



[JDS]
**JOURNAL OF SYIAH KUALA
DENTISTRY SOCIETY**

Journal Homepage : <http://jurnal.unsyiah.ac.id/JDS/>
E-ISSN : 2502-0412



PERAWATAN PLUNGING RANULA DENGAN PEMBUKAAN DARI INTRAORAL DAN EKSTRAORAL

Melva Novi Yanti¹, Herman Hambali², Winarno Priyanto², Kiki A Rizki³

¹Residen Bedah Mulut dan Maksilofasial Rumah Sakit Hasan Sadikin Bandung

²Konsultan Departmen Bedah Mulut dan Maksilofasial Rumah Sakit Hasan Sadikin Bandung

³Konsultan Departmen Bedah Onkologi Rumah Sakit Hasan Sadikin Bandung

Abstract

Plunging ranula is a mucous extravasation pseudocyst which arises from the sublingual gland and crosses the mylohyoid line into the neck, usually appear in conjunction with oral ranula. To evaluate that the early diagnosis and proper surgical procedure can decreased recurrences rate. A 25 year old man visited Department of Oral Surgery Hasan Sadikin Hospital because of a fluctuant swelling of the left submandibular region and swelling of floor of the mouth. A sonography revealed there was a cystic mass at left submandible and not related to left parotis gland and thyroid. There was enlargement of multiple gland at left neck. The clinical diagnosis was plunging ranula. This case was treated with marsupialization and extirpation of the mass included removal of sublingual salivary gland. Postoperatively, one week after surgery the swelling was reduced and there was no more pain and paresthesia. Many patients have experienced recurrence and sometimes larger lesions have occurred. Excision of the ranula with the associated sublingual salivary gland is the most accepted method with low recurrence rate. It is a case of a 25 year old male presented with plunging ranula with both the oral and submandibular component and its removal by combined intraoral and ekstraoral approach has been reported with no recurrence after a follow up of one month.

Keyword: Plunging ranula, sublingual gland, mucous extravasation

INTRODUCTION

Ranula is a retention cyst of the sublingual gland, which enlarges progressively and extends into the surrounding soft tissues. The name "ranula" is derived from the Latin word "rana" meaning "frog".¹

It is a diffuse swelling, mucus retention cyst or a mucous extravasation pseudocyst as it lacks an epithelial lining in relation to the sublingual salivary gland.

The most common presentation of ranula is a painless, slow growing, soft, and moveble mass located in the floor of the mouth. Usually, the lesion forms to one side of the lingual frenum; however, if the lesion extends deep into the soft tissue, it can cross the midline.²

* Corresponding author

Email address : drg.melvasirait@yahoo.co.id

Two variants have been described: a superficial or oral ranula and a cervical or plunging ranula. Simple ranulas remain confined to the sublingual space, whereas plunging ones extend beyond it. Ranulas superior to the mylohyoid muscle appear as a translucent bluish swelling under the tongue, resembling a frog's underside. Though the exact prevalence of plunging ranulas is not known, simple ranulas have been reported to have a prevalence rate of 0.2 cases for every thousand people by various authors. The plunging ranula has the potential to spread into deeper parapharyngeal spaces and presents a diagnostic dilemma due to its clinical similarity with other neck masses such as cystic hygroma, thyroglossal duct cyst, intramuscular hemangioma, cystic / neoplastic thyroid disease, branchial cyst.^{1,3}

Primary etiology of these lesions is due to partial obstruction of a sublingual duct which leads to the formation of an epithelial-lined retention cyst. Congenital anomalies such as duct agenesis, hypoplasia of the sublingual gland and trauma causing direct damage to the duct or deeper areas of the sublingual gland.¹ A variety of surgical procedures have been quoted in the literature ranging from marsupialization, excision of the ranula, sclerotherapy, and excision of the sublingual gland.^{2,4}

CASE REPORT

A 25 year old male presented with a recurrent swelling in the left side of the floor of mouth for 3 months and a swelling in the right submandibular region for 2 months. He was asymptomatic and had no history of trauma. He mentioned that the swelling had increased in size and extended to occupy the neck region. On examination, a 3x2x2 cms soft, fluctuant, non tender swelling was palpated in the left side of floor of the mouth and a 6x4x3 cms, smooth, diffuse, soft, fluctuant, non tender, translucent swelling with well defined margins was seen in the left submandibular region. The patient had no difficulty in mastication and swallowing

(Figure1).



Figure 1: (A,B): Profile Picture; (C): Clinical Appearance of The Intraoral Swelling

Ultrasound examination revealed a well defined, thin walled anechoic lesion measuring 3x2 cms in the sublingual region extending inferiorly through a defect in the mylohyoid muscle into the left.

Submandibular region with internal echoes. In color doppler examination the anechoic lesion findings were negative in terms of vascularity or a feeder vessel (Figure 2). A clinical diagnosis of plunging ranula was made.

Combined intraoral and extraoral approach was planned for excision of the lesion. Under general anaesthesia patient was put in supine position with neck extended and turned towards right side. Submandibular component of the ranula was well visualized with this position. A 2 cm horizontal incision was made along the skin crease of submandibular region and incision was deepened till the ranula was well exposed.



Figure 2 :Ultrasonografi Picture

All the soft tissue attachments of the ranula were separated and it was followed till the floor of the mouth through mylohyoid muscle. Transorally roof of the ranula was dissected and complete ranula was excised and delivered through submandibular wound. Sublingual gland was then dissected out along with the duct and then completely excised. Edges of the oral defect were sutured to the surrounding mucosa so as to minimize recurrence. Small piece of antibiotic soaked guaze was place sutured over the defect. Extraoral drain was placed to evacuate hematomas. Submandibular wound was closed in layers (Figure 3). After surgery, patient was on 5 days of antibiotic therapy.

