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Ranula: Two Interesting Case Reports

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Abstract

Lesions in the floor of mouth pose a challenge to oral physician both clinically and surgically because this area exhibits a great number of vital structures. While diagnosing, careful differential diagnosis should be carried out to rule out other lesions that usually occur in floor of the mouth such as ranula, Lipoma, salivary gland lesions, dermoid cyst, and vascular lesions. Ranula is a type of retention cyst arising from sublingual salivary gland as a result of obstruction of duct and fluid retention[2]. The foremost aetiology is obstruction of salivary gland duct followed by trauma. Here we present two cases of ranula in a young male and young female child in lateral aspect of floor of the mouth and their successful treatment.

Keywords: Floor of the mouth, Sublingual salivary gland, Plunging ranula, Marsupialisation

Introduction

Ranula is a type of mucocele found in the floor of mouth[1]. The term Ranula has been derived from the Latin word "rana" which means frog. The swelling resembles translucent underbelly of frog[12]. Ranulas are characteristically large [>2cm] and appear as a tense fluctuant dome shaped vesicle[3]. The most common site is lateral floor of oral cavity[3].

The foremost aetiology of ranula is partial obstruction of a sublingual duct[9]. The second most common etiological factor is trauma[9]. Ranulas superior to mylohyoid muscle appears as a translucent bluish swelling under tongue. If it is deeper; shows no colour changes[1]. Clinically ranula is of three types as sublingual ranula, plunging ranula and sublingual plunging ranula. Plunging ranula is formed when the fluid pressure of mucin dissects through mylohyoid muscle into submandibular space[8].

Plunging ranula most frequently occurs in patients under age of 30 years and less frequently in children less than 10 years of age. Here, we present two interesting case reports of ranula in oral cavity and plunging ranula in

submandibular region and oral cavity in a young female and male child.

Case Report

A 12 year old female patient reported to the Department of Oral Medicine and Radiology with a chief complaint of swelling in left side of floor of mouth from 8 days. Patient gives history of swelling which was initially of a peanut size and has been gradually increased and attained the present size. Swelling was associated with pain from 5 days. No history of trauma or previous surgery and no history of difficulty in swallowing or speaking. Family and personal history were not remarkable. On systemic evaluation there was no significant abnormality detected. On extra oral examination, there were no regional lymph nodes palpable and there was no evidence of any other neck swellings. On Intraoral examination, a solitary ovoid well circumscribed measuring approximately 2.2×2cm swelling was present in left side of floor of mouth which was soft, fluctuant, non compressible and the diascopy test was negative. Correlating with the history and clinical findings, the case was provisionally diagnosed as ranula. The patient was subjected to occlusal radiographic examination which revealed no evidence of obstruction. After preoperative investigations which were within normal limits, excision of ranula was carried out under local anaesthesia and was subjected to histopathological examination which revealed cystic cavity lined by flattened cuboidal epithelium, cyst filled with abundant mucinophages. Sutures were removed after 7 days and the patient was followed up every week

Case Report 2

A 7 year old male patient visited to the Department of Oral Medicine and Radiology with a chief complaint of swelling in right side of floor of mouth from 3 months. Swelling was sudden in onset which was initially of a peanut size and has been increased and attained the present size, which was not associated with pain. Patient gave history of difficulty in mastication and speech. No history of trauma or previous surgery. Family and personal history were not remarkable. On systemic evaluation there was no significant abnormality detected. On Extra oral examination, a diffuse, soft, fluctuant, non tender swelling about 2×3 cm in size was present in submandibular region. On intraoral examination, a solitary dome shaped, bluish swelling measuring approximately 3×3cm was present on right side of floor of mouth which was non tender, non compressible and fluctuant and diascopy test was negative. After correlating the history and clinical findings, case was provisionally diagnosed as sublingual plunging ranula and differential diagnosis of thyroglossal duct cyst, cystic hygroma was made. The patient was then subjected to occlusal radiographic examination which revealed no signs of obstruction. Ultrasonographic evaluation of the swelling showed large collection of fluid with internal echoes measuring 1.8×2.2 cm in right paramedian sub mental region. FNAC was performed under topical anaesthesia and yielded collection of thick yellow mucus like aspirate which was subjected to cytological examination which revealed presence of both acute and chronic inflammatory cells, plasma cells, macrophages suggestive of inflammatory cystic lesion .After all preoperative evaluations, marsupialisation of cystic lesion along with sublingual gland was under general anaesthesia and the sample was sent for histopathological examination which revealed histiocytes in cystic space and on connective tissue wall and cystic space filled with chronic inflammatory cells. Patient follow up was done every week.

Discussion

A ranula by definition is a mucus filled cavity in the floor of mouth in realtion to sublingual salivary gland[8]. The swelling resembles translucent underbelly of frog[8].

Basically ranula is a type of mucus extravasation pseudo cyst with its location in the floor of mouth where as other type of extravasation phenomena like mucocele occur most commonly on lower lip.

