

Plunging Ranula with the Oral Counterpart in A 6-Year-Old Boy: A Case Report

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ABSTRACT

A ranula is a collection of salivary fluid on the floor of the oral cavity due to obstruction of the salivary duct or as a result of extravasation of the saliva. A plunging ranula results from extension of salivary fluid into the submental or submandibular spaces through the posterior aspect of the mylohyoid muscle or through a dehiscence on the muscle. It could also extend to multiple spaces mimicking cystic lesions of the neck region. Ranula mostly involve the sublingual gland. The prevalence of ranula is 0.2% per 1000 patients. There are usually no symptoms except when large which then causes discomfort in mastication and swallowing. Various treatment options have been advocated but the most commonly adopted one is drainage of the collection in addition to excision of the affected gland. The case presented is an oral and plunging ranula found in a 6-year-old boy of eight weeks duration. Presenting symptoms were painless swelling underneath and beside the tongue in addition to swelling at the submental region. There was occasional discomfort during mastication and swallowing. Ultrasound scan showed a 40mm by 30 mm cystic mass. The ranula was excised through the intraoral route together with excision of the implicated left sublingual gland. Post-operative reviews show no recurrence.

Conclusion: Oral and plunging ranula do occur in children. Transoral approach to the drainage of the salivary collection with the excision of the affected sublingual gland is appropriate in the management of this condition.

Keywords: Cyst, mylohyoid, oral, plunging ranula.

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I. INTRODUCTION

Ranulas are pseudo cysts found in the floor of the oral cavity while plunging ranula develops when there is extension of saliva beyond the distal end of the mylohyoid muscle or there is dehiscence within the muscle leading to spillage of saliva into the submental or submandibular spaces. The prevalence of ranula is 0.2% per 1000 patients and accounts for 6% of all salivary gland cysts [1].

Plunging ranula have also been reported in other sites like the retroauricular region [2], and parotid gland with avoidance of the submandibular space [3]. The cause of ranula, especially the bilateral ranula appears to be a combination of mylohyoid dehiscence, racial predisposition and previous trauma to the mouth/face or previous oral surgery [4]. A genetic basis for ranula have been reported [5]. Ranulas have been reported both in children and adults. Congenital cases have also been reported [6]. The diagnosis of plunging ranula is simple if the signs of ranula are present in the intraoral cavity [7]. However, when the oral counterpart is absent, it mimics other head and neck cystic lesions making the diagnosis and treatment more difficult and challenging [8], more so when located in unusual and distant sites. The

diagnosis then requires a more detailed history, clinical examination, and radiological imaging [9]. The treatment of ranula has been given many considerations ranging from simple excision [10], marsupialization to excision of the affected sublingual gland but most authors advocate the excision of the gland to avoid recurrence. The transoral route appears to be more preferable in order to minimize associated complications or external scarring. Non-surgical methods like sclerotherapy [11] have also been considered safe and effective in the treatment of pediatric plunging ranula. The case presented showed a ranula on the right floor of the mouth in a 6-year-old male together with a plunging counterpart located at the submental region. The condition was treated using the transoral approach with a desirable post-operative outcome.

II. CASE REPORT

This 6-year-old male patient was accompanied by the mother to the clinic with a slow growing swelling on the floor of the mouth besides the right side of the tongue of about eight weeks duration and another swelling on the mental region of about five weeks. There was no associated pain, fever or other

constitutional symptoms. However, there was some discomfort in mastication and swallowing. Extra oral examination revealed a soft, ballotable, non-tender 3 cm by 4 cm mass at the submental region with a normal overlying skin (Fig. 1). Intraoral region showed full complement of milk teeth except for two lower permanent central incisors. Located on the right side of the tongue was a bluish 2.5 cm by 4.0 cm mass (Fig. 2). Fluctuant, non-tender and moves with the movement of the tongue. Bimanual palpation showed a communication with the swelling in the submental region indicated by an increase in volume of the intraoral swelling with pressure on the mental bulge. The clinical presentation led to the diagnosis of oral and plunging ranula. Ultrasound scan showed a cystic mass at the submental region measuring 30 mm by 40 mm. The patient was prepared and under general anesthesia the cystic fluid in the oral and submental regions was evacuated along with the excision of the right sublingual gland through the transoral route (Fig. 3). The patient had a smooth post-operative period and was discharged home 72 hours later. Post-operative reviews Fig. 4 and Fig. 5.

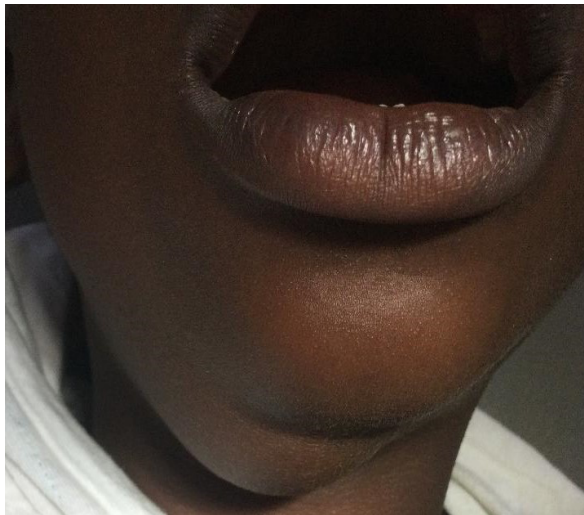


Fig. 1. Plunging ranula at the submental region.



