Congenital Ranula in a Newborn: A Rare Presentation

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Abstract Ranulas are cystic lesions in the floor of the mouth. Case reports published worldwide have been very few. They are formed either as retention cyst or as pseudocyst due to extravasation of mucus in the surrounding tissue. We report the case of a full term female neonate with a congenital ranula in the floor of mouth on left side. The swelling caused no discomfort or complication and hence no immediate intervention was required. The ranula was treated by aspiration using a wide bore needle and did not recur on 4 months follow up. Other methods of treatment include excision of ranula, marsupialization, cryosurgery, sclerotherapy. As many congenital cysts resolve or rupture spontaneously, they should be observed for potential resolution for several months in uncomplicated cases.

Keywords Congenital ranula · Cystic swelling—floor of mouth · Aspiration

Introduction

A congenital ranula is a cystic malformation in the oral cavity caused by fluid collection either due to disruption of minor salivary ducts leading to extravasation of mucus in adjacent structures (not lined by epithelium) or by blocked duct (due to atresia, osteal adhesion or trauma) causing proximal expansion and a mucus retention cyst seen in neonates, lined by salivary duct epithelium [9].

Ranula is the term used for a mucocele or retention cyst of the sublingual gland. The term is derived from the Latin

word Rana “frog” because the blue translucent swelling in the floor of mouth resembles the underbelly of frog [4].

Ranula is classified as being simple or plunging. A simple ranula involves the sublingual space only whereas a plunging ranula extends posterior to the mylohyoid muscle into the neck [4].

Simple ranulas are mostly asymptomatic but can lead to airway obstruction [4].

A ranula is most commonly observed as a bluish cyst located below the tongue. It may fill the mouth and raise the tongue. Typically, these are painless masses that do not change in size in response to chewing, eating, or swallowing [7].

Treatment is controversial. Some recommend early surgical marsupialization to prevent complications, such as sialadenitis. Others recommend observation with surgical intervention only if airway obstruction or feeding difficulties arise. Four to six Neonatal imperforate ducts may resolve spontaneously with feeding [8]. Other surgical treatment options are needle aspiration, excision of the ranula with or without ipsilateral sublingual gland excision, marsupialization, and cryosurgery. Sclerotherapy has shown good results as well. As many congenital cysts resolve or rupture spontaneously, they should be observed for potential resolution for several months in uncomplicated cases [2].

Case Report

A female full term neonate was born to a healthy 30 year old G1P1 female named S at the obstetrics and gynecology department, Krishna Hospital and Research Centre, Haldwani, Nainital, UA, India. Birth weight of the baby was 2.9 kg. On the first day of life her mother noted a

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swelling under the child's tongue. The new born was referred by the attending pediatrician to the ENT department for evaluation and management of a cystic swelling present in the floor of the mouth (Fig. 1).

On examination, grossly, the swelling was bluish, translucent, $1.5 \times 1 \text{ cm}^2$ approx., non pedunculated, round to oval in shape, regular margin, smooth surface, non pulsatile, does not change in size in response to chewing, eating, or swallowing, arising from the left side of the floor of mouth and raising the tongue slightly but causing no difficulty in feeding and no airway obstruction. On palpation, the swelling is soft, non tender, fluctuant, $1.5 \times 1 \text{ cm}^2$ in size, smooth, cystic, does not bleed on touch, and shows translucination, without any transmitted pulsations.

General examination and rest ENT examination was unremarkable.

Aspiration of the cyst was done using a wide bore (18G) needle and syringe. Straw colored 1 ml fluid was aspirated and sends for cytology. There was no significant bleeding and no local or general anesthetic was used. Analysis of fluid from ranula demonstrates mucus with prominent histiocytes. Mucin and foamy macrophages are observed. Occasionally, partial epithelial linings are observed. The cyst did not recur on 4 months of follow up (Fig. 2).

Discussion and Conclusion

Congenital ranula is a rare entity. The prevalence of congenital ranula is 0.74% [9].

Zhao et al., in a review of 580 cases reported that ranulas are most prevalent in the second decade of life and are slightly more common in females (M/F = 1/1.2) but a distinct male predilection was noted for the plunging ranula (M/F = 1/0.74). Oral ranulas most commonly involved the

Fig. 2 Post aspiration disappearance of swelling

left side (L/R = 1/0.62), while the plunging & mixed the right side [5].

Onderglue et al. reported a case of congenital ranula in a developing fetus displacing tongue antero superiorly [1]. Anticipating airway obstruction, an ex utero intra partum treatment (EXIT) procedure was done at 38 weeks gestation and management by simple aspiration of the cyst fluid prior to ligation of umbilical cord was done, with no recurrence at 6 months follow up [3].

Robert Steelman, MD, DMD, and Angela Zimmerman, MD, of the Oregon Health and Sciences University reports a case of congenital ranula which resolved spontaneously and did not recur on at 20 months follow up [6].

The occurrence of congenital ranulas is associated with imperforate salivary ducts. Hoggins et al. reported ranula-like lesions in two neonates. No evidence of trauma could be found during surgical exploration, and the lesions were attributed to congenital atresia of the submandibular duct orifices. Rees notes a ranula in a newborn male that was decompressed but recurred 2 weeks later and then spontaneously ruptured. No recurrence was noted over 1 year, and the author observed that ranulas in neonates were due to atresia of the submandibular or sublingual salivary glands [10].

Evidence suggests that imperforate ducts may resolve spontaneously if rupture takes place during feeding. The ranula-like lesion presented in this report was however, decompressed by aspiration and did not recur over a 4 month period.

Fig. 1 Picture of ranula

References

1. Onderglue L, Saygan-karamuvsel B, Deren D, Bozdog G et al (2003) Prenatal diagnosis of ranula at 21 weeks of gestation. *Ultrasound Obstet Gynecol* 22:399–401

2. Pandit RT, Park AH (2002) Management of the pediatric ranula. *Otolaryngol Head Neck Surg* 127:115–118
3. Paul DK, Alfred S (2007) Management of mucocoele and ranula. In: Eugene NM, Robert LF (eds) *Salivary gland disorders*, vol 10, pp 177–183
4. Richard JS, Steven PC, James SR (2005) Pediatric salivary gland diseases. *Salivary Gland Dis Surg Med Manag* 8:94–113
5. Zhao YF, Jia Y, Chen XM, Zhang WF (2004) Clinical review of 580 ranulas 2004. *Oral Surg Oral Pathol Radiol* 98:281–283
6. <http://www.consultantlive.com/display/article/10162/33747>
7. <http://emedicine.medscape.com/article/847589-workup#a0723>
8. <http://www.ncbi.nlm.nih.gov/pubmed/16770600>
9. <http://www.sonoworld.com/fetus/page.aspx?id=1353>
10. <http://cpj.sagepub.com/content/37/3/205.extract>