**Case Report**

**Sublingual Ranula: A Case Study and Management Modalities**

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**Abstract**

Ranula is a mucus extravasation cyst of the oral cavity, the incidence of which peaks in the second decade of life. In this case report, a young male presented with a slowly progressive swelling at the floor of the mouth which was diagnosed clinically as ranula. He underwent excision of the ranula. Three-month follow-up revealed no recurrence.

**Keywords:** Mouth, ranula, sialocysts

**INTRODUCTION**

The term “Ranula” originates from the Latin word *Rana* meaning the “underbelly of a frog.” They usually remain asymptomatic or present with a painless bluish fluctuant swelling at the floor of the mouth.[¹] Based on the clinical presentation, they are categorized into three types – sublingual, plunging, and sublingual plunging ranulas. The most common variety “sublingual ranula” presents with an intraoral swelling. Plunging ranulas are those which are located cervically beyond the mylohyoid and present externally. Sublingual plunging ranulas have both the components.[²]

**CASE REPORT**

A 23-year-old male presented with a slowly progressive swelling on the right side of the floor of the mouth for 2 months. The swelling was painless and did not cause difficulty in movements of the tongue. Clinical examination revealed a 3 cm × 2 cm bluish swelling at the floor of the mouth toward the right side. It resembled the classical description of frog’s belly. The swelling was mobile, nontender, and transilluminant. There were no signs of any cervical extension [Figure 1a and b].

The patient was counseled regarding the surgery and the likely chance of recurrence in future. With his consent, he was taken up for deroofing of the cyst under general anesthesia. Intraoperative findings included a jelly-like transparent material which was removed followed by the excision of ranula and suturing of the mucosal defect with running sutures. Postoperative period was uneventful, and the patient was discharged on day 5 [Figure 2a and b].

Histopathological examination of the specimen revealed chronic inflammatory infiltrate surrounding mixed mucous and serous glands with mucin without any evidence of atypia, dysplasia, or malignancy.

On follow-up after 3 months from surgery, the patient was asymptomatic and intraoral examination revealed minimal induration at the site of surgery with no recurrence [Figure 3a and b].

**DISCUSSION**

Ranula accounts for 6% of all oral sialocysts, and the incidence peaks in the second decade of life. Even though the prevalence is 0.2/1000 cases, less than 10% are true cysts.[³] Mucus extravasation has been accepted as the developmental cause for ranulas.[⁴] The diagnosis of ranula is mostly clinical. There are no specific diagnostic tests. Common presentation includes a cystic fluctuant lesion which increases gradually over a period of time.[⁵] The differential diagnosis includes various inflammatory and neoplastic lesions of the sublingual and submandibular glands/lymph nodes, granulomatous, adipose tissue diseases, cystic hygroma, branchial or thyroglossal duct cysts, laryngocele, dermoid cysts, and epidermoid cysts.[⁶]

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Multiple treatment modalities have been tried from the past for ranulas, most of them with recurrence. Placement of silk suture at the dome of the lesion and micromarsupialization had been practiced in the past. Modified micromarsupialization with the use of multiple sutures has been successful in the pediatric population. Marsupialization followed by positive pressure gauze packing has resulted in the reduction of the recurrence rate to less than 12%. Multiple authors have advocated radical management of all ranulas with the excision of the sublingual gland along with the ranula. Some of them had even recommended size criteria with respect to consideration of removal of the gland. Various surgical approaches have also been described in the form of transoral approach as well as through the lingual surface of the mandibular alveolar process. The use of fibrin glue after dissection of ranula and hydrodissection technique using saline, lidocaine, and epinephrine are the other surgical techniques which have been employed. Vaporization of the ranula using lasers and intracystic injection of sclerotherapy agents have also been employed with minimal lateral damage. Botulinum toxin has also been injected into the cyst with some success.

In spite of the various surgical and nonsurgical modalities described in literature, excision of ranula along with the involved sublingual gland has been the most accepted method with low recurrence rate. The recurrence rate varies from 3.8% for excision of ranula along with sublingual salivary gland to as high as 100% for incision and drainage.

**CONCLUSION**

Although ranula accounts for a small percentage of oral cavity lesions, its diagnosis gains importance due to the fact that it mimics a variety of inflammatory, benign, and neoplastic lesions. The diagnosis is purely clinical. Surgical modalities are still favored over newer modalities of treatment probably due to the lack of large-scale data in support of newer modalities in terms of recurrence.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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