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WHEN TIME CHANGES THE LESION: A FOUR-YEAR CONGENITAL RANULA IN A CHILD– A CASE REPORT

Oral & Maxillofacial Surgery

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ABSTRACT

Background: Ranula is a mucous cyst arising from the sublingual gland and commonly presents as a pseudocyst without an epithelial lining. Congenital ranulas are uncommon, and persistence over several years is exceptionally rare. Chronic lesions may undergo secondary histopathological alterations that differ from classical descriptions. **Case Report:** A 4-year-old female presented with a painless swelling in the left floor of the mouth that had been present since birth and gradually increased in size. Clinical examination revealed a soft, fluctuant, non-tender swelling measuring approximately 2 × 2 cm, causing elevation of the tongue without dysphagia or speech difficulty. Ultrasonography demonstrated a well-defined anechoic cystic lesion measuring 2.36 × 1.95 cm within the left sublingual space without extension into the submandibular space, suggestive of a simple ranula. Complete surgical excision was performed. Histopathological examination unexpectedly revealed a well-developed fibrous capsule with chronic inflammatory changes and an epithelial lining ranging from non-keratinized stratified squamous epithelium to pseudostratified ciliated columnar epithelium, consistent with a retention-type ranula. The unusually thick capsule was considered secondary to prolonged chronicity. **Conclusion:** This case highlights the rare presentation of a congenital ranula persisting untreated for four years. Long-standing lesions may develop significant fibrous wall thickening and epithelialization, making them histopathologically distinct from conventional mucus extravasation ranulas. Early diagnosis and definitive surgical management are essential to prevent progressive enlargement and associated complications.

KEYWORDS

Congenital Ranula, Pediatric Ranula, Retention Ranula, Floor of Mouth Swelling, Sublingual Gland, Chronic Ranula, Case Report

INTRODUCTION

Ranula is a cystic lesion occurring in the floor of the mouth due to disruption or obstruction of the sublingual salivary gland ducts. The term "ranula" originates from the Latin word *rana* (frog), reflecting the resemblance of the translucent bluish swelling to a frog's underbelly. Ranulas account for approximately 6% of all salivary gland cysts and occur predominantly during the second and third decades of life. Pediatric and congenital presentations are uncommon[3][7][8].

Ranulas are broadly classified into mucus extravasation and mucus retention types. The extravasation type is the most common and lacks an epithelial lining because it represents pooled saliva within surrounding connective tissue. Conversely, retention ranulas possess a true epithelial lining resulting from ductal obstruction[3][7][8].

Congenital ranulas are believed to arise from developmental anomalies of the sublingual gland ducts or prenatal ductal obstruction. Persistent untreated lesions extending over several years are rarely reported. Chronicity may alter both the clinical appearance and histopathological architecture through fibrosis and epithelial metaplasia[3][4][6].

We report a rare case of a congenital ranula in a four-year-old child that persisted since birth, resulting in an unusually thick fibrous capsule with epithelial lining on histopathological examination.

Case Report

A 4-year-old female presented to the Department of Oral and Maxillofacial Surgery with a painless swelling involving the left floor of the mouth. According to her parents, the swelling had been present since birth and gradually increased in size over the preceding four years.

The patient had no history of pain, fever, trauma, dysphagia, speech difficulty, or respiratory distress. No significant medical, surgical, or family history was elicited.

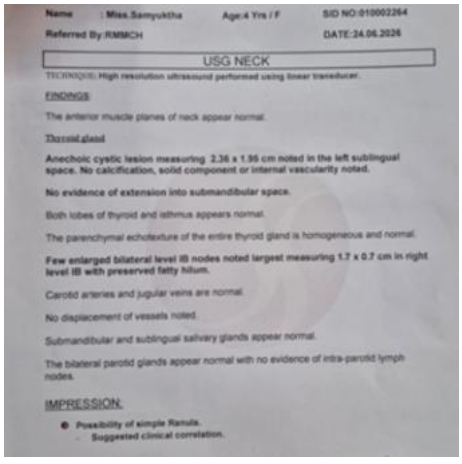
General physical examination revealed a healthy, well-nourished child with stable vital signs. Bilateral Level IB lymph nodes measuring approximately 0.5 × 0.5 cm were palpable, mobile, firm, and non-tender.

Intraoral examination demonstrated a solitary dome-shaped swelling measuring approximately 2 × 2 cm occupying the left floor of the mouth. The lesion extended anteroposteriorly from the lingual alveolar mucosa in relation to teeth 71 and 72 up to the lingual alveolar mucosa

adjacent to tooth 75. Mediolaterally, it extended from the lingual alveolar mucosa toward the midline. The overlying mucosa appeared normal without erythema, ulceration, or evidence of secondary infection. The lesion elevated the left side of the tongue, and movement of the swelling synchronized with tongue movements. On palpation, it was soft, fluctuant, mobile, compressible, and non-tender.

A provisional diagnosis of simple ranula was established.

Ultrasonography of the neck demonstrated a well-defined anechoic cystic lesion measuring 2.36 × 1.95 cm within the left sublingual space. No internal vascularity, calcification, or solid component was identified. There was no extension into the submandibular space, excluding a plunging ranula. Bilateral Level IB lymph nodes exhibited preserved fatty hila, suggesting reactive enlargement. Based on the clinical and ultrasonographic findings, a diagnosis of simple ranula was confirmed.


