

# A Case of Congenital Ranula Operated in The Early Infancy

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## ABSTRACT

*Ranula is a mucus extravasation cyst originating from the sublingual gland on the floor of the mouth. Congenital ranula is very rare. The treatment of ranula includes aspiration of mucus, incision and drainage, marsupialization, injection of sclerosing agents, excision of the ranula with or without excision of the ipsilateral sublingual gland. In this study, we presented a congenital ranula excision to a forty-five days old infant.*

**Key Words:** *Ranula, congenital, management*

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**Erken Bebeklik Döneminde Opere Edilen Konjenital Ranula Olgusu**

## ÖZET

*Ranula, sublingual bezden kaynaklanan mukus ekstravazasyon kistidir. Konjenital ranula çok nadirdir. Ranulanın tedavisi aspirasyon, insizyon-drenaj, marsupializasyon, sklerozan ajan enjeksiyonu, ipsilateral sublingual bez ile birlikte veya tek başına ranula eksizyonunu içermektedir. Bu çalışmada, kırk beş günlük konjenital ranula eksizyonu yapılan bir hasta sunuldu.*

**Anahtar Kelimeler:** *Ranula, konjenital, tedavi*

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## INTRODUCTION

Ranula can be divided into simple and plunging type. While simple ranula is collection of mucus within the floor of the mouth or mucus extravasation pseudocysts, plunging ranula is mucus extravasation pseudocysts that arising from the sublingual gland and presents as a swelling in the submandibular and submental space of the neck (1-5). Ranulas commonly occur in young adults, and congenital ranula is very rare (6-8). In this report, we presented a congenital ranula excision to a forty-five days old infant. To our best knowledge, our patient was the youngest one that has been operated with congenital ranula according to previous reports.



Figure 1. Intraoperative appearance of slight blue cystic mass.

## CASE REPORT

A 15-day-old girl infant presented with a midline floor of mouth mass. Her parents first noticed the lesion in her mouth birth day and complained difficulty moving his tongue and feeding. In addition the mother was in panic and worried because of her babies' possibility of death by drowning at night. There were no known precipitating factors such as history of trauma or infection. Patient's medical and family histories were also unremarkable. Examination revealed a 2x1.5 cm blue slight appearance submucosal cystic mass in the midline floor of mouth. The mass also displaced the tongue ventral posterior. The neck examination was normal. Radiological investigations were not performed in the case. Fine needle aspiration biopsy was performed from the cyst, and viscous mucus like fluid was aspirated from the lesion. The cytological analysis of the aspirated material showed a few inflammatory cells. The chemical analysis of the aspirated material determined high amylase and protein contents. The mass recurred within a one week.

Informed consent was obtained from the parents. The patient was operated in 45th day of life. Under general anesthesia, the cyst was removed by extracapsular dissection using an intraoral approach (Fig. 1,2). The mucosal incision was closed primarily. Histopathologic examination showed a cystic structure that was without epithelial lining and bordered by granulation tissue with inflammation. The final pathologic diagnosis was a ranula (Fig. 3). There was no complication during the postoperative period. The child's feeding problems disappeared and her mother relieved psychologically at

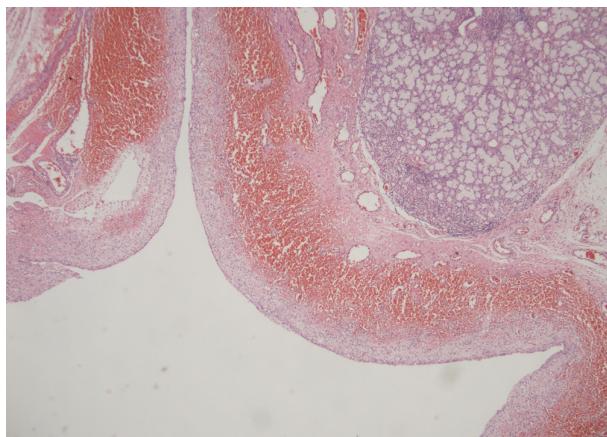
the postoperative period. There was no recurrence after surgery during 10 months.

## DISCUSSION

Ranulas are a mucus extravasation cyst originating from the sublingual gland on the floor of the mouth as a result of ductal obstruction and mucus collection. The etiology of ranulas are not clear, however obstruction, trauma, atresia of the submandibular or sublingual salivary glands duct have been caused (1,6,7). In our patients, there was no history of trauma or medical and family histories. Ranulas are usually seen as a pain-



Figure 2. Macroscopic view of surgical specimen.



**Figure 3.** Image demonstrated cyst wall that capsulated with pseudoepithelial fibrovascular tissue. Normal salivary gland tissue is shown in right upper site of image (HEx40).

less, fluctuant, with a blue translucent color swelling. The diagnosis of ranula is made generally based on the clinical examination. The patients with oral ranula are presented with a painless, fluctuant, blue translucent color, and slowly growing swelling of the floor the mouth (2,8,9). Ultrasonography, computed tomography scanning, and magnetic resonance imaging can be helpful in determining the location and the size of the lesion. A fine-needle aspiration biopsy may detect the mucus with inflammatory cells. Biochemical analysis of aspiration fluid reveals high protein and amylase contents (1,9). Radiological investigations were not performed in our case. We made the fine-needle aspiration biopsy, and the biochemical analysis of the aspirated material showed high amylase and protein contents. The differential diagnoses should be made masses and swellings in the floor of the mouth such as cystic hygroma, dermoid or epidermoid cyst, haemangioma, lymphangioma, lipoma and salivary gland tumors (1,8,9).

