PLUNGING RANULA & ITS MANAGEMENT - A CASE REPORT

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A ranula is a type of mucocele found on the floor of the mouth. Ranulas present as a swelling of connective tissue consisting of collected mucin from a ruptured salivary gland duct, which is usually caused by local trauma. Since the etiology of ranula is unknown, treatment is still controversial. However, ranula has recently been speculated due to mucous extravasation into the ambient tissues from a traumatized sublingual gland or duct. Plunging ranula is far less frequently encountered than sublingual type. We report the case of plunging ranula of the 22-year-old female which the total resection of the ranula and sublingual gland was carried out without recurrence for 9 months. As treatment of plunging ranula, excision of the sublingual gland appears to be essential for cure, regardless of whether via intraoral or cervical approach. Intraoral excision is more advisable because of its less invasiveness.

Keywords: Plunging ranula, Sublingual gland, Surgical approach.

INTRODUCTION

A ranula is a type of mucocele found on the floor of the mouth. Ranulas present as a swelling of connective tissue consisting of collected mucin from a ruptured salivary gland duct, which is usually caused by local trauma.[1,2] The latin word rana means frog, and a ranula is so named because its appearance is sometimes compared to a frog's underbelly. The gland that most likely causes a ranula is the sublingual gland. Nonetheless, the submandibular gland and minor salivary glands may be involved.[3]

Appearance of an oral ranula is a fluctuant swelling with a bluish translucent color that somewhat resembles the underbelly of a frog Rana. If it is deeper it doesn't not have this bluish appearance. If it is large (2 or more cm.), it may hide the salivary gland and affect the location of the tongue. Most frequently it stems from the sublingual salivary gland, but also from the submandibular gland. Though normally above the mylohyoid muscle, if a ranula is found deeper in the floor of the mouth, it can appear to have a normal color.[3]

Ranula is categorized into three types: sublingual, plunging, or mixed. The majority is of the sublingual type and plunging ranula is far less frequently encountered. Ranula mostly occurs unilaterally. A ranula below the mylohyoid muscle is referred to as a "plunging or cervical ranula", and produces swelling of the neck with or without swelling in the floor of the mouth. Ranulas measure several centimeters in diameter and are usually larger than mucoceles. As a result, when ranulas are present the tongue may be elevated. As with mucoceles, ranulas may be subject to recurrent swelling with occasional rupturing of its contents. When pressed, they may not blanch.

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SYMPTOMS

Ranulas are usually asymptomatic, although they may change gradually in size, shrinking and swelling. The overlying skin is usually intact. The mass is not fixed and is also not tender. The mass is not connected to the thyroid gland or lymph nodes. The mass may not be well defined. If it gets large enough it may interfere with swallowing, and cervical ranulas may even interfere with breathing. Some pain may be connected with very large ranulas.

HISTOLOGICAL FEATURES

Microscopically, ranulas are cystic saliva filled distensions of salivary gland ducts on the floor of the mouth along side the tongue, and are lined by epithelium. A salivary mucocele, in contrast is not lined by epithelium.

TREATMENT

Several treatments for ranula have been proposed, including excision of the ranula with or without removal of the sublingual gland, marsupialization with or without cauterization of the roof of the lesion, excision of the lesion and sublingual gland, drainage of the lesion, and micro-marsupialization.[3-9] Ranulas are often treated by "marsupialization." Now, some medical terms are completely incomprehensible. (Even if you knew Latin, you would never guess that dura mater, or "tough mother," had anything whatsoever to do with the brain.) But "marsupialization" is actually quite straightforward. Marsupials are mammals with pouches, such as kangaroos. When a surgeon "marsupializes" a cyst, he or she unroofs it to create an open pouch. This deflates the cyst, and the problem is usually solved unless the "roof" heals in a closed position, whereupon the cyst will re-form.

CASE REPORT

A 22 year old female reported to us with a chief complaint of swelling which appeared on the left side of the floor of the mouth about two years ago (Fig 1). The swelling had been lanced repeatedly and "white of egg" material liberated, but for the last few months she has not noticed it. About two months ago the swelling appeared in the floor of the mouth on the right side, this had also been opened and had reappeared.

