

# A rare presentation of mucocele and irritation fibroma of the lower lip

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## Abstract

The effects of chronic local irritation have been seen commonly in the form of fibroma or mucocele in children. We report a nine year old girl with the chief complaint of multiple swellings in the lower lip which was diagnosed both clinically and histologically as fibroma and mucocele. Surgical excision was done under local anesthesia with no post-operative complications. To our knowledge there was no other occurrence, either at the same site or at different locations, involving these two lesions in the oral mucosa.

**Keywords:** Fibroma, focal fibrous hyperplasia, irritation fibroma, lip biting, mucocele

## Introduction

Inflammatory hyperplastic lesion may be defined as “an increase in the size of an organ or tissue due to an increase in the number of constituent cells, as a local response of tissue to injury. The traumatic irritants include calculi, overhanging margins, restorations, foreign bodies, chronic biting, margins of caries and sharp spicules of bones and overextended borders of appliances. Fibrous hyperplasia (traumatic or irritation fibroma) is the healed end product of the inflammatory hyperplastic lesion.<sup>[1]</sup> Clinically they appear either as pedunculated or sessile growth on any surface of the mucous membrane. The majorities are small lesions and those measuring > 1 cm is rare. They do not have malignant potential and recurrences are mostly as a result of failure to eliminate the chronic irritation involved.<sup>[2]</sup>

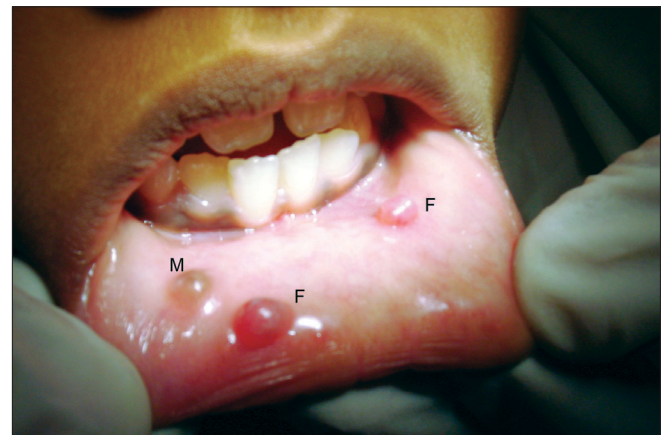
Trauma to minor salivary glands has been cited as the reason for the formation of an extravasation mucocele. The lower lip is the most common area for occurrence of this lesion where the most common history of trauma has been reported. They present as discrete painless swelling measuring from a few millimeters to a few centimeters. Appearance of a bluish lesion after trauma is highly suggestive to mucocele. Sometimes a superficial nodule is traumatized allowing it to deflate, but recurrence is common under these circumstances.<sup>[2]</sup>

Few studies have comprehensively reported the incidence of oral soft tissue lesions in children. A 15 year report on Pediatric oral lesions in an institution in Thailand had shown the most frequently encountered lesions were dentigerous cyst, mucocele, pyogenic granuloma, ameloblastoma, radicular cyst, odontoma, odontogenic keratocyst, irritation fibroma, fibrous dysplasia, and osteomyelitis with no statistical difference in the occurrence between the genders.<sup>[3]</sup> Short-

term institutional studies by Mathew *et al* have shown no incidence of mucocele or irritation fibroma in the age group of 2-20 years.<sup>[4]</sup> Pour MA *et al* have reported that 0.38% were diagnosed histologically with irritation fibroma in a total number of 260 cases.<sup>[5]</sup> Rashid in a 5 year clinical study report showed diagnosis of mucocele in 28.6% in patient <20 years of age and a history of trauma in the form of lip biting was frequently reported.<sup>[6]</sup> Herein, we report an uncommon interesting case of simultaneous fibroma and mucocele occurrence in the lower labial mucosa.

## Case Report

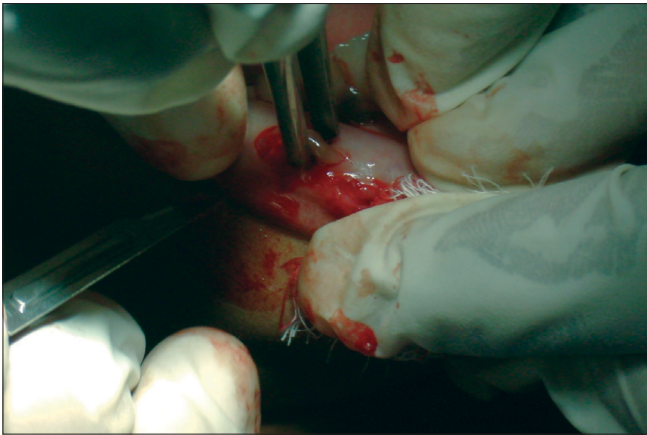
A 9 year old girl had come to the Department of Pedodontics and Preventive dentistry, Thai Moogambigai Dental College and Hospital, with the chief complaint of multiple swellings in the lower lip that were present for the past 6 months. The patient gives a history of the swellings being small at first with a slow enlargement. The habit of lip biting was also confirmed by the parents. Clinically three enlargements, on the lower labial mucosa, one in the left side and two in the right side, were noticed [Figure 1]. Two of the lesions appeared as an elevated sessile nodule with a smooth surface measuring 4 mm in diameter [Marking F in Figure 1]. One of



