

Oral Mucocele: A Report of Two Cases and Literature Review

Gautam Mahendra Shirodkar, Sayali Sunil Tungare
Consulting Dental Surgeon, Mumbai, Maharashtra, India

This report describes two lesions - one on the lower lip and another on the hard palate that were correctly diagnosed as a mucocele. The usual location of the mucocele is the lower lip but rare on the palate. The mucocele is one of the common lesions of the oral mucosa, mainly associated with the minor salivary glands. This case illustrates a common presentation of mucocele with respect to signs and symptoms, location and duration. The features of a variety of oral lesions are discussed in detail and compared to various lesions of the oral cavity which will help clinicians in establishing an appropriate differential diagnosis.

Keywords: Minor salivary glands, Diagnosis, Mucocele, Excision

INTRODUCTION

A mucocele is a mucus retention phenomenon of the major and minor salivary glands.¹ After irritation fibroma, mucocles are the most common of the benign soft tissue masses present in the oral cavity.² Mucoceles develop by mechanisms of mucous extravasation, which generally regarded as traumatic origin or by retention phenomenon caused by obstruction or stricture of the duct of a salivary gland. Extravasation is the leakage of fluid from the ducts or acini of salivary glands in the surrounding tissues (mucus extravasation cyst); retention phenomenon occurs as a result of a narrowed ductal opening due generally to inflammatory causes or sialolith causing ductal dilation and surface swelling.² The extravasation type is a pseudocyst with extravasation of mucin into the connective tissue,³ while the retention type of oral mucocele is a true cyst lined by epithelium are less common, usually affection older individuals. The ductal narrowing can be caused by frequent use of mouthwash containing hydrogen peroxide, deodorant mouthwashes, and tartar-control toothpastes.⁴ The mucoceles are usually associated with the minor salivary glands, and the most common site of occurrence of the mucocele is the lower lip. Cohen *et al.* reported that 82% of the mucoceles were found on the lower lip, 8% on

the buccal mucosa, 3% on the retromolar area, and 1% on the palate.⁵ The lesion has no sex predilection with the peak frequency reported to be in the second and third decades and rarely seen in infants.⁶ A mucocele usually appears as an asymptomatic fluctuant and movable swelling with a normal or bluish color with a diameter that may range from a few millimeters to centimeters. Both the types of mucoceles are treated by surgical excision of the cyst and the responsible minor salivary gland.⁷ A temporary decrease and then increase in size is seen corresponding to rupture of the mucocele and subsequent mucin production, if left untreated.⁸

CASE REPORT

A 26-year-old male reported with a chief complaint of swelling on the left lower left lip region since the past 3 months. The patient had no significant medical history. The history of presenting illness showed that the swelling was present in the lower left labial mucosa in the tooth number 31, 32, and 33 region from past 3 months. The swelling was painless and was initially small in size and gradually increased in size to attain the present size. The patient reported accidental biting of the lower lip while having food about 4 months ago.

On clinical examination of the lesion, it was elliptical in shape, soft, fluctuant measuring about 3 cm in its largest diameter and had a smooth surface (Figure 1). The borders of the lesion were smooth and the color of the lesion was pink, as that of the mucosa. The lesion did not blanch under digital pressure. The temperature of the surface was

Access this article online



www.ijsscr.com

Month of Submission : 04-2016
Month of Peer Review : 05-2016
Month of Acceptance : 05-2016
Month of Publishing : 06-2016

Corresponding Author:

Dr. Gautam Mahendra Shirodkar, C-403, Shree Krishna Complex, W.E. Highway, Borivali-East, Mumbai - 400 066, Maharashtra, India.
E-mail: gautam.m.shirodkar@gmail.com

normal, and the associated lymph nodes of the region were asymptomatic. Routine blood investigations were done and the values were in the normal range.

The case was diagnosed as mucocele on the basis of a history of trauma and clinical features. Consent was obtained from the patient to proceed with the surgery for the excision of the mucocele. Under aseptic conditions and local anesthesia, surgical excision of the lesion was planned by placing an incision horizontally over the lesion. The mucocele was separated from the overlying mucosa and connective tissue carefully so that chances of reoccurrences were reduced (Figure 2). Hemostasis was achieved and the site was sutured using interrupted sutures (Figure 3). Post-operative instructions were given, and the patients were prescribed amoxicillin 500 mg 3 times a day for 3 days, and Ibuprofen 400 mg 3 times a day for 3 days. The sutures were removed after a week.

The excised tissue was sent for pathological examination to confirm diagnosis and rule out any other salivary gland tumors and cysts. The results of the pathological reports confirmed mucocele owing to its microscopic features

(Figure 4).