Fig. 2. Ranula showing the oral counterpart.

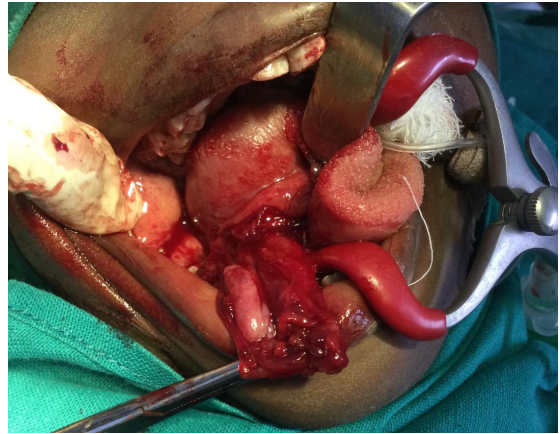


Fig. 3. Sublingual gland excision.

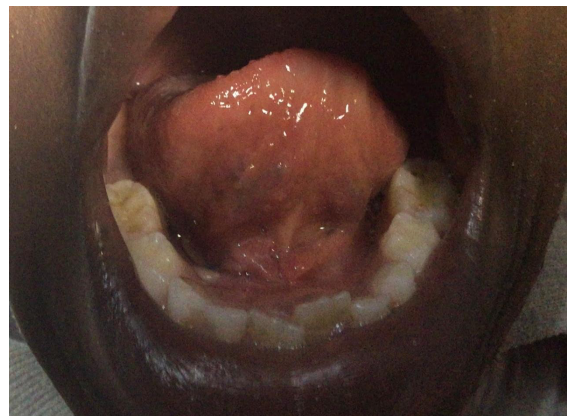


Fig. 4. Post op view of sublingual region.

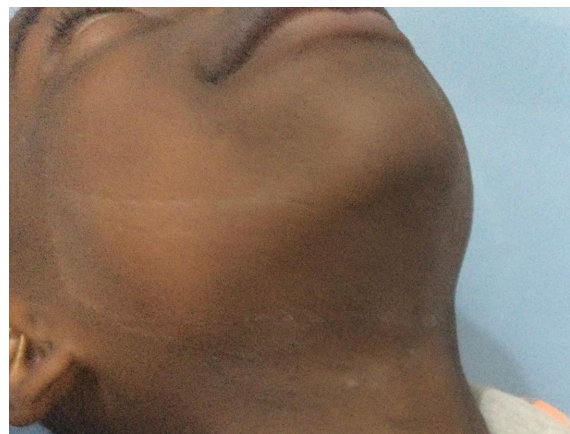


Fig. 5. Post op view of submental region.

III. DISCUSSION

The diagnosis of plunging ranula in this report was not a challenge as the oral counterpart of the mass was also obvious. This agrees with Kovacic's view [7] that the diagnosis of plunging ranula is simple if the signs of ranula are present in the intraoral cavity. In cases where there are isolated plunging ranulas without their oral counterparts [8] or when located in distant sites like the retroauricular region [4] and parotid gland [3], there is the possibility of misdiagnosis which can lead to inappropriate management [12] or prolonged/multiple treatments with the attendant risks and complications. As in this case many ranula are also seen in children. The reason for this occurrence is not well known but traumatic episodes may be responsible. The location of

plunging ranula at distant sites have resulted in authors suggestion of ranula being considered as differential diagnosis of cystic head and neck masses [1], [13], [14]. A variety of treatments for ranula has been suggested and include aspiration of cystic fluid, sclerotherapy, marsupialization, incision and drainage, ranula excision only, and excision of the sublingual gland with or without ranula [15].

The transoral route was used for the treatment in this case as it is less traumatic for the patient and no associated post-operative external scarring as seen when the cervical approach is adopted. Although conservative approach seems to have higher recurrent rates [16], [17], many authors do not see the need for cervical approach [18] or extensive neck dissection of the cervical extension [19] in the treatment of plunging ranula. Reference [20] found transoral surgery to result in lowest recurrence rate in the patients treated. In some cases, surgery and sclerotherapy were adopted for treatment of plunging ranula [20]. Reference [17] reported that higher recurrences are associated with marsupialization alone in the treatment of ranula. In a 17-year review of treated cases of ranula with sublingual gland excision none of the cases treated had recurrence [21] which further emphasize the need for sublingual gland excision to minimize recurrence.

IV. CONCLUSION

Oral and plunging ranulas do occur also in children. The transoral mode of treatment is highly recommended to minimize complications associated with extra oral approach.

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CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

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