

Management of superficial ranula with marsupialization technique: A case report

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Abstract

Objective: Ranulas are cystic fluid-filled cavities caused by extravasation of the sublingual glands on the floor of the mouth.

Case Report: A 31-year-old woman complained of swelling beneath her left tongue that had developed during the previous month. Examination revealed that the swollen area was 2 cm in diameter, long, soft, and bluesy. This case was treated with the marsupializa-

tion technique.

Results: The biopsy indicates that the lesion is a ranula. After two weeks of observation, no complications or recurrences occurred after treatment.

Conclusion: The superficial ranula was successfully treated with marsupialization procedures without complications or recurrences.

Keywords : Ranula, Marsupialization

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Introduction

Ranulas are rare, benign, congenital, or acquired extravasated mucocysts (pseudocysts) that are usually located in the area above the mylohyoid muscle (sublingual ranula) or the submandibular space (plunging ranula).¹ Saliva enters the surrounding tissue due to trauma to the duct salivary glands. Ranulas are caused by buildup mucus, which occurs due to the acinar glands rupturing in the sublingual or ranine canal.²

Ranula derives from the Latin word "day," which means "frog." Ranulas are blue lumps that resemble frogs' stomachs. There are three types of ranulas: superficial, plunging, and combinations.³ Superficial ranulas appear as retention cysts on the oral cavity floor, are asymptomatic, but can cause airway obstruction if big, and are common in children. Plunging Ranula develops owing to dehiscence of the mylohyoid muscle, such that the sublingual gland herniates, and extravasation occurs, leading to the buildup of mucus in the submandibular and submental areas.⁴

In several studies, the prevalence of ranula was estimated to be 0.2 cases per 1000 people, with women being more susceptible than males (1:1.4). The majority of recorded cases in patients occur in the second and third decades of life, with a range of 3 to 61 years.⁵

The diagnosis of ranula can be determined from the clinical picture and supporting examinations such as MRI, tomography, and ultrasonography. Various treatments for ranulas are OK-432 sclerotherapy, marsupialization, incision and drainage, aspiration of cyst fluid, excision of ranulas, and

excision of ranulas with or without excision of the sublingual gland.²

Case Report

A 31-year-old female patient went to the dentist's clinic in the Oral Surgery department, complaining of swelling under her tongue that had been present for one month. The patient has had antibiotics and anti-inflammatories but has not recovered. According to intra-oral examination, the lump was 2 cm in diameter, bluish in color near the base of the tongue, and soft on palpation [figure 1](#). The patient's provisional diagnosis is ranula intraoral with the differential diagnosis of lymphangioma and mucocele, and the treatment plan consists of surgery using the marsupialization technique.

Preoperative measures involved a skin test 1 hour before surgery, which included injecting LR and ceftriaxone via infusion. The surgical procedure begins with aseptic and antiseptic procedures in the surgical area, followed by the marsupialization technique, which involves holding the top of the ranula with surgical tweezers and making an incision in the mucosa and epithelium of the oval-shaped ranula to create a window as a channel to release the trapped fluid. Ranula epithelium and stitched around the incision. The incision was left open in the middle, [Figure 2](#) No complications were found during the operation, and bleeding was minimal. The tissue taken was sent to the laboratory Anatomical Pathology after being entered into 10% formalin media [figure 3](#). The patient was discharged

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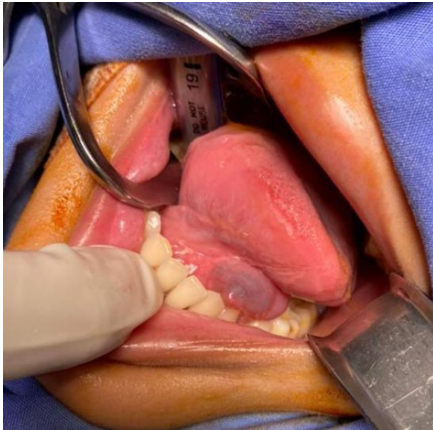


Figure 1. Intra Oral Clinical Features in Patients

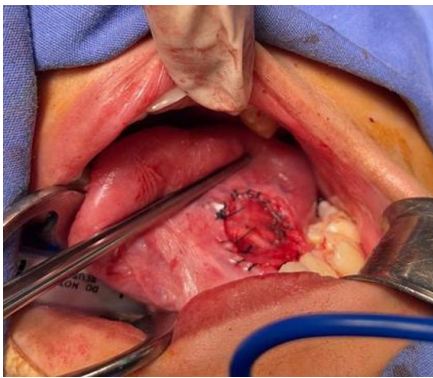


Figure 2. Operation with Marsupialization Technique



Figure 3. Tissue that has been taken for anatomical pathology examination

after 1 day of treatment with cefixime 100 mg, ibuprofen 400 mg, and dexamethasone 0.5 mg.

