Management of Blandin-Nuhn Mucocele- A Case report

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Mucoceles of the glands of Blandin and Nuhn are uncommon and mainly seen on the ventral surface of the tongue. This case report emphasizes the treatment approach of these mucoceles. This patient reported with a second recurrence following conventional treatment, so a novel method was tried by injecting an ultraflow rubber base impression material into the mucocele, after which a surgical excision was done. The present procedure showed a clear demarcated limit of the lesion making the surgical excision easier.

Keywords: Mucocele, Glands of Blandin and Nuhn.
J Clin Pediatr Dent 32(2): 147–150, 2007

INTRODUCTION

The glands of Blandin and Nuhn are mixed mucous and serous salivary glands that are embedded within the musculature of the anterior tongue ventrum. The glands of Blandin and Nuhn are not lobulated or encapsulated. Each gland is approximately 8mm wide and 12 to 25 mm deep and consists of several small independent glands composed of mucus tubules with seromucus demilunes and occasional seromucus acini.They drain by means of 5 or 6 small ducts that open near the lingual frenum.[1] The glands of Blandin-Nuhn are located near the ventral tip of the tongue and are embedded in the muscles of ventral aspect near the midline. These glands extend laterally and posteriorly from the midline, forming a mass resembling a horseshoe with its opening pointing towards the root of the tongue.[2]

Mucoceles of the glands of Blandin-Nuhn have been reported to be uncommon.[3-6] In the Minnesota Oral Disease Prevalence Study, Blandin and Nuhn mucoceles had a lower prevalence than mucoceles at other locations, or 0.1 cases per 1000 persons with increased predilection for females. This type of mucocele represents an estimated 2-10% of all mucoceles.[7]

Mucocele involving the glands of Blandin-Nuhn are often histologically diagnosed as being extravasation type and likely to occur in young patients.[6,8,9] Traumatic injury to a duct or ducts with partition of this structure is the most likely etiologic factor leading to the development of these lesions.[2] These lesions are often asymptomatic, however, as they grow in size, they can cause discomfort, external swelling, and interfere with speech and mastication.[8] Thus surgical excision is the treatment of choice.

CASE REPORT

An 8 year old girl accompanied by her father came to the department of Pedodontics and Preventive Dentistry at the A.B.Shetty Memorial Institute of Dental Science with the chief complaint of swelling on the ventral surface of the tongue, which appeared 1 month before the consultation. Extraoral examination revealed no asymmetry of the neck and no cervical lymphadenopathy. Intraorally the lesion was a unilateral painless swelling, soft on palpation and blanched under digital pressure, found lateral to the midline on the ventral surface of the tongue. The lesion was flaccid with sessile base and was more than 15 mm in size lined with thin mucosa (Fig 1).The patient did not recollect any episodes of trauma and also denied any reduction in size. Needle aspiration yielded a clear fluid that ruled out a lesion of vascular etiology.

The lesion was clinically diagnosed as a mucocele and the anatomical location of the lesion was suggestive of involvement of the glands of Blandin and Nuhn.[2]

Following conventional treatment protocol the lesion was surgically unroofed and sutured. After 10 days the lesion reoccurred. The surgical excision was repeated which subsequently failed with reoccurrence after 3 weeks. Thus an alternative procedure was decided upon to demarcate cystic border. This method was tried earlier on larger retention cyst where the cystic cavity will be filled with rubber impression

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material presurgically, which improves the visual access and provides a proficient method of surgical excision.[10]

