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Research Article

PLUNGING RANULA TREATED BY COMBINATION OF INTRA ORAL AND EXTRA ORAL APPROACH: A RARE CASE REPORT

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ABSTRACT

A ranula presents as a cystic swelling in the floor of mouth. It occurs as a mucous extravasation from sublingual salivary gland, and may extend through the mylohyoid muscles into the neck, and is then known as "Plunging Ranula". Its surgical treatment is by removal of the Sublingual gland associated with the swelling. The present report reviews a case of plunging ranula treated by a combination of intra oral and extra oral approach.

Keywords: Plunging Ranula, Excision, Intra oral and Extra oral approaches, Sublingual gland.

INTRODUCTION

The term ranula is derived from the Latin word rana, meaning frog, and describes a blue translucent swelling in the floor of the mouth reminiscent of the underbelly of a frog.[1] It rarely occurs, with the incidence being 0.11%.[2] Females are slightly more affected than males (1:1.4),[3] and it presents most frequently in the second and third decades of life, with an age range of 3-61 years.

Plunging ranulas occur less commonly than ranulas. Its synonyms include deep, diving, cervical, or deep plunging ranula and oral ranula with cervical extension. The present report reviews a case of plunging ranula treated by a combination of intra oral and extra oral approach.

CASE REPORT:

A 43 year old male reported to the Department of Oral and Maxillofacial Surgery with a chief complaint of swelling in the floor of mouth since 15 days. History revealed that it was a case of recurrent swelling, treated previously by an ENT surgeon using marsupialisation. On clinical examination a diffuse swelling measuring about 2 cm in diameter was present in the right submandibular triangle. Swelling was soft, fluctuant, non-progressive, non-tender, with no localized temperature, and was moving on swallowing. Intra orally floor of mouth was raised on right side with no discoloration of overlying mucous membrane. Oral hygiene was good and no dental abnormality was detected. On aspiration a viscous yellowish fluid was aspirated with similar appearance of saliva. No abnormality was detected on mandibular occlusal view radiograph. Ultrasonography was done to detect the dimension of lesion which was 13 X 11 mm in diameter. On basis of these findings a diagnosis of Plunging Ranula was made.

SURGICAL PROCEDURE:

It was planned to excise the sublingual gland of the right side, along with the ranula under general anesthesia, using a combination of intra oral and extra oral approach. An intra-oral incision was made in the floor of the mouth on the right side, over the mylohyoid muscle, and blunt dissection was carried out to expose the sublingual salivary gland. The gland was carefully removed, preserving the lingual nerve and ligating the duct of the gland before it joined the duct of the submandibular gland. Cervical part of the ranula was excised using blunt dissection through the mylohyoid. Layered closure was done using 3-0 vicryl and 3-0 mersilk sutures. To prevent any collection in the cervical part (dead space), a corrugated rubber drain was placed for 48 hours, followed by a pressure dressing to prevent any post-operative swelling.

DISCUSSION:

Etiology: Congenital ranulas can arise secondary to an imperforate salivary duct or ostial adhesion.[4] These are very rare and have been known to spontaneously resolve. Post-traumatic ranulas arise from trauma to the sublingual gland, leading to mucus extravasation and formation of a pseudocyst.[5] The more appropriate term for this may be mucus escape reaction (MER).

Pathophysiology: Ranulas can be formed either from partial obstruction of a sublingual duct, leading to formation of an epithelial-lined retention cyst (this is unusual, occurring in less than 10% of all ranulas), or trauma can lead to formation of ranulas. Trauma causes direct damage to the duct or acini, leading to mucus extravasation, which causes formation of a pseudocyst.

Figure 1: Pre-operative Extra oral view

Figure 2: Pre operative Intra oral view

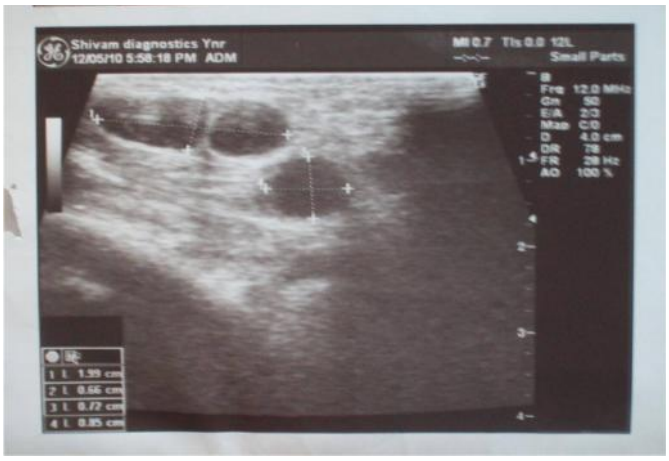

Figure 3: Pre operative Ultrasonography

Figure 4: Intra oral incision

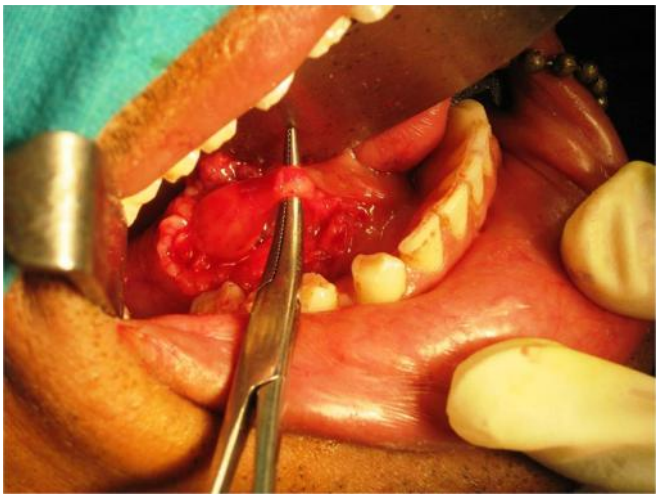

Figure 5: Sublingual gland exposed

Figure 6: Excised Sublingual gland

Figure 7: Post operative Extra oral view

Figure 8: Post operative Intra oral view

Plunging ranulas can arise in the neck by one of the following mechanisms:

1. 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.[6]
2. The cyst may penetrate through the mylohyoid.[7]
3. A duct from the sublingual gland may join the submandibular gland or its duct, allowing ranulas to form in continuity with the submandibular gland. Therefore, the ranula accesses the neck from behind the mylohyoid muscle.[8]

Presentation: Ranulas are most commonly observed as a bluish cyst located below the tongue. They 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. Occasionally, pain may be involved.[8]

Plunging ranulas can manifest as neck swelling in conjunction with, or independent of, a floor-of mouth cyst. Occasionally, squeezing the mass causes swelling in the floor-of-mouth cyst. Most reported plunging ranulas are 4-10 cm in size and are usually found in the submandibular space. They have been reported to extend into the submental region, the contralateral neck, the nasopharynx up to the skull base, the retropharynx, and even into the upper mediastinum.[9]

Complications of surgical procedure: The complications that may arise as a result of surgical removal of sublingual salivary gland may be parasthesia to the lingual nerve (25%), injury to the Wharton duct with the possibility of obstructive sialadenitis, and ductal laceration leading to salivary leakage. Other complications included hematoma, infection, and dehiscence of the wound, all of which were uncommon.

In case of plunging ranula risk for paresis and paralysis of the marginal mandibular nerve is increased because the nerve often lies just on the surface of the cyst.

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