

## Ranula in a 12 Year Old Girl – An Interesting Case Report

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**Received:** July 21, 2017; **Published:** August 05, 2017

### Abstract

A ranula by definition is a mucus filled cavity, a mucocele, in the floor of the mouth in relation to the sublingual gland. Ranulas have a prevalence of about 0.2 cases per 1000 persons and accounts for 6% of all oral sialocysts. Ranulas usually occur in children and young adults, with the peak frequency in the second decade. This article presents a case of ranula in a 12 year old girl who presented with unilateral swelling in the floor of the mouth since 3 months. She had discomfort and intermittent pain associated with swelling and it was treated with marsupialization. Case was followed up for six months and there was no recurrence. Discuss about etiopathogenesis, clinical features, treatment options.

**Keywords:** Marsupialization; Ranula; Sublingual Salivary Gland

### Introduction

The term “ranula” has been derived from the Latin word “rana” which means “frog.” The swelling resembles a frog’s translucent underbelly or air sacs. It occurs unilaterally, lateral floor of the oral cavity is the most common site and commonly seen in young adults and male and females are equally effected. Size is normally large more than 2 cm it appear as a painless, tense fluctuant dome-shaped vesicle, sometimes with a blue hue [1,2].

### Case Report

A 12 year old girl complains of swelling in the floor of the mouth since 3 months. She was in good health and had no history of any systemic disorder. Family history and personal history were unmarkable. There was no history of injury or surgical procedure involving the floor of the oral cavity. The swelling was asymptomatic and there was a history of intermittent change in the size of swelling.

On extra oral examination no abnormality was detected, general condition was good. Intraoral examination revealed that an uncommon blue, translucent, soft fluctuant swelling in the anterior part of right side of floor of mouth which extended from lower right incisor till mesial surface of 1<sup>st</sup> molar region measuring 8absence of any ulcerations or sinus discharge. There were no other secondary changes involved like paresthesia or cervical lymphadenopathy. The tongue was raised (Figure 1) Oral mucosa, gingiva was normal and salivary ducts openings were patent. Oral hygiene was poor. On palpation the mass was soft and cystic. It was not bidigitally palpable.

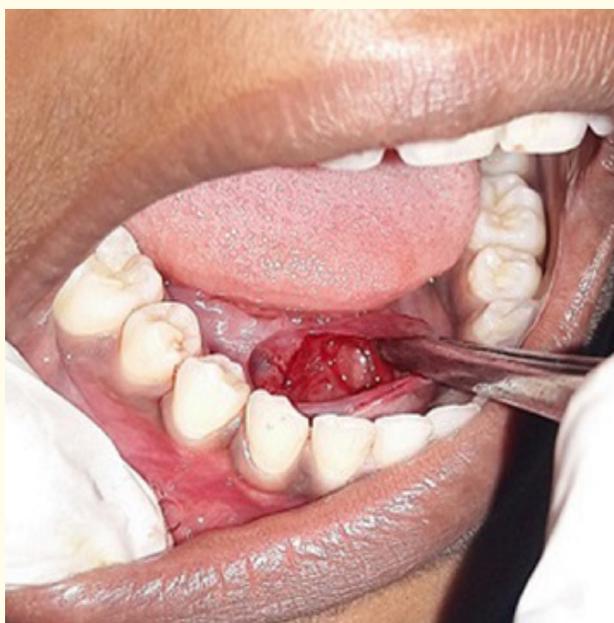


**Figure 1:** Intraoral appearance of the swelling.

Based on the history, clinical examination, findings and a tentative diagnosis of ranula was made with a differential diagnosis of dermoid and epidermoid cyst, thyroglossal duct cyst, cystic hygroma, and lymphadenopathy. The excision of the lesion was done under general anaesthesia there was no sign of recurrence for the next six months after which the patient was lost for follow-up.

**Surgical Note of the Treatment**

Under general anesthesia nasotracheal intubation done. Standard draping and painting done intraorally and extraorally. Local anesthesia infiltrated around the cystic lesion which is located on anterior side of right half of floor of mouth. A 1 X 2 cm incision is given on the most prominent point of cystic lesion parallel to the submandibular duct to avoid ductal stenosis or injury. A curved mosquito artery forceps is introduced into the cystic lesion and all the locules are broken down and retained saliva is evacuated. Cystic lesion is explored into the deeper plane without injuring the submandibular duct and lingual nerve (Figure 2). Cystic lining which opened get sutured with 3-0 vicryl to the oral mucosa on either side of the oral cavity by achieving decompression. Careful irrigation done. Extubation done uneventfully (Figure 3). Post – operative review after one month showed no cystic swelling in the floor of the mouth.