Another male patient, 23 years of age, tailor by profession, reported with a chief complaint of swelling on the upper right inner side of his palate since 5 months. The patient was not compromised medically and had undergone no dental treatments before. The patient reported that he first noticed the swelling 5 months ago. It was painless and gradually increased in size to progress to the current size. The patient reported trauma to the region 7 months ago because of a pin that accidentally pricked the palate while he was working in his tailor job.

On clinical examination, the lesion was located on the right posterior side of the palate extending from tooth number 14, 15, 16, 17 region until the mid-palate region (Figure 5). The lesion is elliptical in shape and has a diameter of 4-5 cm in its largest diameter. The surface of the lesion was smooth and a bluish appearance. It was soft and fluctuant, the borders of the lesion were normal; no ulcerations were seen on the surface of the swelling. The teeth in the associated region



Figure 1: Swelling seen on the labial mucosa

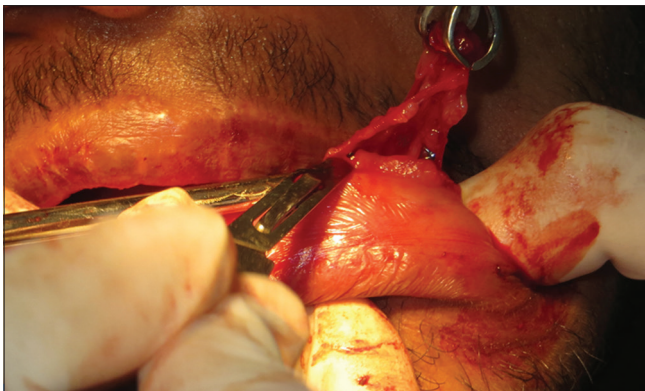


Figure 2: Excision of the mucocele



Figure 3: Interrupted sutures given

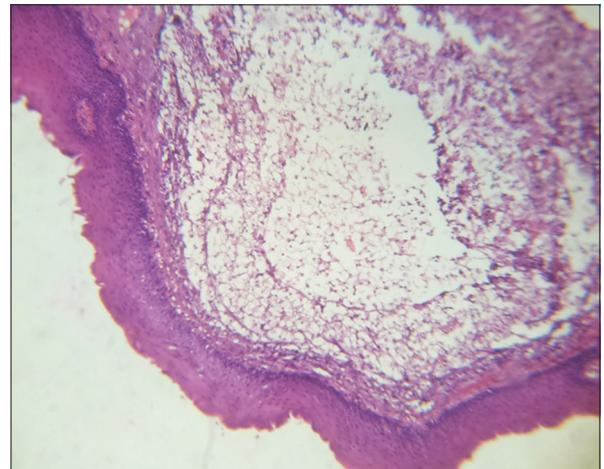


Figure 4: Microscopic features of oral mucocele

were in good health. Radiographic examination revealed no significant findings.

After obtaining patient consent, aspiration of the fluid from the swelling was done using a 21 G needle. The product of aspiration was a thick mucinous fluid and was pale red (Figure 6). Based on the clinical appearance, features and the aspirant, the case was diagnosed as mucocele.

A surgical excision of the lesion was done by incising and separating the palatal mucosa from the tooth number 13, 14, 15, and 16. The cyst and the associated salivary glands were excised, and the flap was closed using interrupted sutures. Hemostasis was achieved and the patient was prescribed analgesics and antibiotics. The patient was recalled after 1 week for removal of the sutures.

The histopathologic examination of the lesion showed features as that of a mucocele, and hence, the diagnosis of the lesion was confirmed (Figure 7).

MATERIALS AND METHODS

A review of the literature from peer reviewed journals published in English was performed by using electronic method for the articles on “oral mucocele” until March 2016. Appropriate MeSH headings and keywords related to different aspects of “oral mucocele” were searched in PubMed database. 17 relevant articles on “oral mucocele” were identified after search which formed the basis of this review.

DISCUSSION

Cystic lesions of salivary glands have been collectively assigned as mucoceles.⁹ It is a self-limiting mucous containing cyst of salivary glands occurring in the oral cavity with relative rapid onset and fluctuating size.¹⁰ According to Dent *et al.*, mechanical trauma to the ducts of the salivary glands causes rupture of the ducts which is followed by the extravasation of mucin in the connective tissue and is called as mucus extravasation phenomenon. When mucus is retained in the duct of the salivary glands as a result of obstruction, it is referred to as mucus retention phenomenon.¹¹ The extravasation type undergoes three evolutionary:

- Phases I: In the first phase, there is spillage of mucus from salivary duct into the connective tissue.
- Phase II: In the second phase, it is the resorption phase in which granulomas appear due to the presence of histiocytes, macrophages, and giant multinucleated cells associated with foreign body reaction.
- Phase III: In the third phase, there is formation of pseudocapsule without epithelium around the mucosa.¹²



