

Management of bilateral ranula : a case report

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Received 4 September 2023; 1st revision 19 September 2023; Accepted 29 September 2023; Published online 30 September 2023

Keywords:

Bilateral ranula; Plunging ranula; Sublingual gland; Marsupialization.

ABSTRACT

Background: Ranula that extends through the mylohyoid muscle into the submandibular space is called plunging ranula. Simple ranulas generally occurs in children and young adults, meanwhile plunging ranulas occurs in patients aged 20-29. Ranula conditions are generally unilateral, meanwhile bilateral ranula is a rare case. In this case, we presented a plunging ranula case with bilateral condition in a patient aged 10 years old. This paper aimed at presenting a rare case to highlight the etiology, diagnosis, treatment, and prognosis of this condition.

Case report: A 10-year-old girl came to Diponegoro National Hospital, her main complaint was that she had swelling on the right and left side of the mouth floor which has been occurred for 5 days. The patient explained that the swelling starts in small size and got bigger over time which cause her uncomfortable in swallowing.

Discussion : Ranula is a cystic lesion appears on the mouth floor and located in the submandibular or sublingual space which could be caused by any trauma or obstruction of the excretory ducts of the salivary glands. A diagnosis had been formulated by conducting a complete history and physical examination. Based on the cause, ranula is caused by trauma, obstruction, or inflammation and congenital ranula.

Conclusion: The right choice of surgical treatment in treating ranula cases has an important role. The marsupialization technique had been done by creating a window as a part of the treatment of Ranula case patients is expected to reduce the possibility of recurrence.

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DOI: <http://dx.doi.org/10.30659/medali.5.2.94-99>

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How to Cite: Setyawan *et al.* Management of bilateral ranula : a case report. MEDALI Jurnal: Media Dental Intelektual, v.5, n.2, p.94-99, September 2023.

INTRODUCTION

Ranula is a retention pseudocyst caused by an obstruction or trauma in the duct of the sublingual salivary gland which causes mucus extravasation. Clinically, ranula appears as fluctuating swellings in a normal or bluish color, resembling the abdomen of a frog (frog's belly) and develops gradually.¹ If the lesion already extends through and under the mylohyoid muscle into the submandibular space, it is called plunging ranula.² Based on its size, ranula may cause mesial or superior tongue deviation which may result in speech, mastication, and deglutition disorders.¹ If the condition of the ranula has extended through the mylohyoid muscle to the neck, it may result in airway obstruction which cause a medical emergency.²

From the prevalence of ranula which are 0.2 cases per 1000 individuals of all the salivary gland problems, ranula only account for 6% of cases. Ranula is mostly happened in children and young adults, meanwhile when the ranula condition has become plunging, it is mostly occurred in the last third decade of age.³ Ranulas located in the floor of the mouth are generally unilateral.¹ Plunging bilateral ranula is a rare case, which there were only 25 cases reported in the literature.⁴

There is consensus on which treatment is most ideal for ranulas, and conservative techniques had varying degrees of success. Marsupialization is often considered as the best option for children because it is simple, reliable, and efficacious.⁵ in this case report, we described a bilateral plunging ranula in a patient aged 10-year-old. To treat this case, marsupialization was performed on the right and left side of the mouth floor. It was done under the general anesthesia.

CASE REPORT

A 10-year-old girl came to Diponegoro National Hospital as a patient. Her main complaint was that she had swelling on the right and left side of the mouth floor which has been occurred for 5 days (Figure 1). The patient explained that the swelling starts in small size and got bigger over time which cause her uncomfortable in swallowing. The patient did not feel any pain, fever, or difficulty in breathing. She also had no history of systemic disease.

On the clinical examination, the general condition appeared to be good. There is fluctuating swelling at the base of the mandible (Figure 2). On the examination of regional lymph nodes, it was not palpable. On the intraoral examination, bilateral swelling was found merged through the lingual frenulum, the overlying mucosa was bluish in color and looked thin, it could be seen that the dexter side was larger and higher than the sinister, when the palpation performed, the swelling of the mouth floor fluctuated.