Clinically, ranula presents as a bluish, translucent, thin walled swelling in the floor of mouth. Simple ranulas are confined to sublingual space, plunging ranulas are centered on submandibular space[6]. Ranula usually occurs in children and in young adults with a peak frequency in second decade and most commonly involves right side[6.8]. A clinical variant plunging ranula usually occurs when the fluid pressure of mucin dissects through a perforation in mylohyoid muscle in submandibular space[8]. Ranula is formed due to partial obstruction of a sublingual salivary duct or due to trauma.

Differential diagnosis of oral ranula present in the floor of mouth may include submandibular salivary gland sialadenitis, Lipoma, haemangioma, dermoid cyst, salivary gland neoplasms. Lipomas occur rarely intraoral usually occurring in buccal mucosa, floor of mouth, tongue and clinically show yellowish mass with encapsulation[7]. Haemangiomas are developmental lesions with deep red colour which show compressibility and blanching on palpation. Mucocele are commonly seen in relation to lower lip with a history of lip biting and smaller size when compared to that of ranula. Salivary gland neoplasms like Adenoid cystic carcinoma, Muco-epidermoid carcinoma usually occur in floor of mouth and associated with pain and bleeding[7].

Histopathologically ranula consists of a central cystic space containing mucin and a pseudo cyst wall composed of loose, vascularised connective tissue. An important striking feature in histological diagnosis is the absence of epithelial tissues in pseudo cyst wall[9]. In our cases, histopathology revealed central cystic cavity lined by flattened cuboidal epithelium, cyst filled with abundant mucinophages.

Pertaining to age, in our case the patients were young children, similar observation was noted in studies of Godhi et al[2], Arora KS et al[4], Carlini V et al[11] where patients were mainly young children. Similar to our observation B.Godhi[2], Mustafa AB[3], Chavan S[15] observed that most common site for ranula as the lateral side of floor of the mouth. Apart from clinical and imaging assessments, diagnosis is definitively established with Fine needle aspiration cytology and presence of yellow aspirate, positive amylase and mucin but devoid of epithelial or glandular elements, cholesterol crystals and keratin[11].In our second case of plunging ranula, FNAC revealed thick yellow aspirate with mucin, chronic inflammatory cells and macrophages.

Radiological methods such as high resolution ultrasonography is one of the best tools to identify cystic lesions in submandibular traingle[11]. In the second case , ultrasonography revealed large collection of fluid with internal echoes measuring 1.8×2.2 cm in right paramedian sub mental region. CT and MRI are a helpful supplement to evaluate deeper tissue layers that sonography cannot assess completely[13].

Various treatment modalities that can be applied to ranula include excision of lesion with or without excision of ipsilateral sublingual salivary gland, marsupialisation, cryosurgery, carbondioxide laser excision, intra cystic injections of streptococcal preparation [OK-432]. Carlini V et al, in 2016 in their study observed that most efficacious treatment is considered yo be surgical excision of ipsilateral sublingual salivary gland. According to Baurmash etal., ranulas should be traeated primarily in conservative manner with marsupialisation and guaze packing[16]. In our first case report, excision of ranula was done and in second case, marsupialisation with excision of

sublingual salivary gland was done and there was no recurrence.

Conclusion

Though many cases of plunging ranula have been documented, differentiating the clinical features of oral and plunging ranulas is still a diagnostic dilemma. These lesions may be difficult to differentiate from benign and malignant salivary gland tumours; therefore thorough radiological, biochemical and histopathological investigations should be done for all the cases of plunging ranulas. It is very much important to diagnose early and do the required treatment as early as possible especially in children.

Figure 1a: Extra oral front profile of 12 year old female child

Figure 1b: swelling on left side of floor of mouth

Figure 1c: Mandibular occlusal radiograph

Figure 1d: Excision of Ranula

Figure 1e: Histopathological report showing cystic cavity filled with abundant mucinophages

Figure 1f: 1 month post operative photograph.

Figure 2a: Extra oral front profile of a 7 years old male child

Figure 2b: patient's extra oral right lateral profile

Figure 2c: Swelling in the neck in submandibular region

Figure 2d: Intraoral cystic swelling in floor of mouth

Figure 2e: Mandibular occlusal radiograph

Figure 2f: cytological report showing presence of inflammatory cells, plasma cells, macrophages.

Figure 2h: Immediate post operative intraoral photograph

Figure 2i:1 month post operative photograph

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Legends Figure

Figure 1a

Figure 1b

Figure 1c

Figure 1d

Figure 1e

Figure 1f

Figure 2a

Figure 2b

Figure 2c

Figure 2d

Figure 2e

Figure 2f

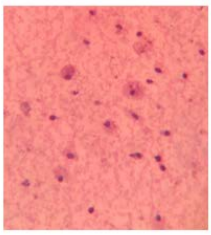

Figure 2g

Figure 2h

Figure 2i