

Case Report

Plunging ranula in 26 years old male: a case report

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ABSTRACT

Ranula is a bluish translucent cystic lesion in the floor of mouth. It can be true cyst occurring due to obstruction of the sublingual gland or a minor salivary gland or a pseudocyst as a result of ductal injury leading to extravasation and accumulation of saliva in surrounding tissues. Two variants of ranula are described in the literature: simple oral ranula and deep diving or plunging ranula. We report a case of plunging ranula with both oral and cervical components which is treated successfully by surgical excision. This case report involves an unusually large ranula involving floor of mouth with cervical extension, more towards left side, in a 26 years old male. It is successfully removed in-toto by transcervical approach. The patient was followed up on a regular basis and was disease free.

Keywords: Plunging ranula, Sublingual gland, Cystic lesion, Submandibular gland

INTRODUCTION

The term ranula is a Latin word meaning frog.¹ It refers to bluish translucent cystic lesion in the floor of the mouth resembling the underbelly of frog. Plunging ranula otherwise known as cervical ranula is a nonepithelial-lined salivary gland cyst that forms following mucus escape from sublingual gland and its subsequent herniation via the mylohyoid muscle into submandibular space and beyond.² It is a cystic extravasation mucocele that arise from the sublingual gland and usually from a torn duct of Rivinus. Fluid from the obstructed gland penetrates between the fascial planes and muscle of the tongue's base to the submandibular space. Cervical ranula has a prevalence rate of 0.2-0.9 cases for every thousand people and represent 6% of all oral sialo cysts.³ It occurs secondary to obstruction or trauma to the sublingual duct. Current consensus supports mucus extravasation as the causative factor.

Types of ranula are: simple or oral, plunging or cervical, and mixed or sublingual plunging ranula with both an oral and cervical component.⁴

Diseases, such as branchial cleft cysts, dermoid cysts, abscesses, cystic hygroma, laryngocele, lymphadenopathy, thyroglossal duct cyst, and salivary gland should be considered in the differential diagnosis. If the lesion quickly grows, deep neck infections should be considered.⁵

CASE REPORT

A 26 years old male reported to ENT OPD with chief complaint of swelling of the floor of mouth since, 5 years and swelling of the left submandibular region since, 4 years. It was gradual in onset and progressive in nature. Patient reported that the swelling enlarged during last couple of months. He had no history of trauma. Mastication and swallowing of the patient were difficult due to large size of the swelling (which was almost 4×3 cm in size) and tongue movements were obstructed.

Intraoral examination revealed a blue, translucent, soft, fluctuant, non-tender swelling of approx. 4×3 cm in size on the floor of mouth (Figure 1).



Figure 1: Swelling on the floor of the mouth.

Extraoral examination revealed a smooth, soft, fluctuant, non-tender, translucent swelling with well-defined margins of size 8×6 cm was seen in the left submandibular region (Figure 2 and 3).



Figure 2: Anterior view of the neck swelling.



Figure 3: Lateral view of neck swelling extending to submandibular region.

A clinical diagnosis of plunging ranula was made. Ultrasound revealed a well-defined cystic mass with smooth margins and measuring about 9×7 cm in submental region and extending to left submandibular region, with no internal echoes. FNAC of the patient

from the swelling on the submental region showed singly scattered and small group of anucleate squames against a background of keratinous debris admixed with red blood cells and was inconclusive.

Surgery

Transcervical 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. A 5 cm horizontal incision was made along the skin crease of left submandibular region and incision was deepened till the cervical component of the ranula was well exposed. Blunt dissection was done and all the soft tissues surrounding the ranula were separated and it was followed, through the mylohyoid muscle, till the floor of mouth and roof of the ranula was dissected. Complete ranula was removed in toto and delivered through cervical wound. Layer wise closure of the wound was done. There were no specific complaints during post-operative period and on regular follow up, patient was disease free.



Figure 4: Ranula exposed through transcervical approach.



Figure 5: Ranula of size 10×7 cm removed.

Histopathological report shows scattered and small group of anucleate squames against a background of keratinous debris admixed with red blood cells (Figure 6).

