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Ranula Arising From Sublingual Gland

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Abstract: Oral ranula is a retention cyst arising from the sublingual gland on the floor of the mouth as a result of ductal obstruction and fluid retention[1]. Management of ranula becomes controversial. Various surgical options have been suggested in the literature for management of sublingual ranula which includes excision of the lesion, marsupialisation, incision and drainage, resection of sublingual gland. There is high recurrence rate when excision/marsupialisation has been performed even in cases of simple ranula. To avoid damage to adjacent structures like submandibular duct and lingual nerve, excision of the ranula along with its lining is done our case.
Keywords: Ranula, Sublingual gland, Resection.

INTRODUCTION

The word ranula has been derived from the latin word "Rana" which means the frog and the term ranula has been derived because the swelling resembles the belly of a frog. Ranula occurs most commonly in sublingual duct (Bartholin's duct) and less commonly in sub mandibular duct (wharton's duct) and minor salivary glands. Ranula can be formed by retention or by extravasation process. Retention type is due to the partial obstruction of a sublingual duct leading to formation of an epithelial-lined retention cyst which is less common, occurring in about 10% of all ranula[1].

It can also be formed by rupture of excretory duct followed by extravasations of the mucus and accumulation of saliva into the surrounding tissue which forms a pseudo cyst that lacks the epithelial lining [1]. Ranula can be managed conservatively or surgically. Surgical excision of ranula is the standard method of management. The purpose of this article is to report a case of intraoral ranula at right floor of the mouth which was treated successfully by ranula excision along with the removal of the lining under local anesthesia and to discuss the various surgical management options available for the same.

CASE REPORT

A 30-year-old female patient reported to department of OMFS, KVGDC, Sullia with a chief complaint of a lump under her tongue since 2 months. On eliciting the history of the lesion, there was no intermittent change in the size of the swelling and remained the same since 2 months, not associated with any pain or discharge, there was no local rise in temperature. There was no previous history of swelling in the same region and no previous history of injury / surgical procedure involving the floor of the oral cavity. Past medical history revealed that the patient had joint pain and was under Ayurvedic medication for the same. Family history and personal history were not remarkable. On extra oral examination, no gross facial asymmetry noted (fig 1) and there was no punctum or submental or submandibular lymphadenopathy associated. Intraoral examination, inspection of the lesion revealed a 2x1 cm swelling over right side of the floor of the mouth, not crossing the midline, surface overlying the swelling is bluish in colour. Dilated veins were seen over the swelling, transillumination test was positive. On palpation, the swelling was smooth in texture, soft in consistency, non-tender, fluctuant in nature and it is not fixed to the underlying structures (fig 2).

Mandibular anterior occlusal radiograph was carried out to rule out any dental pathology associated with the swelling, which was negative. Based on the clinical examination, provisional diagnosis of the swelling was made as ranula. The case was planned to manage surgically under local anesthesia. With all aseptic conditions standard painting and draping was done, local anaesthesia (lignocaine with adrenaline) was injected, incision was placed over the thin overlying mucosa of the swelling, blunt dissection was performed carefully to separate the lesion from the normal overlying mucosa and the ranula was excised along with its lining in toto (fig3) and the specimen was sent for histopathological examination. The defect was closed primarily with a single simple interrupted suture (fig4). Histopathology of the specimen confirmed the

lesion as ranula. On one month follow up there was no recurrence. Patient is still under follow up.

Fig-1: Preoperative photograph of the patient

Fig-2: Lump over right floor of the mouth- no gross facial asymmetry noted

Fig-3: Intra operative picture

Fig-4: Postoperative picture

DISCUSSION

Ranula is defined as a mucus filled cavity in relation to the sublingual gland present in the floor of mouth [2]. The peak age of occurrence of ranula is second decade and normally found in children and also in young adults [3]. Clinically, ranula can be of three types- sublingual ranula, plunging ranula and sublingual with plunging ranula. Ranula is referred to as plunging ranula when sublingual ranula herniates through the mylohyoid muscle and affects submandibular space resulting in an extra oral swelling. Etiology of ranula can be iatrogenic, or due to trauma to sublingual gland or congenital. Fluid present in ranula is rich in protein and amylase. The high protein content of the fluid in the ranula stimulates inflammatory reaction leading to formation of pseudocyst [4]. Differential diagnosis of sublingual ranula includes abscess in the floor of mouth, neoplastic lesions of the major salivary glands, granulomatous diseases, vascular lesions and differential diagnosis of plunging ranula includes thyroglossal duct cysts, cystic hygroma, dermoid, epidermoid cysts and laryngocele [5]. CT scan, MRI, USG and sialography are the various types of investigations carried out to diagnose ranula. USG becomes inconclusive because of the location of sublingual gland. In CT scan ranula appears as a central cystic lesion with round or ovoid in shape. The most sensitive diagnostic aid for the sublingual ranula is magnetic resonance imaging (MRI). Histopathological examination of the cystic wall is mandatory, to differentiate from the malignant carcinoma arising from the cyst wall and papillary cystadenocarcinoma of the sublingual gland, which may mimic ranula [6]. Injection of sclerosing agents and laser therapy have been suggested as the medical line in management of ranula. Intra-cystic injection therapy with OK-432 is relatively safe and can be used as a substitute for surgery in the treatment of ranula[7]. Paediatric oral cavity ranula may be managed optimally by follow up period of 5 months for spontaneous resolution [8]. Laser ablation and cryosurgery, either alone or after marsupialization, have been used for some patients with oral ranula [9]. Intra-lesional injection of botulinum toxin into ranula has also been suggested in the literature [10]. Surgical management includes incision and drainage (I&D),

marsupialisation, excision of ranula with or without sublingual gland excision. I&D has high recurrence rate of about 80%. Marsupialisation is most commonly preferred than excision of ranula along with sublingual gland resection in order to avoid damage to vital structures such as lingual nerve and submandibular duct and has recurrence rate of about 60%. Total resection of the cyst along with the sublingual gland gives best results as it has less recurrence rate of about 0-2%. In case of plunging ranulas, cervical approach is preferred for excision of ranula along with the removal of sub mandibular gland. In our case, simple ranula excision along with the removal of cystic lining has been done as a conservative, safe approach. It has a better prognosis than marsupialisation and is a conservative method than excision of ranula with total resection of sub lingual gland. If recurrence occurs, total resection of sublingual gland will be the preferred approach. Oral ranulas have not known to have malignant potential, but one case of squamous cell carcinoma has been reported [11].

CONCLUSION

Though resection of sublingual gland is considered to be the most effective treatment for the management of ranula, this procedure is very difficult as it involves an extremely fine mucosa that may rupture on excision also there is risk of injury to the lingual nerve and submandibular duct. Hence, simple ranula excision with removal of cyst lining is suitable and effective treatment for the management of intraoral ranula.

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