Case Report

Modified micro-marsupialization as an alternative treatment for the management of ranulas in children

ABSTRACT

The anatomical location of ranulas is challenging to the dental surgeon in terms of their management. The regional complexities of the area call for a skilled approach because of a number of vital structures within. Although complete excision with removal of the sublingual gland continues to be the gold standard of treatment, recent literature highlights successful outcomes by simple modification of the conventional ranular marsupialization technique. This micro-marsupialization option is minimally invasive and advantageous in children due to shorter procedural time, minimal discomfort, and no postoperative complications. The following case report highlights the successful management of a case using a modified micro-marsupialization technique.

Keywords: Child, modified micro-marsupialization, ranula

INTRODUCTION

Ranulas are rare mucoceles found in the floor of the mouth. The management of ranulas is a polarizing topic, with conflicting evidence as to which treatment modality is best. The gold standard procedure is the complete excision of the lesion along with excision of the sublingual gland that ensures maximum protection against recurrence as advocated by Pandit and Park.[1]

Epidemiologically, these lesions occur most frequently in the first two decades of life,[2] prompting a more conservative management approach.

In this context, there have been developments over the past three decades with regards to the modification of the marsupialization technique, which have drastically dwindled the chances of recurrence.[3]

CASE REPORT

A 12-year-old child reported to the department of pedodontics and preventive dentistry with a chief complaint of a swelling with respect to the right side floor of the mouth since 20 days.

The child noticed a small swelling in the region 20 days ago that gradually progressed to its current size on the day she reported to the outpatient department.

The swelling was painless, with no associated difficulty in swallowing, no paresthesia. No change in size during meal times was noticed by the child. Intraoral examination showed a massive swelling on the right side of the floor of the mouth, measuring approximately 5 cm × 4 cm × 1.5 cm in length, breadth, and depth, respectively. Its anteroposterior extension was from the distal surface of mandibular first molar up to the mesial aspect of mandibular lateral incisor.

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Received: 08-01-2019, **Revised:** 08-01-2019, **Accepted:** 26-01-2019

Access this article online	
Website: www.njms.in	Quick Response Code
DOI: 10.4103/njms.NJMS_3_19	

How to cite this article: Matondkar SP, Yavagal C, Mandroli PS. Modified micro-marsupialization as an alternative treatment for the management of ranulas in children. Natl J Maxillofac Surg 2019;10:95-7.

Swelling appeared translucent, bluish and dome-shaped with some fluid retention within it. No secondary changes such as ulceration, fistula formation, infection, or discharge were observed [Figure 1].

No history of any similar swelling in the past was noted. Medical history was noncontributory. There were no associated neck swellings.

Consent and clinical technique

Patient and parent were explained about the treatment options, and they opted for the least invasive method of management. An informed consent was taken for the same.

The area was disinfected with 0.1 solution povidone iodine. The area of interest anesthetized using an inferior alveolar nerve block. Six interrupted silk sutures using 3–0 silk were passed through the lesion superficially, and loose knots were tied in place to secure them [Figures 2 and 3]. The child was instructed to maintain good oral hygiene and rinse twice daily with chlorhexidine mouth rinses. The follow-up was done on a weekly basis to evaluate if the sutures were still in place and if the child was maintaining satisfactory oral hygiene. On day 20, only 1 suture was lost, and the remaining ones were removed. It was observed that the lesion had subsided uneventfully in the 1st week itself and did not recur thereafter. Currently, it has been over 100 days since the procedure with no signs of recurrence of the lesion [Figure 4].

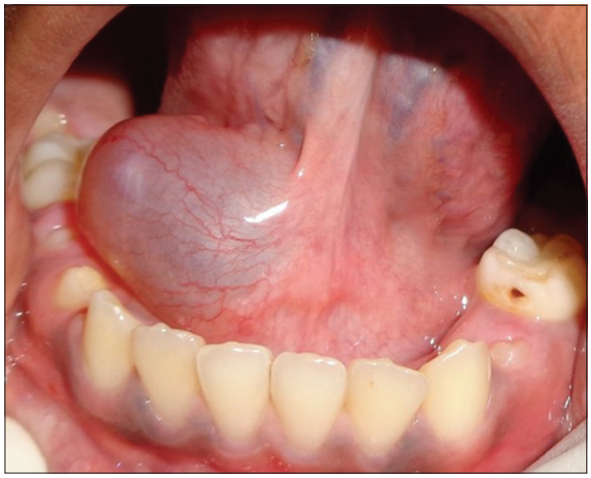

Figure 1: Preoperative view

Figure 2: Suture placement (Intraoperative)

