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PLUNGING RANULA PRESENTING AS A SUBMANDIBULAR SWELLING – A RARE CASE REPORT

Otorhinolaryngology

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ABSTRACT

A Ranula is a fluid filled collection or a retention cyst that is seen mostly in the floor of the mouth or under the tongue. It is filled with cystic fluid which has leaked from the damaged salivary gland. If the ranula stays in the mouth underneath the tongue it is called simple ranula and if it grows down into the neck it is called plunging ranula. It can result from a blocked salivary gland. Instead of the saliva draining into the mouth from the gland, it drains into the nearby tissues forming a retention cyst. They are more prevalent in teenagers and young adults. We are delineating a case of plunging ranula extending up till the right submandibular region of a 12 year old male which was treated successfully by surgical excision.

KEYWORDS

Ranulas, Plunging Ranulas, Retention cyst , Marsupialisation

INTRODUCTION

Ranula is manifested as a soft bluish translucent swelling sublingually denoting the underbelly of a frog, hence the name "Ranula" which is derived from a latin word meaning frog. They occur more commonly in females and often appear early in the patient's life in the second or the third decade.

Hippocrates described Ranulas and thought that they were secondary to inflammation. Paré thought that ranulas may represent descent of brain or pituitary matter.

Simple Ranulas are confined to the sublingual space whereas Plunging Ranulas (Diving ranula/Cervical ranula) extends into the submandibular space and presents as neck masses.

As a Simple Ranula enlarges it dissects along fascial planes beyond the confines of the sublingual space, either around the posterior edge of the mylohyoid muscle, or directly through a deficiency of the mylohyoid muscle (mylohyoid boutonniere)

Whether simple or of the plunging type, most ranulas have no epithelial lining and are simply pseudocysts lined by a condensation of connective tissue at the periphery of the collection, formed in response to the inflammatory effect of the salivary secretions . The fluid within the ranula closely resembles the normal secretion of sublingual salivary gland.

Origin of ranula can occur due to trauma (most common) to the ducts of salivary gland like biting the cheek too hard or getting hit in the face, a blocked or damaged salivary gland, chronic inflammatory conditions like sarcoidosis and Sjogren syndrome.

Clinically Simple Oral Ranulas may present as a bluish, soft , painless and cystic swelling in the floor of the mouth and if they are Plunging they may present as submental or submandibular neck masses. This swelling may interfere with speech, swallowing, mastication and even respiration as it displaces the tongue in an upward and medial direction. On examination, fluctuation and transillumination test are positive. If any part of soft Ranula is solid on palpation then there might be a possibility of a neoplasm.

The diagnosis is approached after a combined clinical examination , radiographic (MRI most commonly) and various histopathological studies(biopsy ,FNAC)

Ranulas are treated by various modalities which include simple surgical excision, marsupialisation, aspiration, cryosurgery , laser ablation and electrocautery.

The recovery time following ranula surgery is one to two weeks. During this time, the incision will heal, and the stitches will dissolve.

Considering this background information we intend to present a rare case of Plunging Ranula extending upto the submandibular region presenting as a submandibular swelling.

Case Report

A 12 year old male child presented in the ENT OPD with a 9 month history of swelling in the floor of the mouth . The swelling was initially of a pea size and it gradually increased to orange size in the floor of the mouth in a span of 9 months.

The patient also complained of right lateral swelling in the submandibular region in the neck since 2 months. She also had difficulty in mastication and swallowing food because of swelling below the tongue.

On examination soft cystic swelling of 2* 3 cm size was seen in the floor of the mouth and it was bluish translucent in colour. The swelling was soft and cystic in consistency both in the floor of the mouth and right submandibular region. Fluctuation and transillumination test when done were positive.

Extra oral examination revealed a swelling of size 3*3 cm in the submandibular region which was also soft in consistency. The swelling extended 2 fingers below the angle of mandible.

FNAC was advised which showed presence of many macrophages in a background of mucinous material along with scattered polymorphs.

A provisional diagnosis of Ranula was made confirmed by an MRI scan. An MRI revealed homogenous cystic malformations surrounding the sublingual area in the submandibular region.

The patient was planned for Excision of Plunging Ranula through transcervical approach under General anaesthesia. The excised mass was sent for histopathological evaluation which showed presence of cavity containing mucin, abundant epithelioid foamy histiocytes (muciphages), neutrophils and granulation tissue [Figure No A&B]. Procedure was uneventful and after 2 months of follow up patient was

stable and symptom free.