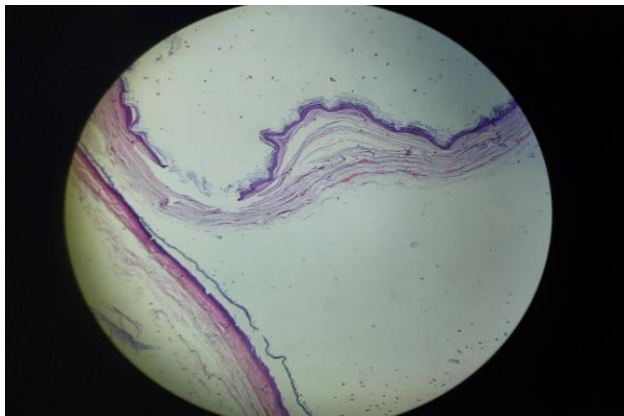


Figure 6: Histopathological findings of the swelling.

DISCUSSION

Ranula is a cystic swelling that appear in the floor of the mouth and is mostly unilateral. A clinical variant ‘plunging ranula’ occur when the fluid pressure of the mucus dissects through the mylohyoid muscle to reach the submandibular area.⁶⁻⁸ The prevalence of ranula is about 0.2 cases per 1000 persons and accounts for 6% of all oral sialo cysts. Only 1% to 10% of the ranulas are true retention cysts. Ranulas usually occur in children and young adults. The peak frequency of ranula occurs in the second decade of life.⁹ The cervical variant tends to occur a little later in the third decade.

Here our patient is also a young male in the third decade of life with an abnormally large plunging ranula. Plunging ranula generally appear in conjunction with an oral ranula. Rarely they can arise independently of the oral component. In the absence of oral swelling, the clinical diagnosis of ranula may not be suspected. The foremost etiology of ranulas is from the process such as partial obstruction of a sublingual duct. This can lead to a formation of an epithelial -lined retention cyst, which occurs in <10% of all ranulas. Second most common cause is trauma that causes direct damage to the duct or deeper areas of the body of the sublingual gland, leading to extravasation of mucus and formation of pseudocyst.

Plunging ranulas arise in neck by one of the following mechanisms. Firstly, the sublingual gland may project through the mylohyoid, or an ectopic sublingual gland may exist on the cervical side of the mylohyoid. This explains most plunging ranulas that exist without an oral component. Secondly, a dehiscence or hiatus in the mylohyoid muscle may occur. This defect is observed along the lateral aspect of the anterior two-thirds of the muscle. Through this defect, the mucin from the sublingual gland may penetrate to the submandibular space. Thirdly, approximately 45% of plunging ranulas

occur iatrogenically after surgery to remove oral ranulas.¹⁰⁻¹² The cervical ranula appears as a symptomatic, continuously enlarging mass that may fluctuate in size. The mass is non-tender and freely movable and not associated with any lymph node chains. Like oral ranulas, the mass is usually unilateral however, it may cross the midline.

Here in our case, the mass seems to be of left side origin. To further evaluate the origin and extension of the ranula, radiographic diagnosis is favoured. FNAC may be done to assess the cytology of the swelling which may influence the treatment plan. This is generally done to rule out the suspicion of malignancy. Plunging ranula may be approached through trans-cervical or trans-oral approach.¹³ Here we employed trans-cervical approach even though there is a risk of injury to marginal mandibular nerve, cervical fistula and scarring because the cervical component is too large to be removed through oral approach. In trans-cervical approach the cervical component is removed and then the oral component of the ranula is removed after division through the mylohyoid muscle. The recurrence rate of complete removal of the ranula alone is 18.7-88% whereas removal of ranula and sublingual gland has much lower recurrence rate of 0-3.8%.¹⁴ But here considering the age of our patient removal of ranula alone was performed by trans cervical approach. On follow up the patient didn't show any signs of recurrence till date and his facial contour was preserved well after surgery.

CONCLUSION

A comprehensive diagnosis of plunging ranula can be made only on a combination of clinical, imaging and histologic findings. The treatment of plunging ranula is controversial and the treatment modality with the lowest recurrence rate and minimum morbidity should be planned.

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