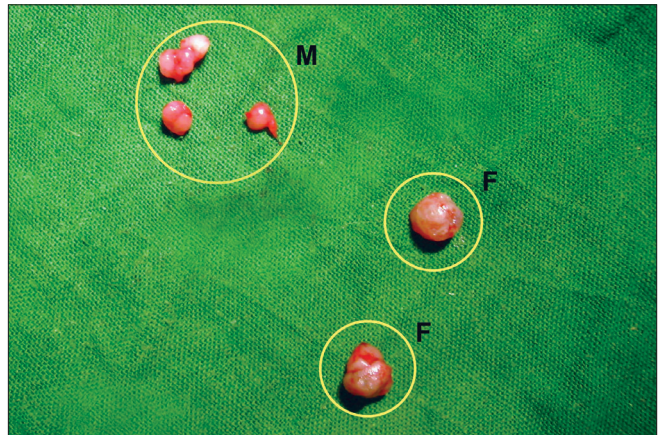
**Figure 1:** Pre-operative view of three enlargements in the lower lip with the mucocele [M] bearing a bluish and translucent cast. Fibroma [F] appearing as an elevated, sessile nodule

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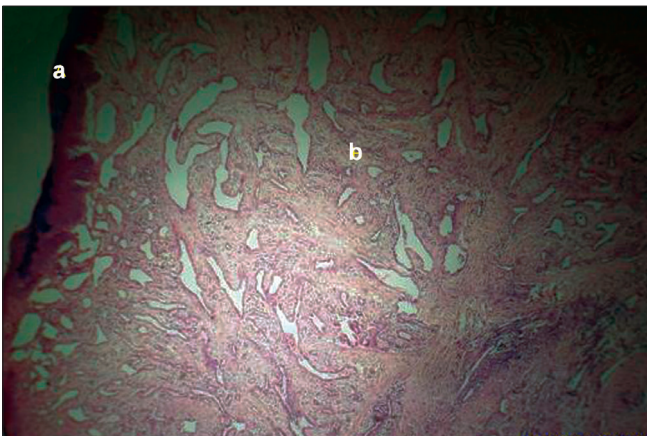
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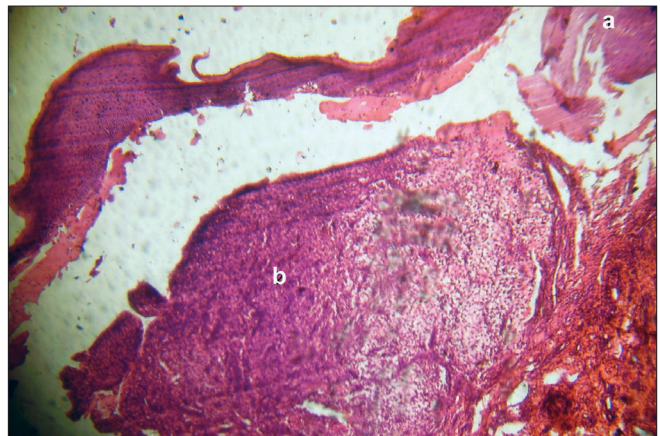
**Figure 2:** Surgical excision of three swelling done under local anesthesia



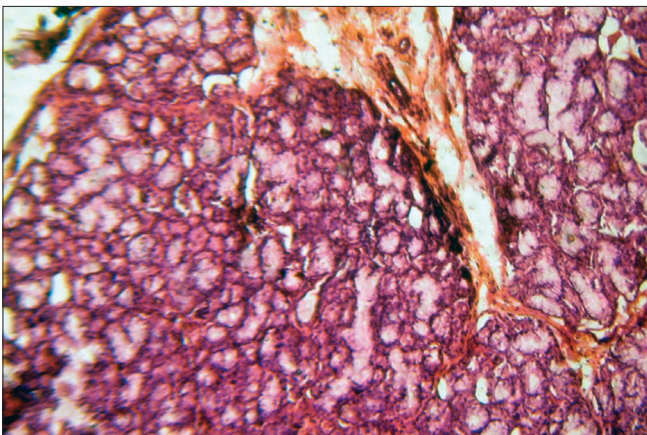
**Figure 3:** Excised specimen (M) mucocele and (F) fibroma



