

Submandibular swelling in a child: A case report

Upadhyay S¹, Shakya S¹, Upadhyay C²

¹Lecturer, ²Assistant Professor, Dental Department, Kathmandu University Teaching Hospital, Kathmandu University School of Medical Sciences, Dhulikhel, Nepal

Abstract

A plunging ranula is a mucous extravasation cyst appearing as a swelling in the submental and submandibular regions. We describe a case of submandibular swelling in a child without any oral finding. The diagnosis of plunging ranula was confirmed by aspiration and ultrasound. This case report describes the presentation, diagnosis and management of plunging ranula in a child.

Key words: Ranula, Submandibular swelling, Plunging ranula, Cervical ranula

Introduction

The name "ranula" has been derived from the Latin word "rana" which means "frog." The swelling resembles a frog's translucent underbelly or air sacs. A ranula by definition is a mucus filled cavity, a mucocele, in the floor of the mouth in relation to the sublingual gland due to extravasation^{1,2}. A clinical variant with moderate incidence, plunging ranula occurs when the fluid pressure of the mucin dissects through a perforation in the mylohyoid muscle in the submandibular space³. This cervical cyst or plunging ranula may occur without a ranula being present in the floor of the mouth in which case its origin may not be appreciated which may mislead one from accurate diagnosis⁴. Thus, in most of the instances inappropriate and ineffective attempts are made to excise the cyst from the neck before the true nature of the lesion is recognized.

This case report attempts to describe the presentation, diagnosis and management of plunging ranula in a child for the better recognition by the dental surgeons.

Case report

A 7 year- old boy presented with a history of swelling on left submandibular region for 2 months (Fig 1). The swelling had increased in size gradually over the 2 months duration and it was asymptomatic. There was no past history of any surgery carried out in that region. The patient was in a good general health. Examination revealed a diffuse swelling in the left submandibular region approximately 5x3cm in size. The color of the

skin appeared normal with no surface ulcerations. The swelling was non tender, soft and did not move on tongue protrusion or swallowing. There was no abnormality in the floor of the mouth, teeth, jaws and oropharynx. Adjacent lymphnodes were nonpalpable. Ultrasonography revealed the evidence of irregular cystic structure measuring 3.3x 2.1x2cm size with multiple internal echoes extending from left sublingual space to left submandibular space around the mylohyoid muscle (Fig 2). All the adjacent structures appeared normal. Aspiration revealed thick mucous fluid with high amount of amylase and protein. Based on this finding a diagnosis of plunging ranula could be made. The left sublingual gland was excised and patient was followed up after 3 months without any recurrences. The patient is still under followup.



Fig 1: Swelling in left submandibular region

Correspondence

Dr. Sumita Upadhyay, MDS, Lecturer, Dental Department, Kathmandu University Teaching Hospital, Kathmandu University School of Medical Sciences, Dhulikhel, Nepal, E-mail: sumitadhungana@hotmail.com

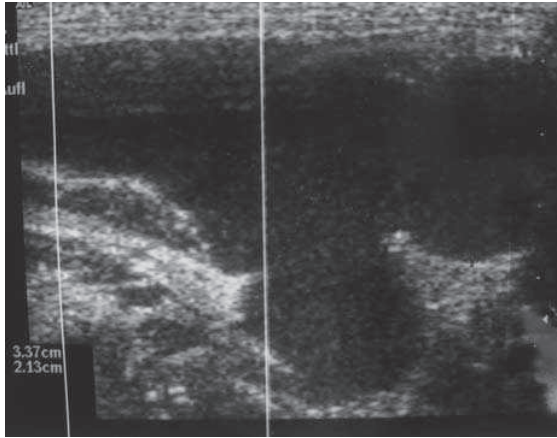


Fig 2: Ultrasound Finding

Discussion

Ranulas usually occur in children and young adults, with the peak frequency in the second decade⁵. In the absence of oral swelling, the clinical diagnosis of ranula may not be suspected. In upto 45% of the cases, the patient's first presentation is an oral swelling. Plunging ranulas are associated with oral swelling in 34% of cases. Another 21% of the cases occur without any oral involvement⁶.

Plunging ranulas arise in the neck by one of the following four mechanisms. Firstly, the sublingual gland may project through the mylohyoid, or an ectopic sublingual 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^{7,8,9}. Lastly, 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 muscle¹⁰.

Differential diagnosis of plunging ranula includes branchial cyst, cystic hygroma, thyroglossal duct cyst, laryngocoele, lymphadenopathy, abscess or soft tissue tumors. Ultrasonographic scanning and CT scanning

may define its location in relation to mylohyoid muscle. Aspirated cyst fluid contains increased amount of amylase and protein content⁴.

Local excision of the cyst is difficult because there is no anatomical cyst wall. The recurrence rate of plunging ranula is 85% after excision of cyst through a submandibular incision, 53% after marsupialisation and 2% after the excision of the sublingual gland with trans oral drainage of the cyst¹¹.

As ranulas may also present as submandibular swelling without intraoral counterpart, plunging ranula should be included in the differential diagnosis. Definitive management for which involves excision of ipsilateral sublingual gland.

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