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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 in the floor of the mouth.
Methods: A 31 year old woman came with complaints of swelling under the left tongue that has been felt for a month. Examination showed that the swelling was 2 cm in diameter, soft, bluish. Management of this case was carried out using the marsupialization technique.
Results: Biopsy indicates that the lesion is a ranula. There were no complications or recurrences found from the treatment carried out after 2 weeks of observation.
Conclusion: Superficial ranula case was successfully treated by marsupialization techniques without complications and recurrence.
Keywords : Ranula, Marsupialization

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Introduction

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

Ranula comes from the Latin word "day" which means frog. Ranulas are lumps with a bluish color like a frog's stomach. Anatomically, ranulas are divided into three types: superficial ranulas, plunging ranula, and combinations[3]. Superficial ranulas occur as retention cysts on the floor of the oral cavity, are asymptomatic but cause airway obstruction if they are large and often occur in children. Plunging Ranula occurs due to dehiscence in the mylohyoid muscle so that the sublingual gland herniates and extravasation occurs mucus resulting in accumulation of mucus in the submandibular and submental spaces[4].

The prevalence of ranula was reported to be an average of 0.2 cases per 1000 individuals, occurring more frequently in female than a male : female ratio of 1:1.4. Most reported cases in patients occur in the second and third decades of life with an age range of 3 to 61 year [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].

A case report

A 31 year old female patient came to the dentist's clinic in the Oral Surgery department with complaints of swelling under her tongue since a month ago. The patient has been given antibiotics and anti-inflammatories but has not recovered. Based on intra-oral examination, the

lump was 2 cm in diameter, bluish in color at 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 are carried out by doing skin test an hour before surgery by injecting LR and ceftriaxone via infusion. In This case, The operation is performed under general anesthesia. The surgical procedure begins by carrying out aseptic and antiseptic procedures in the surgical area, then the surgical procedure is carried out using the marsupialization technique, the top of the ranula is held using surgical tweezers and an incision is made 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 is left open in the middle. (Figure 2). No complications were found during the operation, bleeding was minimal. The tissue taken was sent to laboratory Anatomical Pathology after entered into 10% formalin media (Figure 3). The patient was discharged a day after treatment with cefixime100 mg, ibuprofen 400 mg, and dexamethasone 0.5 mg.

Patient control was a week after surgery with complaints of mild pain at the operation site, the intra-oral clinical picture of the wound looked good and there were no signs infection or massive inflammation then the stitches are removed. The results of the anatomical pathology examination resembled a cyst wall with dense lymphocytes and hyperemia of blood vessels which was concluded to be a ranula.

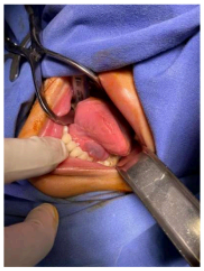

Figure 1. Intra Oral Clinical Features in Patients

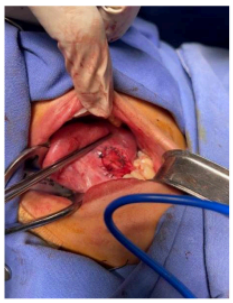

Figure 2. Operation with Marsupialization Technique

a.

b.

Figure 3. Ilustration of Operation with Marsupialization Technique [16]

a. Creating a window in the lesion
b. The cyst wall is sutured to adjacent tissue

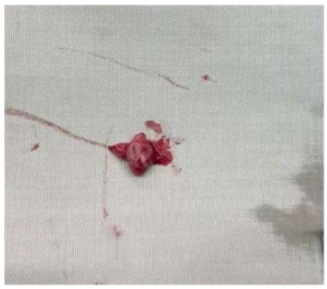

Figure 4. Tissue that has been taken for anatomical pathology examination

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 in 6.7% and the right side in 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] In this patient the size of the ranula was 2 cm in diameter with slight interference with chewing and swallowing functions. Clinical symptoms are slow growing ranula, painless, unilateral, located in the floor of the mouth or in the midline of the mouth or bilaterally. Circumstances the surrounding mucosa remains normal, whereas the outer mucosa is thin and bluish in color, the tip of the tongue and the mucosa are raised so that interferes with talking and chewing.[8]

Based on the patient's history, the lump felt a month ago after a clinical examination. There were no signs of expansion of the lesion to the chin and neck area which indicated plunging ranula. The ranula expands over a period of 6 months due to the hydrostatic pressure

mechanism due to the accumulation of saliva in the sublingual gland which presses on the neck area[9].

The pathophysiology of ranula according to Flaitz and Hicks is caused by several mechanisms, namely; a) 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, b) ectopic sublingual glands are thought to be closely related to the ranula, c) rupture of the acinar glands caused by blocked ductus hypertension, d) trauma that damages parenchymal cells in the lobes of the salivary glands, and e) increased metalloprotein, TNF-α, collagenase type IV and plasminogen activator from saliva [10].

In this case, surgery was performed under general anesthesia. There are some cases where the treatment option can be carried out with local anesthesia and added sedation using N_2O-O_2 Inhalation.[8] Management of ranulas can be done by marsupialization or creating a window in the lesion. Marsupialization is a technique of choice for ranula that are the same size or smaller than 2 cm. carried out under topical anesthesia and using lingual block anesthesia plus regional infiltration, this procedure does not require a long time so there is no tissue damage or severe inflammation[11]. Around the edge of the lesion is carried out suturing using threads that can or cannot be absorbed, unite the uninvolved peripheral mucosa with the lesion mucosa and the lesion base tissue. Due Suturing It is also carried out through the mucosal cavity, then drainage is carried out by pressing the lesion. After excision of the mucosa, additional sutures are required to unite the base of the lesion with the adjacent peripheral mucosa. The surgical area is covered with 3/8 inch gauze coated with antibiotic gel, and can be removed after 48 hours [8,12].

Complications that often occur after surgery for ranulas are injury in Wharton's duct causing stenosis, obstructive sialadenitis; injury on the lingual nerve resulting in paresthesia injury mandibular branch of the facial nerve, resulting in paresis and paralysis; Incomplete removal of the ranula can risk recurrence and bleeding 11.

The case in this patient with a differential diagnosis of lymphangioma, epidermoid cysts and mucocele. However, what differentiates it from lymphangioma is that in intraoral lymphangioma, the results of anatomical pathology examination show that there are lymphatic channels in the connective tissue stroma, characterized by irregular and thinned epithelium, as well as lymphoid aggregates.[13] Precisely distinguishing epidermoid and ranular cysts requires interview with the patient, complete clinical examination, and radiological assessments (USG, CT, MRI), However, histopathological examination is the most capable of differentiating cystic lesions. So that surgical therapy such as marsupialization and biopsy excision can be selected.[14] Clean him up is a lesion resulting from rupture of the minor salivary gland duct caused by local or mechanical trauma. Clean him up often found on the lip mucosa[15]. 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.

Acknowledgment

None.

Conflict of Interest

The authors report no conflict of interest.

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