**Figure 4:** Photomicrograph of fibroma reveals the surface showing shortening of stratified squamous (a) epithelium and (b) interlacing collagenous fibers



**Figure 5:** Photomicrograph of mucocele showing mucin (a), granulation tissue (b)



**Figure 6:** Photomicrograph of a section of a deeper part of the mucocele showing acini of the salivary gland



**Figure 7:** Lip-Bumper for correction of lip biting habit

the lesions appeared as a raised, circumscribed vesicle also measuring 4 mm in diameter [Marking M in Figure 1], with a bluish translucent cast. No submental or submandibular lymph nodes were palpable. Considering the history and

clinical findings, a differential diagnosis of irritation fibroma and mucocele was noted.

Management of the lesions included both surgical and

preventive aspects pertaining to the presenting condition. Surgical excision was [Figure 2] done under local anesthesia revealing multiple cystic mass in relation to the region of the mucocele and a single mass in each of the region which contained the fibroma. The mucocele had inadvertently ruptured, considering the size, during excision due to which the contents could not be preserved. Suturing of the surgical site as done and post-operative instruction was given. The patient was advised lip bumper for management of the lip biting habit, the suspected cause for the lesions. The specimens [Figure 3] excised were sent to the Department of Oral and Maxillofacial Pathology for confirmation of the diagnosis. Photomicrograph of fibroma reveals the surface showing shortening of stratified squamous epithelium and interlacing collagenous fibers [Figure 4]. Photomicrograph of the mucocele [Figure 5] revealed a cyst-like cavity with eosinophilic coagulum, infiltrated by dense inflammatory cells with granulation tissue. The surrounding connective tissue is fibrous mimicking a cyst wall showing fibroblasts. Salivary acini [Figure 6] was also seen in the deeper part of the section and a definitive diagnosis of mucocele (extravasation type) given. Review was done after 1 week and a lip bumper was placed after 15 days [Figure 7]. Following the histological confirmation a definitive diagnosis of fibroma and mucocele was given by the Department of Oral and Maxillofacial Pathology.

## Discussion

Unhealthy habits, when repeated excessively become harmful, contributing to orofacial muscular imbalance associated with alterations in bone growth, dental malposition, and dentofacial abnormalities. Biting, licking, or sucking of lips and cheeks is frequently accompanied by chapping, dryness, erosion, irritation of one of both lips and/or vermilion borders.<sup>[7,8]</sup>

The general literatures have cited the reason for a few of the oral lesions like irritation fibroma and mucocele, arising as a result of oral habits such as lip biting/sucking. Atypical lesions can occur on other regions such as the tongue such the one in a boy aged 7 years and 11 months undergoing maxillary expansion with a quad helix. The impaction of the tongue against the expansion appliance due to lip sucking had caused the atypical lesions which could have been prevented by detection and elimination of habit prior to orthodontic therapy.<sup>[9]</sup>

Fibroma is the most common benign soft tissue tumor in the oral cavity. Most fibro as represent reactive focal fibrous hyperplasia due to trauma or local irritation. An interesting point to be noted is that the fibroma is a neoplasm of connective tissue origin and microscopically similar to inflammatory hyperplasia. Hyperplasia is a self-limiting process unlike neoplasia and hyperplastic cells sometimes show regression after removal of the stimulus. Neoplastic

tissue sometimes resembles that of hyperplastic tissue that do not regress; hence, it can be said that neoplasm can also occur from chronic irritation.<sup>[10]</sup>

Traumatic fibroma have also been associated with oral practices like tongue piercings have been reported.<sup>[11]</sup> Rare association of reactive hyperplasia with a natal tooth in an 4 year and 6 month old infant has been reported, showing that local irritants are one of the major causes of these reactive hyperplastic lesions.<sup>[12]</sup>

The mucocele is a term that describes swelling caused by accumulation of saliva as a result of trauma or obstruction of minor salivary glands. They are classified as extravasation type and retention type of which the extravasation type is more common. A large form of mucocele in the floor of the mouth is known as a ranula. Laceration of ducts leads to pooling of saliva in submucosal tissue and although termed a cyst, the extravasation type does not have an epithelial cyst wall or distinct border. Superficial lesions have a characteristic bluish hue and deeper lesions can be diffuse with normal colored mucosa covering it. Development of a bluish hue after trauma is highly suggestive of mucocele, but other salivary neoplasms and soft tissue neoplasms should be considered.<sup>[13]</sup>