**Figure 2:** Intraoral picture showing incision.



**Figure 3:** Intraoral picture showing after enucleation of the ranula.

**Discussion**

Ranula was reported even during the period of Hippocrates and Celsius [1]. The incidence of a ranula is estimated to be 0.74% with the peak frequency in the second decade [2].

**Etio-pathogenesis:** A ranula is a fluid collection that occurs either due to the following reasons as follows: The foremost etiology of ranulas is partial obstruction of a sublingual duct. This can lead to the formation of an epithelial-lined retention cyst, which occurs in < 10% of all Ranulas. The second most common factor is a trauma that causes direct damage to the duct or deeper areas of the body of the sublingual gland, leading to extravasation of mucus and formation of a pseudocyst. In most cases, it is iatrogenic [3,4].

**Types:** According to their site of location, Ranulas can be classified as 3 types They can be as follows [5]:

1	Simple ranula	Located in the floor of the mouth
2	Cervical ranula	Located in the paracervical region
3	Plunging ranula	Located near the upper airway and extending into the floor of the mouth. [plunging ranulas show a so called 'tail sign' on MRI] [4].

Based on the pathogenesis there are two different types of ranulas [6]:

1) True cyst	Whenever there is an obstruction in the ducts of sublingual gland or ducts of one of the minor salivary glands leads to formation of a true cyst. This type of ranula has an epithelial lining.
2) Pseudocyst	This type of ranula does not have an epithelial lining. This is formed due to ductal injury of the sublingual salivary gland, leads to extravasation of saliva and accumulation into the submucous tissue. occasionally this type of ranula is surrounded by granulation tissue or condensed connective tissue.

Other tumors of the tongue include: Thyroglossal duct cyst, Lingual thyroid, Dermoid cyst, Granular cell myoblastoma and Heterotopic gastric mucosal cyst [7,8].

Differential Diagnosis	General characteristics	Ultrasound	CT	MRI
Thyroglossal duct	Midline, at or below the hyoid bone Moves with swallowing	Anechoic mass with thin outer wall, increased through transmission, may have echogenic fluid from proteinaceous content	Thin walled, well circumscribed homogenous cystic collection Rim enhancement with infection	T1-w: Typically low signal T2-w: Typically high signal
Dermoid/Epidermoid cyst	Lined by a thin stratified squamous epithelium Dermoid cysts occur in the midline, usually at the floor of the mouth, while epidermoid cysts occur off midline Fluid-fluid levels	Nodular echogenic masses consistent with “sack-of-marbles” appearance	Low density, non-enhancing mass “Sack of marbles” from coalescence of fat into nodules	T1-w: Dermoid cysts are variable Epidermoid cysts are hypointense T2-w: Hyperintense Epidermoid cysts demonstrate

Apart from surgical management, CO2 laser has been used to treat ranulas. Other treatment options include radiation therapy which is used in rare cases. Low doses of 20 - 25 gray are effective. Intracystic injection of the streptococcal preparation, OK- 432, has been used to treat this lesion in a few reported cases. The use of this sclerosing agent as an advanced treatment for the cervical ranula is considered experimental. Orally administered Nickel Gluconate-Mercurius Heel-Potentised Swine Organ Preparations D10/D30/D200, a homotoxicological agent to be an effective treatment modality for ranulas has been reported recently [9,10].

**Sclerotherapy**

Currently this is holding out lots of promise. The sclerosing agent used is OK-432 This is actually a lyophilized mixture of low virulence strain of streptococcus pyogenes incubated with benzyl penicillin. This acts by stimulating inflammatory lesion with destruction of cyst lining if present and cicatricial contraction of the lesion by scar tissue formation. Patients who have been treated with sclerotherapy have mild elevation of temperature and pain and tenderness over the lesion. The hither to painless lesion becomes rather painful due to inflammatory reaction. Before proceeding with sclerotherapy, it should be ensured that the patient is not sensitive to Benzyl Penicillin which is commonly known to produce anaphylactic reaction [11].

**Conclusion**

It is very important to diagnose early and do the treatment as early as possible especially in children to prevent further discomfort and also to improve the quality of life.

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**Volume 4 Issue 6 August 2017**

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