Based on the position of the swelling in relation to the mylohyoid and genioglossus muscles, dermoid cysts can be divided into supra-mylohyoid (intraoral or sublingual), infra-mylohyoid (cervical) and peri- or trans-mylohyoid. Cysts located above mylohyoid and genioglossus muscles present as swelling in the floor of the mouth and are termed as ‘supra-mylohyoid’, while those between mylohyoid and geniohyoid present as swelling below the chin and are called ‘infra-mylohyoid’ or “double chin”. When a cyst is both intraoral and cervical, it is ‘peri- or trans-mylohyoid’.[1]

The macroscopic section of an epidermal cyst is often described as “pearly tumour” due to the character of ‘dry keratin’, which is smooth, shiny and waxy. Microscopically, it has a thin squamous epithelial lining with rare calcifications and contains keratin, cholesterol and desquamating epithelial debris.[8]

A wide range of differential diagnosis should be kept in mind and needs to be ruled out. Some of them are discussed below.

A slow-growing benign tumour with 1% of intraoral incidence is lipoma, which is most common in the cheek, followed by floor of mouth.[9]

Choristomas of head and neck are heterotopic gastrointestinal cysts in the sublingual area, but are lined by gastric mucosa. They have a male preponderance. [9]

Another differential is branchial cleft cyst, which is a developmental anomaly arising from incomplete closure of branchial arches. They are also soft fluctuant swellings, but more common anterior to the sternocleidomastoid muscle. [9] Remnants of embryonic thyroid present as thyroglossal duct cysts in the midline in contact with the hyoid bone and moves during swallowing.[9] These anomalies have a silent course and thus the age at presentation makes their diagnosis indecisive.

Cystic hygroma and few vascular malformations are congenital lesions in the neck which comes under our differential diagnoses, when extends to the floor of mouth. They are most common during childhood and 90% of cystic hygromas are diagnosed by 2 years of age.[9]

Swelling in the floor of mouth extending from submandibular region can also be due to the chronicity of infections or inflammation of perioral tissues, most commonly odontogenic infections. However, the chronicity and clinical presentations of acute infections like fever, malaise, tenderness on palpation rules out the possibility of epidermoid cyst. Reactive or granulomatous lymphadenitis of submandibular or submental region can also be a differential diagnosis.[9]

Another entity which needs to be considered is a spectrum of salivary gland disorders, ranging from ranula to inflammatory lesions to neoplasms. They can be present intraorally or in the submandibular region. Ranula, occurring more commonly in children and young adults, is bluish in colour and a recurrent disease. Both acute and chronic sialadenitis are more prevalent in the elderly age groups with no gender predilection. But they have associated symptoms of pain and discharge from Wharton's duct in acute disease and several remissions and exacerbations in the chronic stage. Although benign tumours of salivary glands are painless and slow-growing, those in the floor of mouth are usually malignant with features like rapid growth, fixity to adjacent structures and mucosal ulceration.[9] However, malignant transformation of sublingual dermoid and epidermoid cysts are rare.

Complete surgical removal of the cyst by meticulous dissection is the treatment of choice. The cysts superior to mylohyoid muscle, as in our case, are excised via intraoral approach while, those occurring below the muscle require an extraoral approach. After complete excision, recurrence is unlikely.

CONCLUSION

Swelling on the floor of mouth has been a challenging site for diagnosis and management. A case of epidermoid cyst was diagnosed and treated effectively with imaging techniques. Surgical excision is the treatment of choice with intraoral approach in cysts lying above mylohyoid muscle and external approach in those lying below it. Differential diagnosis includes congenital lesions, infections, tumors and mucous extravasation cysts. Recurrence after complete surgical excision and malignant transformation are rare.

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