The excised specimen was sent for histological examination. Histopathology reported mucin collection in the lumen lined by fibroblastic connective tissue and inflammatory cells suggestive of ranula (Figure 4). On third day after surgery extraoral drain was removed.



Figure 3. Intraoperative Procedure

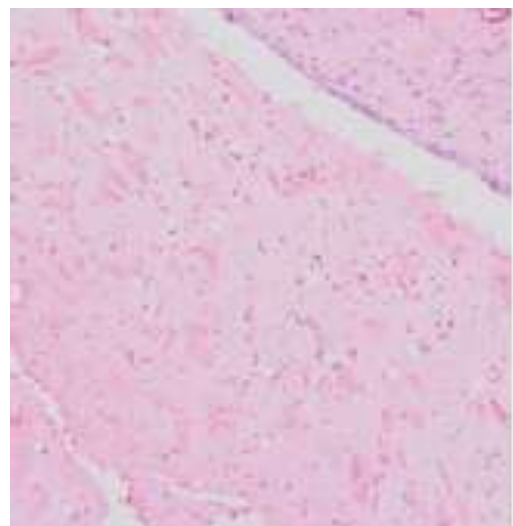


Figure 4. Histopatological Finding

On fifth day after surgery the antibiotic soaked guaze was removed and complaint of pain, swelling and parasthesia was absent. Sutured placed over intraoral defect was removed after 5 days. The patient has been followed up for a month with no recurrence (Figure 5).



Figure 5. (A,B): Profile Picture; (C): Intraoral Picture

DISCUSSION

A ranula is a retention cyst which occurs in the floor of the mouth and is not an uncommon lesion. It is caused by spillage of mucin, usually from injury to the sublingual gland or to a minor salivary gland in the floor of the mouth. If, however, the mucus tracks through the mylohyoid muscle and produces swelling in the neck, the result is a plunging ranula.^{5,6} It occurs more commonly in children and young adults with a peak incidence in the second decade with a female preponderance. Plunging ranulas have an increased incidence in the third decade. A congenital predisposition has also been ascertained secondary to an imperforate salivary duct or ostial adhesion.^{1,7}

Simple ranulas are confined to the floor of the mouth in the sublingual space at times with a bluish hue and its incidence is 0.2% cases per 1000 persons. Plunging ranulas with lower incidence of 21% occur with only a cervical swelling. In 45%, patients first presentation is an oral swelling. Mixed ranulas have an incidence of 34%.

Plunging, deep, diving or cervical ranulas derive its name as they “plunge” into the neck by one of the three mechanisms. Mucus extravasation occurs here due to

salivary duct rupture secondary to duct obstruction and secretory back pressure or due to damage to the duct or acini resulting in a Mucus Escape Reaction.⁷

Following are the theories regarding occurrence of plunging ranula:¹

- Sublingual gland projecting through the mylohyoid or an ectopic sublingual gland may exist on the cervical side of mylohyoid.
- Dehiscence in the anterior part of the mylohyoid muscle providing a path for ranula into the floor of the mouth.
- A duct from the sublingual gland may join the submandibular gland or its duct, allowing ranulas to form in continuity with the submandibular gland.

Clinically they appear as large (>2cms), painless, slow growing, non-tender, soft, tense fluctuant, asymptomatic movable swelling located in the floor of the mouth to one side of the lingual frenulum in simple ranulas and anterolateral neck swellings measuring 4-10 cms with intact skin that do not move with deglutition in plunging ranulas. Giant ranulas occur when the parapharyngeal space is involved.^{4,8}

Diagnosis is based on history, clinical presentation, radiological, biochemical, aspiration cytology and histopathological studies. Sialogram, ultrasound, Computed tomography and Magnetic Resonance Imaging are the imaging modalities used to confirm the diagnosis and for surgical planning. MRI is most sensitive in relation to the sublingual gland and its pathological state.

Aspiration cytology reveals mucus with prominent histiocytes and biochemical analysis reveals high amylase and protein content. Histopathologically a central cystic space with mucin and a wall with histiocytes and fibro connective tissue and no epithelial lining in pseudocyst are seen. It is important for confirmation and to rule out squamous cell carcinoma from the cyst wall and papillary cystadenocarcinoma of sublingual gland presenting as a ranula.^{7,8,9}

Prompt diagnosis and treatment aids in complex excision and lower recurrences. Various treatment modalities both medical and surgical have been described with varying rates of recurrence like Incision and drainage

(100%), Marsupialization (61-89%), Excision of ranula (57-69%), Excision of sublingual salivary gland (1-2%).

Excision of the ranula with the sublingual salivary gland is the key to minimizing recurrences as the pseudocyst is devoid of epithelium and has no potential for mucus production itself. Intraoral and ekstraoral approaches have been adopted for greater exposure and complete excision.

Ekstraoral approach with excision of the ranula and sublingual gland with care not to injure the sublingual artery, lingual nerve and marginal mandibular nerve is an optimal access for excision and prevention of recurrences. It can also be used in salvage surgeries where incomplete removal of the ectopic salivary glands on the inferior surface of the mylohyoid muscle is a cause for recurrence.^{7,10}

CONCLUSION

It is a case of a 25 year old male presented with plunging ranula with both the intraoral and ekstraoral component and its removal by combined intraoral and ekstraoral approach has been reported with no recurrence after a follow up of one month. The successful treatment for the plunging ranula includes excision of the affected sublingual salivary gland and evacuation of the contents of the extended ranula.

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