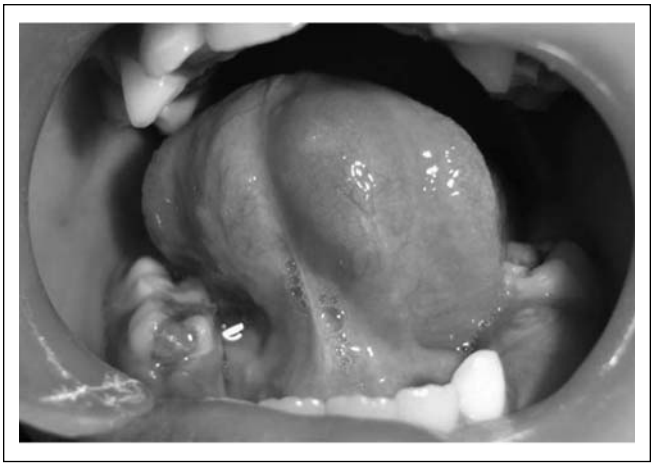

Figure 1. Mucocele on the anterior ventral surface of the tongue

METHOD

In the present procedure after disinfection of the area with 0.12% chlorhexidine solution and delivery of local anesthesia, the tongue was stabilized with a stay suture. A large caliber needle was inserted into the cyst, and the cystic content were aspirated. The shrunken cyst sac was filled with ultraflow rubber base material (Aquasil™ULV, ultraflow low viscosity, DENTSPLY DETREY) via the nozzle fitted to a rubber base impression delivery syringe (Fig 2).[10] This gave a clear picture of the extension of the cystic sac which was then surgically removed (Figs 4-5). The wound was closed with 4-0 silk sutures. Healing was uneventful (Fig. 5)The patient was reviewed periodically and no recurrence was found at 3, 6 and 12 months respectively.

DISCUSSION

The mucocele of the glands of Blandin –Nuhn are mostly of extravasation type and suggest that traumatic injury to a duct with severance of the duct is the most likely etiologic factor. Most of the lesions occur lateral to the midline presenting as a raised mass, whereas those at the midline are typically

Figure 2. Injecting an ultraflow rubber base impression material into mucocele.

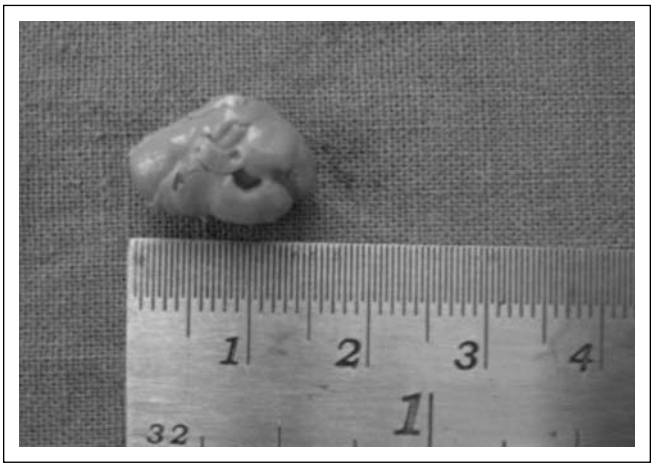

Figure 4. Set rubber base impression material obtained from the lesion showing the size and extent of the lesion.

Figure 3. Intact lesion excised.

Figure 5. Healed lesion after 2 weeks.

polypoid.[2] In the present case a diagnosis of the mucocele of the glands of Blandin and Nuhn was made by the anatomical site, size, flaccid nature, clear aspirate and asymptomatic nature of the lesion. Based on these findings we were able to rule out the varied differential diagnoses. Surgeman *et al*[6] reported that mucoceles of the glands Blandin and Nuhn may clinically resemble a vascular lesion, pyogenic granuloma, polyp, or squamous papilloma. In the present case the lesion appeared similar to soft tissue abscess. These mucoceles if left untreated, the lesions may grow in size, can cause discomfort, external swelling, and interfere with speech and mastication.[8]

Surgical excision remains the most commonly used method for excision of mucocele.[1-13] Baurmash[8] showed that there are 3 possible approaches to the management of mucoceles. The small lesion can be completely excised, making sure to include the associated salivary gland tissue as well as any marginal glands before primary closure. Large mucoceles are best treated with an unroofing procedure (marsupialization).The third procedure involves the dissection of the mucocele along with the servicing mucous glands, which is usually done for moderate sized lesions. In addition larger lesion may also be managed by marsupialisation, [8, 13, 14] cryosurgery, [15-17] laser ablation[18, 19] and micro marsupialisation.[12, 20] Use of steroid injections is an alternate option to surgery.[21] The present case was initially managed by the conventional method twice but failed, which could be due to the deep seated salivary glands within the musculature of the tongue or could be due to inappropriate removal of the cystic lumen. Thus an alternative technique was tried where ultraflow rubber base impression material was filled into the cystic sac thus giving a clear picture of the depth and extent of the cystic sac. This was followed by surgical excision. The prognosis of the lesion was excellent with no sign of recurrence with a 12 month follow up period.