Examination

On the left side in the anterior submaxillary region, she had a swelling about 2 cm. across which could be seen but hardly felt except when she swallowed. When she swallowed it became very tense and prominent and could be felt. Bidigital palpation of the floor of the mouth was negative anteriorly. Posteriorly in front of the fauces there was an indistinct fullness, but pressing on this point with one finger and on the swelling in the submaxillary region with the other, a distinct sense of fluctuation could be obtained. On the right side she had a typical ranula extending from the midline and apparently lost posteriorly in the neighborhood of the first molar tooth (Fig 2). A provisional diagnosis of a ranula was made. An occlusal radiograph was taken and no findings were observed (Fig 3). The patient's medical history did not reveal any pathological condition. Therefore, surgical excision of the lesion was proposed to the patient.

TREATMENT

The surgical intervention was carried out in Department of Oral and Maxillofacial Surgery under local anesthesia with 2% lidocaine containing 1:100,000 epinephrine. Excision of ranula and removal of the sublingual gland were performed via an intraoral approach. The ranula was found to be extending below the mylohyoid muscle. The cyst could be relatively easily dissected from the submandibular gland and therefore this gland and Wharton's duct remained. The cyst lining was partially ruptured due to a tight adhesion to the hypoglossal nerve. Histological examination revealed pseudocyst that has no lining with epithelial component. The histologic, clinical and radiologic findings were compatible with plunging ranula. Interrupted sutures (3-O, silk) were placed. The patient was given a prescription for an antibiotic and an analgesic. Sutures were removed after one week. Follow-up at 9 months showed no evidence of recurrence (Fig 4).

DISCUSSION

Pandit and Park[6] advocated removal of the ranula and sublingual glands as the treatment of choice for all ranulas, to preclude reappearance of the lesion. According to Baurmash,[3] ranulas should be treated primarily in a conservative manner, with marsupialization and gauze packing. Haberal et al[8] observed no differences between marsupialization and excision of the ranula in terms of surgical outcome. According to these authors, total excision is indicated for recurring ranula. Compared with marsupialization, micro-marsupialization is simpler to perform, causes less postoperative discomfort, and does not require special care to avoid postoperative complications. Marsupialization produces a higher degree of discomfort and requires hygienic care to prevent local infection by microorganisms.

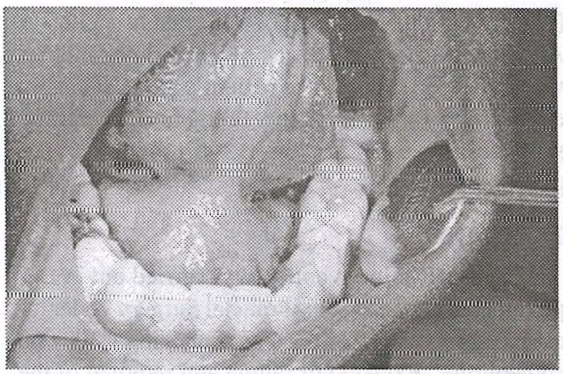


Fig 1: Swelling on the left side of the floor of the mouth.

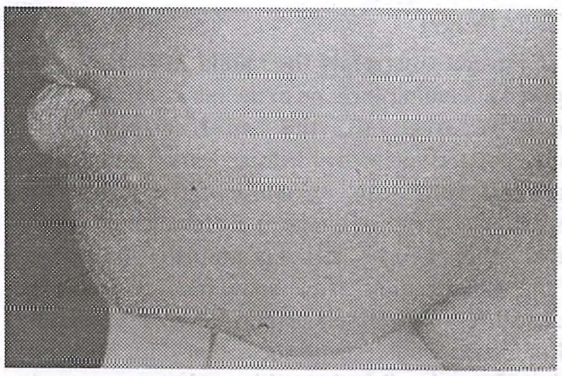


Fig 2: Extra orally swelling extending from the midline and apparently lost posteriorly in the neighborhood of the first molar tooth.

