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Case Series

Epidermoid Cyst Presenting As Plunging Ranula – A Rare Presentation of Two Cases

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Abstract

Background: Epidermoid cyst of a floor of mouth is very rare comprising less than 0.01% of oral cavity cysts. The occurrence of such a cyst presenting similarly to a plunging ranula is very uncommon and can pose a clinical dilemma in management.

Clinical Description: We describe a 16-year-old girl and a 19-year-old boy who presented with a painless smooth mucosa covered cystic swelling in the floor of mouth which was slowly increasing in size, on examination it was found to be contiguous with right level 1b region swelling.

Management and Outcome: Complete surgical excision of cyst was done by trans oral route. The maximum dimension of both cyst was over 5cm. The patients are currently under follow-up with no evidence of disease.

Conclusions: A cystic swelling in the floor of the mouth predominantly points to a ranula and the occurrence of congenital cysts in floor of mouth should be kept in mind. Marsupialization as the choice of treatment in floor of mouth cystic lesion should not be considered especially in an unproven cyst. Complete excision of an epidermoid cyst can give an excellent cure with negligible recurrence.

Keywords: Epidermoid Cyst; Ranula; Floor of mouth; Cysts; Transoral Excision

Introduction

Epidermoid and dermoid cysts are benign lesions which are found throughout the body, with an incidence of 7% in head and neck region. They represent less than 0.01% of all oral cavity cysts [1].

The treatment of such cysts of the floor of mouth (FOM) would be a complete surgical excision which can be done by intraoral or extraoral route according to the location and size of the mass [2].

Such swelling in the FOM, when involving more than one anatomical area, can occasionally cause serious problems such as difficulty in swallowing, speaking and compromise to airway [3-6].

Case History

Case 1

A 16-year-old female presented a painless gradually progressive mass in right side FOM for 5 years. It was associated with foreign body sensation on chewing food. Oral examination showed a

smooth mucosa covered nontender, 4cm diffuse single cystic swelling on the right side FOM reaching up to right submandibular region on bidigital palpation (Figure 1a).

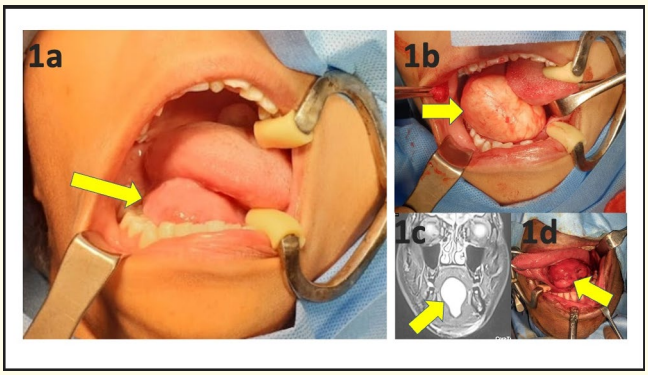

Figure 1: Showing, 1a– Mucosa covered cystic swelling in floor of mouth (Case 1), yellow arrow pointing towards swelling; 1b - Dissection of thick and pale yellow cyst reaching midline, Yellow arrow (Case 1); 1c - Dissection of thick and pale yellow cyst reaching midline, Yellow arrow (Case 2); 1d – MRI of case 2 showing cystic lesion extending to sublingual space, Yellow arrow.

Ultrasonogram (USG) showed a well-defined isoechoic lesion with no internal vascularity noted involving sublingual space on right side, major component of cyst was over mylohyoid muscle.

Management and outcome

Surgery was done under general anaesthesia with nasal intubation, cyst was approached trans orally. Single linear incision was made on the right side FOM parallel to submandibular duct not crossing the midline, submandibular duct was pushed superiorly by the cyst. Complete cyst was mobilized by blunt dissection, cyst wall was thick and pale yellow in colour, and was reaching midline (Figure 1b). It was extending deep to mylohyoid muscle. The cyst was excised in toto preserving the right submandibular duct, lingual nerve. Defect was closed in layers without additional drain placement. Her post operative period was uneventful with modest edema in FOM. She was started on oral soft diet and discharged next day following surgery.

Histopathology showed 6x3.8x2.5 centimetre epidermoid cyst (Figure 2a) lined by stratified squamous epithelium. The sub epithelium shows mature adipose tissue and sebaceous glands (Figure 2b).

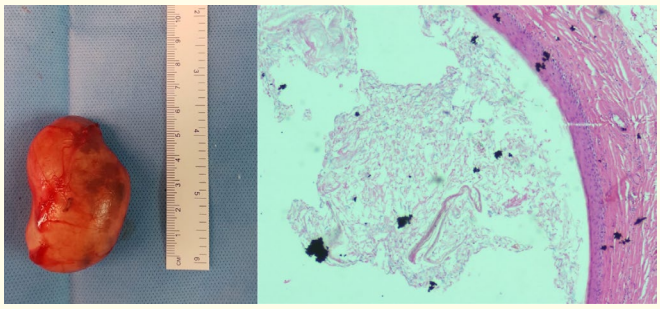

Figure 2: Showing specimen (Case 1). 2a – Complete excision of cyst measuring 6x3.8x2.5 centimeter. 2b – Histopathology epidermoid cyst lined by stratified squamous epithelium.