Name : Miss.Samyuktha Age:4 Yrs / F SID NO:010002264
Referred By:RMMCH DATE:24.06.2026
USG NECK
TECHNIQUE: High resolution ultrasound performed using linear transducer.
FINDINGS
The anterior muscle planes of neck appear normal.
Thyroid gland
Anechoic cystic lesion measuring 2.36 x 1.95 cm noted in the left sublingual space. No calcification, solid component or internal vascularity noted.
No evidence of extension into submandibular space.
Both lobes of thyroid and isthmus appears normal.
The parenchymal echotexture of the entire thyroid gland is homogeneous and normal.
Few enlarged bilateral level IB nodes noted largest measuring 1.7 x 0.7 cm in right level IB with preserved fatty hilum.
Carotid arteries and jugular veins are normal.
No displacement of vessels noted.
Submandibular and sublingual salivary glands appear normal.
The bilateral parotid glands appear normal with no evidence of intra-parotid lymph nodes.
IMPRESSION:
Possibility of simple Ranula.
Suggested clinical correlation.

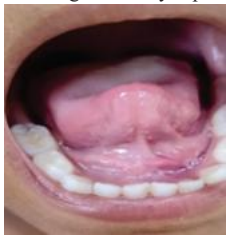
The lesion was completely excised under general anesthesia along with careful dissection from the surrounding tissues.

Intraoperatively, the lesion demonstrated an unusually thick and well-defined capsule compared with conventional ranulas.

Gross examination revealed a cystic sac measuring approximately 3.5 × 3 cm containing mucinous material. The cyst wall appeared thick and fibrotic.

Histopathological examination showed a cystic cavity lined predominantly by non-keratinized stratified squamous epithelium with focal areas of pseudostratified ciliated columnar epithelium containing mucous cells. The capsule consisted of dense collagen bundles arranged parallel to the lumen with spindle-shaped fibroblasts. Chronic inflammatory cell infiltrates were present toward the luminal surface. Peripheral sections demonstrated skeletal muscle fibers, neurovascular bundles, and salivary gland tissue including mucous acini and excretory ducts.

These findings were consistent with a retention-type ranula exhibiting chronic fibrous wall thickening secondary to prolonged persistence.



The postoperative period was uneventful, and the patient recovered satisfactorily.

DISCUSSION

Ranulas develop due to the accumulation of saliva following disruption or obstruction of the ducts of Rivinus within the sublingual gland. Approximately 90% represent mucus extravasation pseudocysts without epithelial lining, whereas true retention cysts are relatively uncommon[1][3][7][8].

Congenital ranulas constitute a rare subset, with only isolated cases reported in the literature. Proposed etiologies include congenital ductal atresia, developmental anomalies of the sublingual gland ducts, or intrauterine obstruction of salivary flow. Most congenital lesions are diagnosed during infancy because progressive enlargement interferes with feeding or breathing[4][6].

The present case is unusual because the lesion persisted untreated for four years while remaining localized to the sublingual space without plunging extension. The prolonged duration likely permitted repeated cycles of mucous retention, chronic inflammation, fibroblast proliferation, and collagen deposition, producing the unusually thick fibrous capsule encountered intraoperatively and microscopically[6][9][10].

Histopathological examination represented the most distinctive feature of this case. Classical mucus extravasation ranulas characteristically lack epithelial lining. However, our specimen demonstrated epithelial lining varying from stratified squamous to pseudostratified ciliated columnar epithelium with mucous cells, together with dense fibrous connective tissue and chronic inflammatory infiltrate. These findings favor a retention-type ranula and suggest progressive epithelial remodeling during prolonged chronicity[3][7][8].

Ultrasonography remains an excellent initial imaging modality for pediatric ranulas because it is inexpensive, non-invasive, radiation-free, and capable of differentiating cystic lesions from vascular malformations or solid masses. In the present case, ultrasonography accurately demonstrated a simple cystic lesion confined to the left sublingual space without extension into the neck[3][7][8].

The differential diagnosis includes dermoid cyst, epidermoid cyst, thyroglossal duct cyst, cystic hygroma, lymphangioma, hemangioma, salivary gland neoplasms, and abscesses of the floor of the mouth. Clinical examination combined with imaging and histopathology is usually sufficient to establish the diagnosis[7][8].

Various treatment modalities have been described, including aspiration, marsupialization, modified marsupialization, micromarsupialization, sclerotherapy with OK-432 or bleomycin, and surgical excision with or without removal of the ipsilateral sublingual gland. Conservative approaches generally exhibit higher recurrence rates because the source of mucus leakage remains untreated. Complete excision of the ranula together with the involved sublingual gland is widely regarded as the treatment of choice for minimizing recurrence[1][2][5].

In our patient, complete surgical excision provided definitive management and permitted comprehensive histopathological evaluation, revealing unusual chronic changes that contribute to the existing literature on congenital ranulas[5].

This case emphasizes that prolonged persistence of congenital ranulas may significantly modify their histopathological appearance. Recognition of these changes is important to avoid diagnostic confusion and to appreciate the spectrum of pathological alterations associated with chronic salivary duct obstruction[3][7][8].

CONCLUSION

Congenital ranulas are uncommon lesions, and long-standing untreated cases are exceptionally rare. This case demonstrates that persistence over four years may result in marked fibrous wall thickening and epithelialization, producing features more consistent with a retention-type ranula than the classical mucus extravasation pseudocyst. Early diagnosis, appropriate imaging, complete surgical excision, and histopathological examination remain essential for definitive diagnosis and prevention of recurrence. This case broadens the understanding of the clinicopathological spectrum of congenital ranulas and underscores the influence of chronicity on their histological characteristics[3][4][5][7][8].

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