PLUNGING RANULA: A CASE REPORT
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ABSTRACT: A ranula is a bluish, transparent, and thin-walled swelling in the floor of the mouth. They originate from the extravasation and subsequent accumulation of saliva from the sublingual gland. The most common presentation of ranula is a painless, slow-growing, soft, and movable mass located in the floor of the mouth. Ranula may be simple or plunging. Simple ranula often present as masses in the floor of the mouth, limited to the mucous membranes. Diving ranulas extend through the facial planes, usually posterior to the mylohyoid muscle into the neck, and present as cervical masses. A 25 yr old male presented with a complaint of a large swelling in the right submandibular region. On plain MRI a fairly large, well defined cystic mass is seen in the right sublingual and submandibular spaces without septae. Provisional diagnosis of plunging ranula is made and excision done by intraoral approach.

KEYWORDS: Ranula, Cystic, Neck, Mylohyoid.

INTRODUCTION: The term “ranula” is used to describe a diffuse swelling in the floor of the mouth caused by either a mucous extravasation or, less commonly, a mucous retention cyst derived from the major sublingual or submandibular salivary glands.¹ The term ranula is used because this lesion often resembles the swollen abdomen of a frog. They are most common in the second decade of life and in females.² Ranulas typically have a bluish appearance and a fairly well-circumscribed, soft, painless, fluid-containing intraoral swelling. Most of the patients with ranula present with a gradually enlarging swelling of the floor of the mouth. The swelling is round or oval, and fluctuant. An intraoral swelling accompanied by a submandibular, cervical, and parapharyngeal extension is often defined as plunging ranula.³ MRI is the most sensitive to evaluate the sublingual gland and its states.⁴

CASE REPORT: A 25-year-old male visited our department complaining of a large painless swelling in the right submandibular region. Intraoral examination there was a small, smooth surface, and movable mass in the floor of the mouth, to right side of the lingual frenulum. The mucous color was normal. The patient had no traumatic or surgical history, and the swelling did not cause difficulty in swallowing or speaking. Routine blood tests and the thyroid profile were within normal limits. T-2 weighed MRI images, showed hyperintense fluid filled cavity in left sublingual space, extending to right submandibular space along the posterior edge of mylohyoid muscle. Under general anesthesia, an incision was made in the right lingual vestibule, and excision of the lesion along with extirpation of the right sublingual gland was performed. At surgery, the cystic lesion was found to be filled with a viscous and yellowish mucous fluid. The histopathologic examination of the specimen from the sublingual gland revealed ruptured acinar cells.
DISCUSSION: Plunging ranula develops if extravasation of mucus occurs beyond the confines of the floor of the mouth through the mylohyoid muscle into the upper neck or submental region, a large cystic swelling develops, that happened in this case. This can usually be defined on MR scanning but is difficulty to clinically differentiate from cystic hygroma. Histologically, hygroma has a simple epithelial lining whereas a ranula is contained by loose connective tissue. It has been reported from 2 to 61 years of age with a slight female preponderance. The pathophysiology involved in extravasation is hypertension in the duct due to obstruction leading to acinar rupture in the salivary gland and then extravasation of the mucus. The initial stage is a traumatic rupture of the excretory duct and the second stage is the extravasation and subsequent accumulation of saliva within the tissue, as shown by experimental studies.

Plunging ranulas arise in the neck by one of the following four mechanisms. Firstly, the sublingual gland may project through the mylohyoid, or an ectopicsublingual gland may exist on the cervical side of 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. Cases of plunging ranula formation have also been reported secondary to surgical procedures for sialolith removal, duct transposition and implant placement. According to Gupta et al., Kalraet al., and Zhao et al. studies the cervical ranula appears as an asymptomatic, continuously enlarging mass that may fluctuate in size. Most reported ranulas are 4–10 cm in size. The overlying skin is usually intact. The mass is fluctuant, freely movable, and nontender.

MRI, which is the most sensitive imaging modality for studying ranula, showed hyper intense fluid filled cavity in left sublingual space, extending to left submandibular space along the posterior edge of mylohyoid on T-2 weighed images. T-1 weighed images showed a well-defined hypointense area suggestive of plunging ranula. Ultrasonography, CT, sialogram and aspiration can be helpful for diagnosis. Thyroglossal duct cyst, branchial cleft cyst, cystic hygroma, submandibular sialadenitis, intramuscular hemangioma, cystic or neoplastic thyroid disease, infectious cervical lymphadenopathy, hematoma, lipoma, laryngocele and dermoid cyst can be taken as differential diagnosis. Clinicians have been using several different methods for the treatment of cervical ranulas.
These include excision of the ranula only, cryosurgery, marsupialization with or without cauterization of the lesion lining, excision of the oral portion of the ranula with the associated sublingual salivary gland or, rarely, the submandibular gland, intraoral excision of the sublingual gland, and drainage of the lesion, and excision of the lesion via a cervical approach, sometimes combined with excision of the sublingual gland. Besides surgical management, CO₂ laser has been used to vaporize ranulas.14

CONCLUSION: The Clinical Diagnosis of Ranula is always kept when a Mass seen in the Neck along different Diagnosis like lesions of submandibular and sublingual glands, of the lymphnodes, granulomatous, vascular, nerve or adipose tissue diseases, branchial and thyroglossal duct cysts, cystic hygroma, laryngocele. The traditional treatment of a plunging ranula was excision by external or by intraoral approach. However as in our case intraoral approach is done without any external scar.

REFERENCES:
# CASE REPORT

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