Follow up after 3 years revealed no significant lesion or complication related to surgical procedure.

Case 2

A 19-year-old male presented a painless gradually progressive mass in left FOM for 2 years. It was associated dysphagia for 1 year. There was no previous history of oral surgical procedures or trauma. Examination of oral cavity showed a smooth mucosa covered 4x3cm diffuse cystic swelling on the left side. Swelling was also bidigitally palpable.

Magnetic resonance imaging (MRI) revealed a well-defined cystic lesion in sublingual space (Figure 1c).

Management and outcome

Transoral excision of lesion was done. Cyst wall was thick and pale yellow in colour, and was crossing the midline (Figure 1d). It was extending deep to mylohyoid muscle. He was started on oral soft diet and discharged next day following surgery.

Histopathology showed 5x3.8x2 cm epidermoid cyst. Follow up after 1.5 years did not reveal any significant lesion or complication related to surgical procedure.

Discussion

An epidermoid cyst is a slow-growing lesion that usually presents in young adults. It is been proposed that incidence in young adults is because of hormonal triggers in puberty, which would lead to hypersecretion of fat and accelerates the growth of the cyst [7].

Epidermoid cysts might be congenital or acquired. Congenital origin of this lesion is due to entrapment of ectodermal element during midline fusion of first and second branchial arches during the 3rd and 4th week of gestation. Few have suggested that it is a variant of thyroglossal duct cyst [1,3,4,8,9].

Meyers had described three histological variants of this congenital cyst [2,3]. True dermoid is the one which has cavity of this cyst is lined with epithelial cells with keratinization, which is similar to that of skin. Epidermoid cyst is lined by squamous epithelium and fibrous wall and has no skin appendages. The last type being teratoid cyst which has ectoderm, mesoderm, and/or endoderm elements.

Bitar MA., *et al*. have first reported plunging epidermal sublingual cyst in 2003, since then only isolated case reports are available [9].

Computed tomography (CT) scan or magnetic resonance imaging (MRI) allows more precise localization of the lesion in relationship to geniohyoid and mylohyoid muscles. This further enables the surgeon to choose the most appropriate surgical approach. They might differentiate a few congenital cyst from ranula based on classic midline location of the cyst. Dermoid cyst demonstrates "sac of marbles" appearance on cross section imaging (CSI). Ranula can be demonstrated having cystic lesions with fluid attenuation in CT scan and a hyperintense lesion in T-2 weighted MRI with an absence of restriction diffusion. Plunging ranula can be well demonstrated using coronal CSI, with the extension of lesion above and below mylohyoid. The characteristic diffusion restriction of epidermoid cyst on MRI differentiates if from ranula [10].

Ultrasonography, when done in expert hands and properly coordinated, would be a cheap, excellent investigation. Fine needle aspiration cytology might point us towards a definitive preoperative diagnosis, but does not always turn adequate and might lead to infection [4,5,8].

The differential diagnosis of cystic sublingual lesions includes ranula, dermoid cyst, epidermoid cyst, lymphatic malformation, choristomas, salivary gland neoplasm, branchial cleft cyst and teratomas. Though rare, 5% of oral dermoid cyst of teratoid type can undergo malignant transformation [2].

Epidermoid cyst has a pale yellow coloured thick wall compared to ranula which has a thin and translucent wall. Thick wall of congenital cyst will also make dissection easier compared to ranula. Ranula is filled with mucoid secretion wherein the congenital cyst has thick secretion. Transcervical approach would be preferred in a very large cyst and cyst which extends to a deeper plane between the geniohyoid and mylohyoid muscles. Transoral approach can be preferred for cyst, as large as 6cm. Transoral excision is associated with good functional and excellent cosmetic outcomes.

Conclusion

Epidermoid cyst should be considered as a differential diagnosis for unilateral floor of mouth masses. Imaging and FNAC can aid in diagnosis. Complete excision should be planned for unproven cystic lesions in floor of mouth. Transoral excision is possible in a large cyst, as big as 6cm, even when it extends below mylohyoid. Intraoperative characters can differentiate a congenital cyst from others.

Lessons learnt

- Epidermoid cyst should be considered as a differential diagnosis for floor of mouth masses.
- Identification and a complete excision should be planned for unproven cystic lesions in floor of mouth.
- Transoral excision is possible in a large cyst, as big as 6cm, even when it extends below mylohyoid.

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