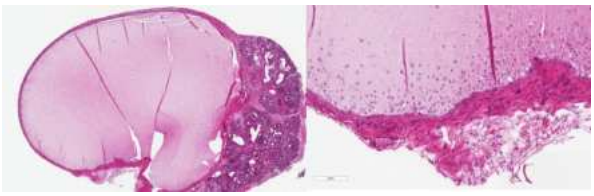

Figure: A&B showing a cystic cavity showing scattered muciphages along with polymorphs in a mucinous background [H&E, A-20X; B-40X]

DISCUSSION

A Ranula is a blue-tinted or clear cyst in the floor of the mouth caused by a blockage in the sublingual salivary gland[1]. The growth can vary in size, depending on the severity of the condition. Some of these cysts remain small in size. Others grow large and can create problems. When a Ranula growing at a fast pace ruptures, it's called a plunging ranula.

The prevalence of Cervical (Plunging) Ranulas is not known; however, these lesions are considered uncommon. The number of ranulas that represents a true retention cyst ranges from less than 1% to 10%[2].

Clinically it manifests as two major forms namely Simple and the other called a Plunging Ranula[3]. The most common clinical presentation of a Ranula is as a blue colored swelling located beneath the tongue, which may elevate it. On palpation, ranula is fluctuant, freely movable, and nontender with most reported cases measuring about 4–10 cm. The submandibular space is their usual location, and they are covered by an intact overlying skin[4] .

Plunging Ranula a non epitheliased cyst that forms when mucus escapes from the sublingual gland and via the mylohyoid muscle herniates into the submandibular space and beyond [5]. Other names for this condition are as follows: cervical ranula, diving ranula, deep ranula, and oral ranula with cervical extension. It is a mucus extravasation pseudocyst arising from the sublingual gland that extends into the neck through the muscular dehiscence for the neurovascular bundle of the mylohyoid muscle[6].

The diagnosis is determined by a combination of history, clinical presentation and examination, imaging and histopathological studies[7]. The patient presents with a bold and fluctuant swelling in the neck. The diagnostic tools used are CT scan, MRI and FNAC after proper history taking and clinical examination[8]. However, MRI is the most sensitive method for the diagnosis of a Plunging Ranula[9]. TAIL SIGN is seen as a tapered continuation of the cervical portion of the ranula into the sublingual space on CT and MRI imaging is to be pathognomonic of a Plunging Ranula[10].

CONCLUSION

Ranula can either be a mucus retention cyst or a pseudocyst from mucus extravasation that is confined into the floor of the mouth. A Plunging Ranula extends into the neck through muscular dehiscence of the mylohyoid muscle into the submental or submandibular triangles of the neck.

A thorough and complete analysis of clinical presentation, history, examination, imaging and histopathological findings is extremely important for the diagnosis. Surgical resection is the imaging modality of choice as other modalities like Marsupialisation, Ablation and Cryosurgery have higher chances of recurrence.

- **Plunging Ranula- Floor Of Mouth**
- **Presenting As Submandibular Swelling**

- **Plunging Ranula – Intraoperative Picture**

REFERENCES

1. Kim PD, Simental A., Jr Treatment of ranulas. Oper Tech Otolaryngol. 2008;19:240–242.
2. Chung IK, Lee HJ, Hwang DS, Kim YD, Park HR, Shin SH, et al. Partial sublingual glandectomy with ranula excision: a new conservative method for treatment. J Korean Assoc Oral Maxillofac Surg. 2012;38:160–165.
3. Nilesh K, Malik N, Patil P, Chapi M: Large plunging ranula presenting as isolated neck swelling: steps in diagnosis and surgical steps in management. *J Clin Diag Res* 2015;9(6):MD01–MD03.
4. Sharma P, Sharma R, Nagrath S: Plunging ranula treated by combination of intra oral and extra oral approach: a rare case report. *Int J Res Dev Pharm L Sci* 2015;4(5):1766–1769.
5. PangCE,LeeTS,PangKP,PangYT.Thoracic ranula: an extremely rare case. J Laryngol Otol 2005; 119: 233-4.
6. S.Iida,M.Kogo,G.Tominaga,andT.Matsuya,"Plungingran- ula as a complication of intraoral removal of a submandibular sialolith," British Journal of Oral and Maxillofacial Surgery, vol. 39, no. 3, pp. 214–216, 2001.
7. Zhi K, Gao L, Ren W. What is new in management of pediatric ranula? Curr Opin Otolaryngol Head Neck Surg. 2014;22:525–529.
8. Harrison JD. Modern management and pathophysiology of ranula: literature review. Head Neck. 2010;32:1310–1320.
9. Kumar, A., Kishore, M., Sinha, G., & Gangwani, S. (2024). Plunging Ranula Presenting as a Submental Swelling – A Rare Case Report, 13(3), 46–47. https://doi.org/10.36106/ijsr
10. Baurmash HD. A case against sublingual gland removal as primary treatment of ranulas. J Oral Maxillofac Surg. 2007;65:117–121.