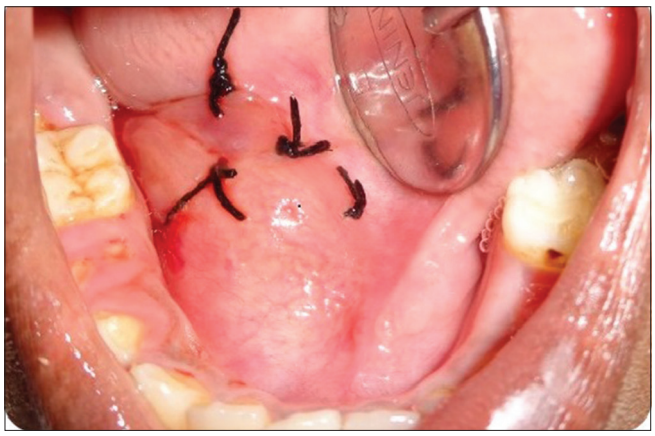

Figure 3: Post suture placement

Figure 4: Postoperative day 100

DISCUSSION

Ranulas are a rare entity occurring predominantly in the first 2 decades of life and are of particular concern to the pediatric dentist. What is perhaps challenging is that they have a high chance of recurrence, and perhaps the only failsafe modality of complete excision with removal of the sublingual gland,[4] is fraught with complications and difficulties. Primary concerns include difficult to control neuropathic pain due to damage to the lingual nerve. Myriad other difficulties include damage to Wharton's duct (2%), bleeding/hematoma (1%), dehiscence into mylohyoid muscle leading to a recurrent plunging ranula, scarring, and restricted mobility of the tongue.[5] The area requires meticulous postoperative care as well to prevent

secondary infections. This compliance in particular is quite difficult in children. Thus, over the past three decades, there has been exploration of more conservative modalities for management.

This transition in its approach began in 1995 when Morton and Bartley modified the conventional marsupialization approach, in which they placed a single silk suture at the dome of the ranula.[6]

In 2000, Delbem *et al*. reported the successful use of a micro-marsupialization technique in successfully managing 38 cases of mucous retention phenomenon at various sites. The procedure encompassed using a single 4–0 silk suture across the internal part of the lesion through its widest diameter. This suture was retained for a week.[7]

However, reports cropped up in literature of recurrences, within 30 days of the procedure; hence, this micro-marsupialization technique was further subjected to a few modifications.

In 2007, Sandrini *et al*. suggested modifications such as:
1. To increase the number of sutures
2. Decreased distance between entry and exit of needle
3. Longer period of maintenance of sutures (30 days).

Caution was also needed to be maintained while tying the knot so as to not cause any hindrance to the blood flow which could potentially lead to tissue necrosis.

The main principle behind the suture placement and retention of silk sutures for an extended period is the formation of new, permanent epithelialized tracts that act as additional outlets for release of the retained mucous.[8]

Case selection plays a key role in a successful outcome. As is summarized by Goodson *et al*., conservative techniques are to be attempted in cases where there is no evidence of anatomical field distortion as a complication of previous attempts. It is not to be employed in large ranulas that completely fill up the floor of the mouth or cases in which site of origin is difficult to establish.[9] However, it seems to be an ideal approach in dealing with primary lesions up to 4–5 ml in volume in children and adolescents.

CONCLUSION

The aforementioned procedure discussed highlights that a modified micro-marsupialization technique is a viable option instead of more invasive options in children having ranulas. The advantages being a quick, simple chairside procedure having minimal postoperative discomfort and complications. As such it needs to be explored more as an alternative, primarily in children presenting with uncomplicated lesions. The technique definitely merits wider application.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Pandit RT, Park AH. Management of pediatric ranula. Otolaryngol Head Neck Surg 2002;127:115-8.
2. Golden B, Drake AF, Talavera F. Ranulas and Plunging Ranulas. Medscape; 2016. Available from: https://emedicine.medscape.com/article/847589-overview. [Last updated on 2014 Mar 28].
3. Baurmash HD. Treating oral ranula: Another case against blanket removal of the sublingual gland. Br J Oral Maxillofac Surg 2001;39:217-20.
4. Crysdale WS, Mendelsohn JD, Conley S. Ranulas – Mucoceles of the oral cavity: Experience in 26 children. Laryngoscope 1988;98:296-8.
5. Zhao YF, Jia J, Jia Y. Complications associated with surgical management of ranulas. J Oral Maxillofac Surg 2005;63:51-4.
6. Morton RP, Bartley JR. Simple sublingual ranulas: Pathogenesis and management. J Otolaryngol 1995;24:253-4.
7. Delbem AC, Cunha RF, Vieira AE, Ribeiro LL. Treatment of mucus retention phenomena in children by the micro-marsupialization technique: Case reports. Pediatr Dent 2000;22:155-8.
8. Sandrini FA, Sant'ana-Filho M, Rados PV. Ranula management: Suggested modifications in the micro-marsupialization technique. J Oral Maxillofac Surg 2007;65:1436-8.
9. Goodson AM, Payne KF, George K, McGurk M. Minimally invasive treatment of oral ranulae: Adaption to an old technique. Br J Oral Maxillofac Surg 2015;53:332-5.