The control patient was one week after surgery and complained of mild pain at the operation site. The wound's intra-oral clinical picture appeared normal, with no infection or significant inflammation symptoms. The sutures were then removed. The results of the anatomical pathology study resembled a cyst wall with thick lymphocytes and hyperemia of blood vessels, indicating a ranula.

Discussion

Ranulas often occur in the first and second decades of life, while plunging ranulas are more common in the 3rd decade.⁶ Ranulas are more commonly found on the left side of the tongue at 6.7% and the right side at 3.3%.⁷ Ranulas are generally asymptomatic but are accidentally discovered during an oral cavity examination. Large ranulas can cause problems with swallowing, speaking, chewing, and obstructing the airway.⁷ The ranula in this patient was 2 cm in diameter and caused slight interference with chewing and swallowing functions.

Based on the patient's history, information was gathered about a lump felt one month ago, and clinical examination revealed no symptoms of lesion extension to the chin or neck area, indicating a plunging ranula. The ranula swells over a period of 6 months due to the hydrostatic pressure mechanism due to the buildup of saliva in the sublingual gland, which presses on the neck area.⁸

The pathophysiology of ranula, according to Flaitz and Hicks is caused by several mechanisms, namely; Partial or total obstruction of the excretory duct due to sialoliths, congenital malformations, stenosis, periductal fibrosis, scars around the duct due to trauma, agenesis of the secretory duct or tumor so that saliva flow is obstructed; Ectopic sublingual glands are thought to be closely related to the ranula; Rupture of the acinar glands caused by blocked ductus hypertension; Trauma that damages parenchymal cells in the lobes of the salivary glands, and Increased metalloprotein, TNF- α , collagenase type IV and plasminogen activator from saliva.⁹

Ranulas can be treated by marsupialization or by creating a window in the lesion. Marsupialization is a technique used for ranula that is the same size or less than 2 cm, carried out under topical anesthetic and using lingual block anesthesia and regional infiltration. This operation does not need for a lengthy period; therefore, there is no tissue damage or significant inflammation.¹⁰ Suturing is performed around the margin of the lesion using threads that can or cannot be absorbed to connect the uninvolved peripheral mucosa to the lesion mucosa and lesion base tissue. Due to Suturing, It is also carried out through the mucosal cavity, followed by drainage by pressing on the lesion. Following mucosal excision, additional sutures are necessary to connect the lesion's base to the adjacent peripheral mucosa. The surgical region is wrapped with 3/8-inch gauze coated with antibiotic gel and can be removed 48 hours afterward.¹¹

Complications that commonly occur following surgery for ranulas are injury in Wharton's duct causing stenosis, obstructive sialadenitis, injury

on the lingual nerve resulting in paresthesia, injury to the mandibular branch of the facial nerve resulting in paresis and paralysis. Incomplete removal of the ranula may result in recurrence and bleeding.¹¹

This patient had a differential diagnosis of lymphangioma and mucocele. However, what distinguishes it from lymphangioma is that in intraoral lymphangioma, the findings of anatomical pathology investigation demonstrate that there are lymphatic channels in the connective tissue stroma, characterized by irregular and thinned epithelium and lymphoid clusters.¹² Clean him up is a lesion resulting from rupture of the minor salivary gland duct caused by local or mechanical trauma. Clean him up is often found on the lip mucosa.¹³ The prognosis for marsupialization of ranula is good.

Conclusion

Based on the results of case reports involving ranula marsupialization, it can be concluded that the term ranula describes a lump on the floor of the mouth, unilateral, and in the form of a bluish lump like a frog's stomach. Successful management of ranula depends on complete surgical excision of the lesion to avoid the risk of recurrence.

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Conflict of Interest

The authors report no conflict of interest

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