

Oral ranula – report of a case with review of literature

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Abstract

Ranula is a soft bluish translucent swelling that occurs in floor of mouth usually causing mild discomfort to the patient. Ranula can be categorized as simple or plunging. Simple ranula manifests as bluish colored swelling in the floor of the mouth whereas plunging ranula spread through the facial plans posterior to the mylohyoid muscle into the submandibular and neck spaces. The authors have presented a case of 28- year-old female patient with simple ranula the classical clinical features of simple ranula have been described in detail. The surgical management of the case has been comprehensively described. A detailed discussion of the literature published in recent articles on oral ranula is also presented in the case report.

Keywords

ranula, sublingual gland, floor of mouth

Introduction

The term ranula used for a bluish translucent swelling in the floor of mouth is derived from the Latin word rana, denotation used for belly of a frog.¹ There are two possible etiological theories proposed for the development of ranulas. One theory suggests that ranulas progress as a result of mucus extravasation, whereas the other theory states that ranula is formed due to mucus retention.² Though the exact information regarding the prevalence of ranula is unclear some researchers have reported it at the prevalence rate of 0.2 cases for every thousand individuals.³ Females are more commonly affected than males with a male-to-female ratio of 1:1.4.⁴ In most of the reported cases the patient is in the second and third decades of life, however cases have been reported individuals ranging from the age of 3 years to 61 years.¹ Considering this background information the authors intend to present a case of oral ranula involving floor of the mouth in a 28-year-old female with comprehensive treatment and 6 month follow-up.

Case report

A 28-year-old female of Ethiopian origin reported to the clinic with complaint of a swelling under the tongue since a period of 3 months. The patient reported of discomfort while chewing food and speaking due to the swelling. The patient stated that moderate pain originating from the swelling was felt during consumption of food. There was no positive history of fever or discharge from the site of swelling. On examination was pinkish-blue in color and hemispherical in shape [Figure 1]. The approximate diameter was around 3 centimeters and capillaries were visible on the surface of swelling. On palpation the swelling was soft in consistency and fluctuant. There was no evidence of fixity to

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underlying structure. There was no indication of any extraoral swelling. An occlusal radiograph was made to rule out any calcific duct obstruction. Based on the history and clinical features a provisional diagnosis of ranula was made. After routine preoperative investigations, excision of ranula was carried out under local anesthesia [Figure 2]. A clear white color discharge came out after de-roofing of the swelling confirming there is no infection or pus in the lesion. Surgical closure was done using 3-0 sutures [Figure 3] which insuring suturing the lesion lining membrane with the floor of the mouth mucosa to avoid recurrence. The patient was reviewed 10 days after the surgery to remove the sutures and healing was satisfactory. Patient was reviewed further after a period of six months, no evidence of recurrence was observed.

Figure 1: clinical photograph showing the clinical features of oral ranula



Figure 2: intraoperative photograph showing exposed surgical site



Figure 3: Post operative photograph showing surgical site with suture placement



Discussion

Ranula is basically mucocele involving the sublingual salivary gland and is formed due to the salivary extravasation from any one of the 20 ducts of the sublingual salivary gland.⁵ Apart from the two theories suggested for the etiopathogenesis of oral ranula; certain other factors have also been suggested. Higher prevalence of ranula in certain ethnic population groups like Maori and Pacific Island Polynesians, have been observed suggestive of possible congenital factors in the formation of ranula.⁶ A Study conducted in Zimbabwe showed high prevalence of ranula in Human immune virus (HIV) patients giving rise to a possibility of HIV salivary gland disease causing ranula.⁷ The prevalence of oral ranula is about 0.2 cases per 1000 persons.⁸ Clinically they appear as a blue, dome shaped swelling in the floor of the mouth around 3-6 centimeters in size.⁵ in the present case similar clinical feature was observed and the size of the swelling was around 3 centimeters. Ranulas are differentiated as simple and plunging variety based on their extension.⁹ Plunging ranulas characteristically extend posteriorly beyond the free edge of the mylohyoid muscle intruding the sub-mandibular and sometimes even the parapharyngeal spaces.^{9,10,11} In the present case the swelling was restricted to the floor of the mouth and hence was classified as simple variety. In most of the reported cases, ranulas were observed on the lateral side of floor of the mouth.¹⁰ In the present case similar site of occurrence was observed. In the present case the patient was a 28-year old similar age related feature has been reported by several other authors with highest incidence being reported in the second and third decade of life.¹¹⁻¹³ Slight gender predilection favoring the female population was reported in

reviews although the difference was not significant.¹³ In the present case oral ranula was reported in a female patient. Differential diagnosis for oral ranula include other lesions occurring in the floor of the mouth such as lipoma, dermoid cyst, abscess, salivary gland lesions and vascular lesions.⁵

There are no precise diagnostic tests to diagnose ranula. In majority of the cases simple ranula presents as a cystic fluctuant swelling which gradually increases in size gradually. Biochemical analysis of contents of ranula have revealed higher salivary amylase and protein content compared to serum therefore suggesting that ranula originate from sublingual gland which produces saliva with higher protein concentration as compared to submandibular gland.¹⁴ Although the diagnosis of ranula is often simple because of its classical clinical feature a wide range of investigative modalities have been used ranging from invasive procedures like Fine Needle Aspiration Cytology (FNAC) to non-invasive imaging techniques like occlusal radiograph and Magnetic resonance Imaging (MRI).¹² In the present case occlusal radiograph was made to rule out ductal calcifications. Several treatment modalities have been used for oral ranula which includes sclerotherapy, marsupialization, excision of the pseudocyst, and excision of the sublingual gland. In the present case surgical excision was carried out in the presenting case.¹⁷ The common complications reported secondary to surgical management of ranula include recurrence of the lesion, sensory deficit of the tongue, damage of the duct post-operative hematoma and infection.¹⁸

The recurrence rates of ranula vary as per the treatment modalities that have been used. recurrence rate for ranulas treated with incision and drainage ranges from 70% to 100%, for ranulas treated with marsupialization recurrence ranges from 36.4% to 80%, for ranulas treated with surgical excision recurrence ranges from 18.7% to 85%, for ranulas treated with excision of ranula along with sublingual salivary gland the recurrence rate ranges from 0% to 3.8%.¹⁸

No complications were reported in the present case and no clinical evidence of recurrence was noticed for a period of six month post-surgical intervention.

Conclusion

Identifying the important clinical features of ranula is an important aspect in the diagnosis of ranula. Investigative modalities can be useful in cases of plunging ranula or to rule out differential diagnosis. The authors have made an attempt to highlight the key clinical features of ranula along with the detailed treatment and follow-up details.

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