Figure 5: Swelling seen on the palate



Figure 6: Product of aspiration from the palatal mucocele

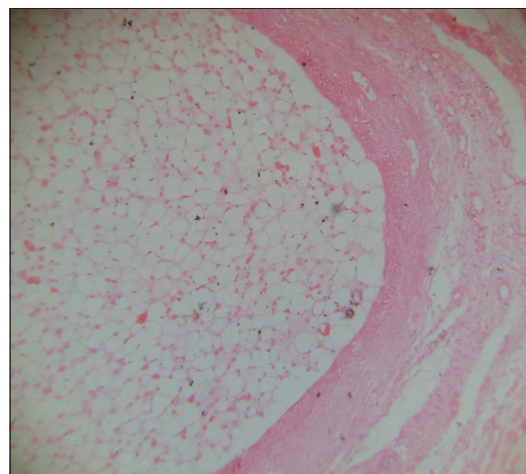


Figure 7: Microscopic features of oral mucocele

The oral mucoceles are either located directly under the mucous membrane (superficial mucocele) or in the upper submucosa (classical mucocele).¹⁰ Oral mucoceles are believed to affect patients of all ages, with the highest incidence in the second decade of life. Nico *et al.*,¹² Yamasoba

et al.,¹³ and Oliveira *et al.*¹⁴ reported that more than 65% of their patients with mucoceles were <20 years of age.

Mucoceles usually appear as an asymptomatic nodule, with a normal or bluish color.¹⁵ The deep blue color results from tissue cyanosis and vascular congestion associated with the stretched overlying tissue and the translucent character of the accumulated fluid beneath it.¹⁶

Location of the lesion, associated history of trauma, rapid appearance, variations in size, bluish color, and the consistency are the important diagnostic features of oral mucocele.¹⁵ Mucoceles are mobile lesions with soft and elastic consistency depending on how much tissue is present over the lesion.³ For specific cases, the diagnosis may require routine radiographs, ultrasonography, or advanced diagnostic methods such as computed tomography and magnetic resonance imaging for better visualizing the form, diameter, position, and determination of the lesion origin.

Oral mucoceles are fluctuant and movable because of its

mucinous contents. They are usually asymptomatic, but in some patients, they can cause discomfort by interfering with speech, chewing, or swallowing.¹⁶

Mucous retention cysts are lined by epithelium. The epithelial lining may consist of flat duct cells similar to intercalated duct cells or of bilayered duct cells similar to striated ducts or the surrounding excretory ducts.⁴ Robinson and Hjorting Hansen¹⁷ suggested that three morphological patterns of mucous extravasation and retention cysts which although not commonly used in present times have been listed in Table 1. The differential diagnoses for the oral mucocele is given in Table 2.

Conventional treatment of oral mucoceles is the surgical extirpation of the cyst, surrounding mucosa, and glandular tissue. With a simple incision of the mucocele, the content would drain out but the lesion would reappear as the wound heals. Surgical excision with removal of the involved accessory salivary gland has been suggested as the treatment.¹⁸

Table 1: Histopathologic features of mucous extravasation and retention cyst

Type of cyst	Epithelium	Connective tissue	Inflammatory infiltration	Communication between duct and cystic area
Poorly defined cyst	No epithelium	Poorly defined cavity filled with faint eosinophilic material with separation of collagen fibers of lamina propria of mucous membrane and of the submucosa	Macrophages, scattered eosinophils and few plasma cells	+
Well defined cyst (1)	No epithelium	Sharply circumscribed cavity containing faintly eosinophilic amorphous material	Numerous macrophages and few eosinophils	+++
Well defined cyst (2)	Partial (stratified squamous variety) or complete (simple or pseudostratified columnar)	Well delineated cavity		-

Table 2: Differential diagnosis for oral mucocele

Lesion	Site	Clinical appearance	Consistency	Progression
Lipoma	Labial mucosa	Elevated, smooth surfaced, sessile or pedunculated nodule. Pink in color	Firm	Slow growing
Fibroma	Less common on lower lip	Smooth surfaced, yellowish, sessile or pedunculated, asymptomatic nodule	Soft and freely movable	Slow growing
Hemangioma	Lips	Flat or raised, red or bluish red	Compressible, blanch and slowly filling when digital pressure is released	Rapid, initially and then grows slowly
Varix	Lips	Asymptomatic, non-tender, bluish purple nodule	Firm	
Traumatic neuroma	Lower lip	History of trauma. Smooth surfaced, non-ulcerated nodule of normal color	Digital pressure may cause pain	Slow growing
Salivary duct cyst	Lips	Smooth surfaced, bluish swelling	Soft and fluctuant	Slow growing
Epidermoid cyst	Lips	Painless, round, pink to yellowish nodule present in the midline	Firm and shows mobility	Slow growing
Lymphangioma	Lip is a less common site	Asymptomatic tumor mass of pink or purple color with pebbled surface	Soft	
Pyogenic granuloma	Lip is a fairly common site	Smooth, pedunculated Orsessile, pink to red to purple color, few mm to cm in size, and painless swelling	Soft	May exhibit rapid growth