This technique provided visual control of the boundaries of the cyst making it possible to enucleate the retention cyst completely. The present case showed good prognosis. Similar results where observed earlier when this technique was used to excise a bigger retention cyst like ranula.[10]

The advantage of this method over conventional technique is that it maintains the cystic sac intact during surgical excision. Even if there is small perforation, the rubber base material flows precisely maintaining the extent of the lesion. This method could also be tried out on large retention cyst making enucleation simpler. However this is only an isolated case and studies are required, using this method on more number of cases to evaluate the success rate of this procedure.

REFERENCES

1. Tandler B, Pinkstaff CA, Riva A.Ultrastructure and histochemistry of human anterior salivary glands (glands of Blandin and Nuhn). Anat Rec, 240: 167–77, 1994.
2. Jindu Y, Kusama M, Itoh H, Matsumoto K, Wang J, Noguchi T. Mucocele of the glands of Blandin –Nuhn: clinical and histopathologic analysis of 26 cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod, 95: 467–470. 2003.
3. Heimansohn HC. Mucocele of anterior lingual tongue glands: report of a case. Dent Dig, 76: 470–1, 1970.
4. Mandel L, Kayar A. Mucocele of the gland of Blandin-Nuhn. N Y State Dent J, 58: 40–1, 1992.
5. Ellis E 3rd, Scott R, Upton LG. An Unusual complication after excision of recurrent mucocele of the anterior lingual glands. Oral Surg Oral Med Oral Pathol, 56: 467–71, 1983.
6. Sugermann PB, Savage NW, Young WG. Mucocele of the anterior lingual salivary glands (glands of Blandin and Nuhn): report of 5 cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod, 90: 478–82. 2000.
7. Bouquot JE, Gundlach KKH. Odd tongues: the prevalence of common tongue lesions in 23,616 white Americans over 35 years of age. Quint Intern, 17: 719–730, 1986.
8. Baurmarsh HD.Mucocele and ranulas. J Oral Maxillofac Surg, 61: 369–378, 2003.
9. Andrian N, Sarikayalar F, Ünal OF ,Baydar DE, Özaydin E. Mucocele of the anterior lingual salivary glands: from exravasation to an alarming mass with a benign course. International Journal of Pediatric Otorhinolaryngology, 61: 143–147, 2001.
10. Sailer HF, Pajarola GF. Oral Surgery for the general dentist. Thieme.Stuttgart. New York, 228–229, 1999.
11. Oliveira DT, Consolaro A, Freitas FJG. Histopathological spectrum of 112 cases of mucocele. Braz Dent J, 4: 29–36, 1993.
12. Castro AL: Glândulas salivares. In Estomatologia, 2nd Ed.São Paulo: Santos, pp 512–15, 1995.
13. Yoshimura Y, Obara S, Kondoh T, et al. A comparison of three methods used for treatment of ranula. J Oral Maxillofac Surg, 53: 280–82. 1995.
14. Black RJ, Croft CB. Ranula: pathogenesis and management. Clin Otolaryngol, 7: 299–303. 1989.
15. Bodner L, Tal H. Salivary gland cysts of the oral cavity: clinical observation and surgical management. Compend Contin Educ Dent, 12: 150–56, 1991.
16. Kamata H, Kobayashi S, Shimura K. Surgical treatment of a mucocele. Bull of Kanagawa Dent Col, 17: 187–90, 1989.
17. Twetman S, Isaksson S: Cryosurgical treatment of mucocele in children. Am J Dent, 3: 175–76. 1990.
18. Mintz S, Barak S, Horowitz I. Carbon dioxide laser excision and vaporization of nonplunging ranulas. J Oral Maxillofac Surg, 52: 370–72, 1994.

Neumann RA, Knobler RM. Treatment of oral mucosal cysts: with argon laser. Arch Dermatol, 126: 829–30, 1990.

20. Tommasi AF. Doencas das glândulas salivares. In Diagnóstico em patologia bucal, 1st Ed.São Paulo:Artes Médical 1982: pp 303–26.
21. Wilcox JW, Hickory JE. Non-surgical resolution of mucoceles. J Oral Surg, 36: 478, 1978.