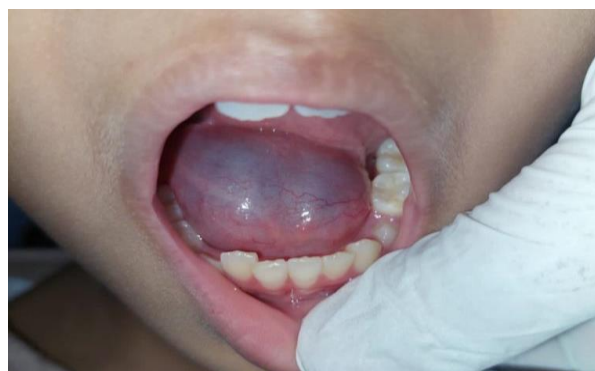


Figure 1. Bilateral swelling merges through the inferior labial frenulum, looks higher and bigger on the dexter side.



Figure 2. Submandibular region mass

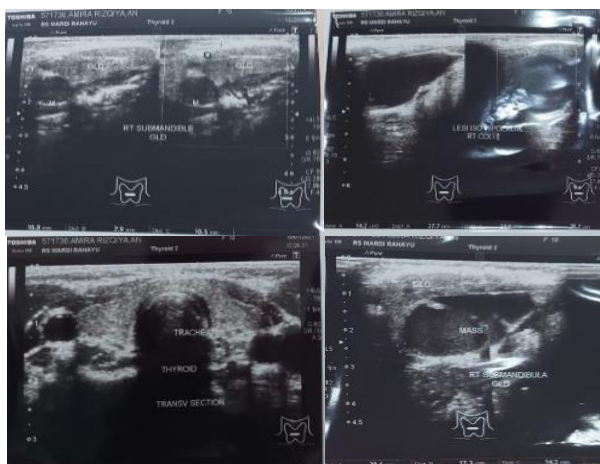


Figure 3. Ultrasound radiographic examination

DISCUSSION

Ranula is a cystic lesion appears on the mouth floor and located in the submandibular or sublingual space which could be caused by any trauma or obstruction of the excretory ducts of the salivary glands.¹ Ranula occurs mainly in the first and second decades of life, while plunging ranula is more common in the third decade.³ In general, the incidence of ranulas is more common in women than men.

There are two types of Ranula, namely simple ranula and plunging ranula.²

1. Simple ranula is a ranula which only occurred on the area occupied by the sublingual gland in the sublingual space, and overlies the mylohyoid muscle.

On the supporting examination, an ultrasound examination was performed., a cystic hypoechoic lesion was seen with well-defined border, thin walls, relatively homogeneous intralesional in the right submandibular region (posteromedial), with the lesion size approximately 38x17x14 and 10x7x10 mm, on color doppler there is no signal of intra-perilesional pathological vascularization signal.

2. The simple ranula developed into plunging ranula when the lesion extends and penetrates beneath the mylohyoid muscle into the submandibular space. Plunging ranula may extend through the mylohyoid muscle to the neck and may also obstruct the airway resulting in an emergency.

Ranulas usually appear as fluctuating swellings that are blue and dome-shaped in the mouth floor. Ranulas are seen most often in children and young adults. The larger the size of the ranula, the more it can interfere with the swallowing process, speaking difficulty, and obstruct the airway.⁶

Based on the cause, ranula is caused by trauma, obstruction, or inflammation and congenital ranula. Trauma, obstruction, or inflammation in salivary leakage resulting in mucin accumulation due to rupture of the duct of rivinus. Since ranula is layered with granulation tissue instead of epithelium, it is considered a type of pseudocyst. According to the theory, congenital ranula is caused by the non-forming ducts of the salivary gland.^{7,8}

Ranula possibly occurs in submandibular glands and minor salivary glands or sublingual gland.⁷ A leakage in sublingual saliva has a higher viscosity compare to other salivary glands, making it possible to induce a strong inflammatory reaction.