The excised tissue must be submitted to the pathological investigations to confirm the diagnosis and rule out the salivary gland tumor. Laser ablation, cryosurgery, and electrocautery are approaches that have also been used for the treatment of the conventional mucocele with variable success.¹³

CONCLUSION

The outcome of any surgical procedure rests majorly on the pre-operative assessment of the case. Thus, a careful examination and a thorough case history and diagnosis before the actual procedure goes a long way in determining the outcome of any procedure.

The non-neoplastic diseases of salivary gland pose a diagnostic and therapeutic challenge to the clinicians because of their close resemblance of clinical presentation despite different etiologies. Thus, clinical knowledge of oral lesions, determination of the etiopathogenesis of these lesions, is necessary for the correct diagnosis and for the indication of appropriate treatment.

REFERENCES

1. Wood NK, Goaz PW. Peripheral oral exophytic lesions. In: Differential Diagnosis of Oral Lesions. 4th ed. St. Louis, MO: Mosby Year Book; 1991. p. 158-94.
2. Baurmash HD. Mucoceles and ranulas. J Oral Maxillofac Surg 2003;61:369-78.
3. Ata-Ali J, Carrillo C, Bonnet C, Balaguer J, Peñarrocha M, Peñarrocha M. Oral mucocele: Review of literature. J Clin Exp Dent 2010;2:e18-21.
4. Re Cecconi D, Achilli A, Tarozzi M, Lodi G, Demarosi F, Sardella A, *et al.* Mucoceles of the oral cavity: A large case series (1994-2008) and a literature review. Med Oral Patol Oral Cir Bucal 2010;15:e551-6.
5. Cohen L. Mucoceles of the oral cavity. Oral Surg Oral Med Oral Pathol 1965;19:365-72.
6. Aldrigui JM, Silva PE, Xavier FC, Nunes FD, Bussadori SK, Wanderley MT. Mucocele of the lower lip in a 1 year old child. Pediatr Dent J 2010;20:95-8.
7. Cunha RF, De M, Carvalho P, Guimaraes CM, Macedo CM. Surgical treatment of mucocele in an 11 month-old baby: A case report. J Clin Pediatr Dent 2002;26:203-6.
8. Kopp WK, St-Hilaire H. Mucosal preservation in the treatment of mucocele with CO₂ laser. J Oral Maxillofac Surg 2004;62:1559-61.
9. Tal H, Altini M, Lemmer J. Multiple mucous retention cysts of the oral mucosa. Oral Surg Oral Med Oral Pathol 1984;58:692-5.
10. Rashid A, Anwar N, Azizah A, Narayan K. Cases of mucocele treated in the Dental Department of Penenag Hospital. Arch Orfac Sci 2008;3:7-10.
11. Dent CD, Svirsky JA, Kenny KF. Large mucous retention phenomenon (mucocele) of the upper lip. Case report and review of the literature. Va Dent J 1997;74:8-9.
12. Nico MM, Park JH, Lourenço SV. Mucocele in pediatric patients: Analysis of 36 children. Pediatr Dermatol 2008;25:308-11.
13. Yamasoba T, Tayama N, Syoji M, Fukuta M. Clinicostatistical study of lower lip mucoceles. Head Neck 1990;12:316-20.
14. Oliveira DT, Consolaro A, Freitas FJ. Histopathological spectrum of 112 cases of mucocele. Braz Dent J 1993;4:29-36.
15. Yadav A, Grover H, Yadav P, Nanda P. A novel technique for the treatment of mucocele: A case report. Arch Dent Sci 2011;2:33-5.
16. Yagüe-García J, España-Tost AJ, Berini-Aytés L, Gay-Escoda C. Treatment of oral mucocele scalpel versus CO₂ laser. Med Oral Patol Oral Cir Bucal 2009;14:e469-74.
17. Robinson L, Hjorting-Hansen E. Pathologic changes associated with mucous retention cysts of minor salivary glands. Oral Surg Oral Med Oral Pathol 1964;18:191-205.
18. Huang IY, Chen CM, Kao YH, Worthington P. Treatment of mucocele of the lower lip with carbon dioxide laser. J Oral Maxillofac Surg 2007;65:855-8.

How to cite this article: Shirodkar G, Tungare S. Oral Mucocele: A Report of Two Cases and Literature Review. IJSS Case Reports & Reviews 2016;3(1):7-11.

Source of Support: Nil, **Conflict of Interest:** None declared.