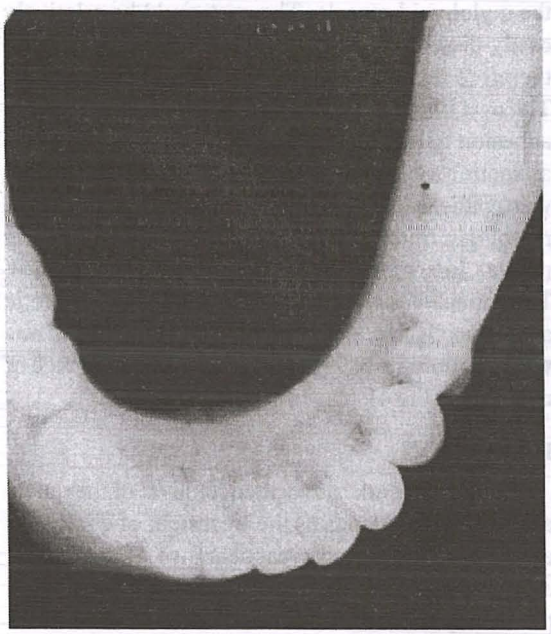


Fig 3: Mandibular occlusal radiograph.

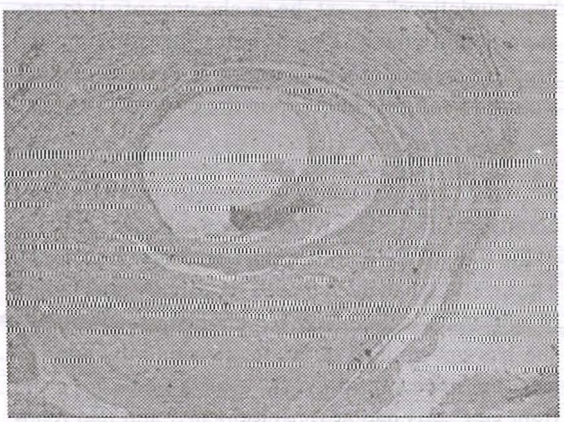


Fig 4: Histopatholical report

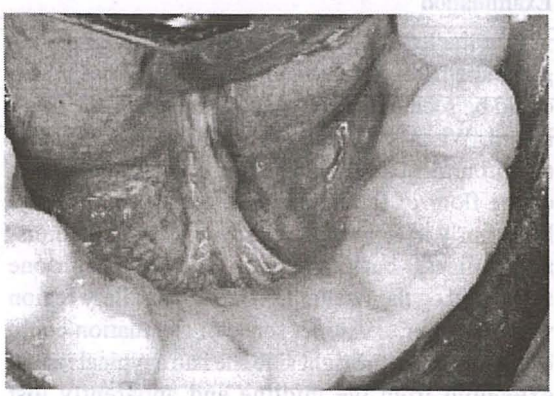


Fig 5: 9 months post-operative photograph

Treatment of ranula is still obscure due to association with a confusion of its pathogenesis. Recent reports described ranula formation was mostly related to trauma and/ or congenital anomaly of the sublingual gland and that mucous extravasation from severed duct or sublingual gland presented as ranula.[10,11] In addition, a number of literatures indicated that excision of the sublingual gland appeared to be essential for cure, otherwise, recurrent lesion was frequently encountered.[10-14]

The present case exhibited fluid retention, which arose from sublingual point extending to the submandibular space and this may support the speculation of literature. Intraoperatively, the submandibular gland was observed to have no relation to ranula and thereby remained. The plunging ranula was treated by simple evacuation with the sublingual gland removal. Even though different treatment modalities were present, excision of the sublingual gland was accomplished and this may lead to a satisfactory result that no recurrent lesion has been encountered to date.

CONCLUSION

As management of plunging ranula, excision of the sublingual gland appears to be essential for cure, regardless of whether via intraoral or cervical approach. Intraoral excision was considered more advisable because of its less invasiveness.

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