Spontaneous secretory activity carried out continuously by the sublingual gland is able to restrain inflammatory granulation and fibrosis, so it is considered to be the reason of why ranula is associated with the sublingual gland.⁹ Plunging ranula occurs when the pressure from the mucocele fluid ruptures and spreads through the mylohyoid muscle into the submental space or submandibular.¹⁰

A diagnosis had been formulated by conducting a complete History and Physical Examination. On the examination, a lump could be found on the mouth floor. If it is found in superficial location, then the color will be bluish-red, but if it is located deeper, the color will be the same as the surrounding tissue. The clinical symptoms of ranula including it grows slowly, painless, unilateral/bilateral, located in the mouth floor or in the midline of the mouth. The condition of the surrounding mucosa remains normal, while the outer mucosa is thin and bluish in color, the tip of the tongue and mucosa are raised so it may have impact on speaking and chewing. In addition, the ultrasound examination results showed a well-defined hypoechoic cystic lesion with thin walls, relatively homogeneous intralesional in the right submandibular (posteromedial) region, the size of the lesion was approximately 38x17x14 and 10x7x10mm, on color Doppler no signal of intra-perile pathological vascularization was seen, so it was concluded as plunging ranula. Ranulas are differentially diagnosed with sublingual abscesses, dermoid cysts, lipomas, sialolithiasis, and salivary gland tumors, such as mucoepidermoid carcinoma. To distinguish ranula from those diseases, it is necessary to have: (1) a clear history regarding how the mass or swelling developed and grow, (2) a clear clinical picture, especially one that describes the characteristics of a ranula that are not shared by other diseases, and (3) results of physical

examination and accurate results of other supporting examinations, such as laboratory tests and radiographic examinations.¹¹

Treatments of plunging ranula consisting of removing the sublingual gland and/or marsupialization. In the first case, the ranula was treated with the marsupialization technique by making a window on the ranula on dexter and sinister side of the mouth floor. This procedure was performed under lingual nerve block and local infiltration anesthesia. The action began with clamping the hemostat on the superior part of the cyst wall, and making ellipse incision on both sides which includes the oral mucosa and the superior wall of the cyst. After the incision has been formed, the next step was drying and decompressing it by performing needle aspiration to the ranula. (Figure 4) After decompressing and the cavity has dried, the margins of the oral mucosa were sutured with the margins of the ranula margins were allowed to heal with the intention of forming a cicatrix (scar). (Figure 5) Making a window reduces the possibility of recurrence. Suturing results were maintained for two weeks (Figure 7).



Figure 4. Drainage of the contents of the plunging ranula cyst

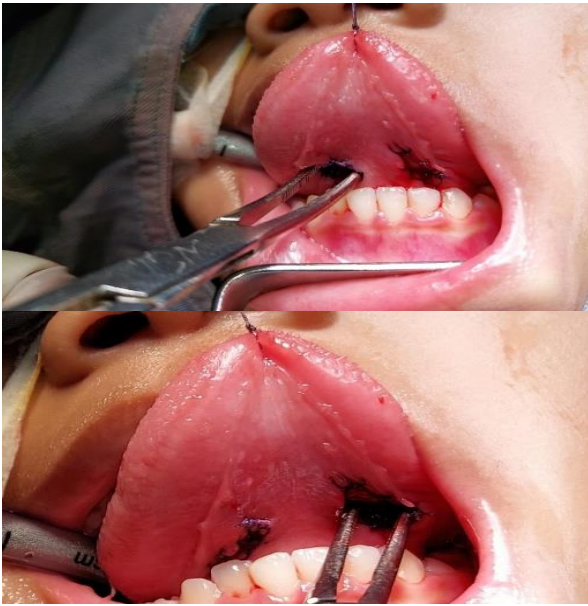


Figure 5. The edge of mucosa's margin was hected with the edge of the cyst wall



Figure 6. Suturing results were maintained for two weeks



Figure 7. Control after two weeks

CONCLUSION

The right choice of surgical treatment in treating ranula cases has an important role. By choosing the right treatment, a good case prognosis will be resulted. The marsupialization technique had been done by creating a window as a part of the treatment of Ranula case patients is expected to reduce the possibility of recurrence.

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