Mucocele have been well reported in literature with diagnosis age ranges from neonates to adolescence. The mucous extravasation phenomenon is usually reported in the lips, but a rare appearance of a mucus extravasation cyst in the alveolar ridge in a 1 month old neonate has been reported.<sup>[14]</sup> Orthodontic treatment may sound a very unlikely an etiological factor for mucocele and reports are relatively rare. A 10 year old girl treated with an activator appliance and an individual vestibular screen had been diagnosed with mucocele in the lower lip which had developed suddenly.<sup>[15]</sup> Though individual case reports of mucocele have been reported, association with other cysts or hyperplasia have not been documented except for a concurrent occurrence of an epidermoid cyst and mucocele in the lower lip of a 10 year old boy with habitual lower lip biting.<sup>[16]</sup>

## Conclusion

Mucocele and fibroma in most cases are benign and self-limiting conditions, diagnosed based on clinical and pathological examination. Most cases report a history of habitual lip biting and trauma to the mucosa, with slow development. Trauma commonly described in the form of a fall or hit can also be induced in the dental clinic especially after local anesthesia requiring even hospitalization.<sup>[17]</sup> The key to prevention will be early education and interception of oral habits in children. Swellings arising in the soft tissue should be diagnosed clinically and histopathologically to arrive at a definitive diagnosis. Those undergoing orthodontic therapy should be monitored for areas of irritation in the oral mucosa. Complete excision has been the choice of treatment

and recurrence has been associated with incomplete removal of the lesion. Our patient reported good prognosis and an uneventful post-operative recovery and has been advised a lip bumper for management of the lip biting habit.

## References

1. Wood NK, Goaz PW. Differential diagnosis of oral and maxillofacial lesions. 5th ed. Missouri: Mosby; 2006. p.136-8.
2. Greenberg MS, Glick M, Ship JA. Burket's Oral Medicine. 11th ed. Ontario: BC Decker Inc; 2008. p.131-2.
3. Dhanuthai K, Banrai M, Limpanaputtajak S. A retrospective study of pediatric oral lesions from Thailand. *Int J Pediatr Dent* 2007;17:248-53.
4. Mathew AL, Pai KM, Sholapurkar AA, Vengal M. The prevalence of oral mucosal lesions in patients visiting a dental school in southern India. *Indian J Dent Res* 2008;19:99-103.
5. Pour MA, Rad M, Mojtahedi A. A survey of soft tissue tumor-like lesions of oral cavity: A clinicopathological study. *Iran J Pathol* 2008;3:81-7.
6. Rashid AK, Anwar N, Asisah AM, Narayan KA. Cases of mucocele treated in the dental department of Penang hospital. *Arch Orofacial Sci* 2008;3:7-10.
7. Josell SD. Habits affecting dental and maxillofacial growth and development. *Dent Clin North Am* 1995;29:851-60.
8. Turgeon-O'Brien H, Lachapelle D, Gagnon PF, Larocque I, Maheu Robert LF. Nutritive and nonnutritive sucking habits: A review. *ASDC J Dent Child* 1996;63:321-7.
9. Barberia E, Lucavechi T, Cardenas D, Maroto M. An atypical lingual lesion resulting from the unhealthy habit of sucking the lower lip: A clinical case study. *J Clin Pediatr Dent* 2006;30:280-2.
10. Shafer WG, Hine MK, Levy BM. A Textbook of Oral Pathology. 6th ed. Philadelphia: WB Saunders; 2009. p.126-7.
11. Barberia Leache E, Gracia Naranjo AM, Gonsalez Couso R, Gutierrez Conzalez D. Are the oral piercing important in the clinic? *Dental Pract* 2006;1:45-9.
12. Singh S, Subbareddy VV, Dhananjaya G, Patil R. Reactive fibrous hyperplasia associated with a natal tooth - A Case Report. *J Indian Soc Pedo Prev Dent* 2004;22:183-6.
13. Greenberg MS, Glick M, Ship JA. Burket's Oral Medicine. 11th ed. Ontario: BC Decker Inc; 2008. p.202-3.
14. N Karla, S Chaudhary, B Singh. Mucous extravasation phenomenon on the alveolar ridge in neonate: A case report. 2004. *J Indian Soc Pedo Prev Dent* 2004;22:36-7.
15. Rose EC, Rose C. Mucocele on the lower lip: a case report. *J Orofac Orthop* 2004;433-5.
16. Wang WC, Lin LM, Shen YH, Lin YJ, Chen YK. Concurrent extravasation of mucocele and epidermoid cyst of the lower lip: A case report. *Kaohsiung J Med Sci* 2005;21:475-9.
17. Chi D, Kanellis M, Himadi E, Asselin ME. Lip biting in a pediatric dental patient after dental local anesthesia: A case report. *J Pediatr Nurs* 2008;23:490-3.

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