Especially in infant, there is no consensus on the treatment of ranulas. Many methods of treatment have been described. These techniques include aspiration of mucus, incision and drainage, marsupialization, injection of sclerosing agents, excision of the ranula with or without excision of the ipsilateral sublingual gland, CO<sub>2</sub> laser excision, cryosurgery, and placement of a silk suture into the dome of the pseudocyst (1-9). Garofalo et al. (4) applied a medical treatment for ranula nickel gluconate, mercurius heel, and glandula submandibularis suis

D10/D30/D200. They propose that medical treatment is more effective than marsupialization. Spontaneous resolution may be another option for infant ranulas (1,2,9). Therefore, some investigators suggest that an optimal management of ranula in children may include observation period of 3 to 6 months for spontaneous recovery (1,3,9). Steelman et al. (6) reported a one-day year old infantil ranula. They had no treatment to the patient and had reported spontaneous resolution in the fifth week. They concluded that ranulas in neonates no feeding problems or airway obstruction should be observed initially for spontaneous resolution. Seo et al. (3) recommended that the preoperative observation period for spontaneous resolution require not be longer than 3 months. In our patient, the mass recurred within one week after aspiration. Her mother said that her baby has feeding problems, she was in panic and worried because of her babies' possibility of death by drowning at night. That's why we didn't wait for spontaneous resolution and we operated the patient immediately. As far as we know, our patient was the youngest one that has been operated with congenital ranula.

The marsupialization have high rate of recurrence (10). However, some authors think that marsupialization should be chosen method for pediatric ranula. They suggest, if the ranula does not resolve after marsupialization or recurrence occurs excision of sublingual gland and pseudocyst is recommended (1,2,5). Excision of the ranula with sublingual gland is the most suitable and effective surgical method for simple ranulas (2,5,11). The complications of surgery of ranula are intraoperative cyst rupture, injury to sublingual nerve and Wharton's duct, hemorrhage, and infection (1,3,9). Haberal et al. (2) detected that rupture of the cysts is not increase the recurrence rates of the simple ranula. In conclusion, although many methods of treatment for ranulas have been described, there is no consensus about most effective treatment of pediatric ranulas. Spontaneous resolution can be waited, but we suggest that if the lesion recurs repeatedly after aspiration and have feeding problems, then surgical treatment is performed in the anytime of life. We think that excision of the ranula has a lower risk of sublingual nerve damage and lower rate of Wharton duct's damage according to excision of the ranula with sublingual gland. Also lower recurrence rate according to marsupialization so why we think the excision of the ranula is appropriate treatment for infant ranula.

**Conflict of interest statement**

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**REFERENCES**

1. Zhi K, Wen Y, Ren W, Zhang Y. Management of infant ranula. *Int J Pediatr Otorhinolaryngol* 2008; 72: 823-6.
2. Haberal I, Göçmen H, Samim E. Surgical management of pediatric ranula. *Int J Pediatr Otorhinolaryngol* 2004; 68: 161-3.
3. Seo JH, Park JJ, Kim HY, Jeon SY, Kim JP, Ahn SK, et al. Surgical management of intraoral ranulas in children: an analysis of 17 pediatric cases. *Int J Pediatr Otorhinolaryngol* 2010; 74: 202-5.
4. Garofalo S, Mussa A, Mostert M, Suteu L, Vinardi S, Gamba S, et al. Successful medical treatment for ranula in children. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2012; in press.
5. Yuca K, Bayram I, Cankaya H, Caksen H, Kiroğlu AF, Kiriş M. Pediatric intraoral ranulas: an analysis of nine cases. *Tohoku J. Exp. Med* 2005; 205: 151-5.
6. Steelman R, Weisse M, Ramadan H. Congenital ranula. *Clin Pediatr* 1998; 37: 205-6.
7. Wada T, Yamamoto H, Ootsuki R, Nakatani K, Fujita S. Congenital ranula. *Asian J Oral Maxillofac Surg* 2004; 16: 63-6.
8. Matsuzaki H, Katase N, Moritani N, Hara M, Yanagi Y, Asaumi JI. Swelling of the floor of the mouth in an infant. *Oral Surg Oral Med Oral Pathol Oral Radiol* 2013; 116: 392-397.
9. Pandit RT, Park AH. Management of pediatric ranula. *Otolaryngol Head Neck Surg* 2002; 127: 115-8.
10. Zhao YF, Jia Y, Chen XM, Zhang WF. Clinical review of 580 ranulas. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2004; 98: 281-7.
11. Yoshimura Y, Obara S, Kondoh T, Naitoh S. A comparison of three methods used for treatment of ranula. *J Oral Maxillofac Surg* 1995; 53: 280-2.