

Buccal mucosal hypertrophy secondary to open bite

S. NILIMA, ANUJ SHARMA¹

Abstract

Timely and accurate diagnosis of a medical/dental condition is the first critical step to ensure appropriate treatment. Lack of astuteness in diagnosis may assume many forms. Each medical/dental practitioner is morally and legally bound to perform his or her duties to a specified standard of care. The cause of misdiagnosis may be hurriedness, lack of testing, or a simple mistake; failure to diagnose can constitute a breach of that duty, making the medical/dental provider liable for any resulting damages. The following case report highlights one such misdiagnosed case.

Keywords: Appliance, collagen membrane, fibrosis, malocclusion, misdiagnosis

Introduction

The oral mucosa performs essential protective functions that significantly affect the general health of an individual. A decline in the protective functions of the oral mucosa could expose the individual to a variety of pathogens and chemicals that enter the oral cavity.

Of the myriad of white lesions found in the oral mucosa, oral leukoplakia is a relatively common white lesion of the oral cavity. A proficient clinician when examining a white lesion should establish the clinical diagnosis mostly by excluding all other lesions that appear white in oral cavity. *Linea alba*, leukoedema, and traumatic keratosis have a chance of being misdiagnosed as leukoplakia. In visualizing a white lesion, one should also look for the etiologic factors that could cause constant trauma resulting in hypertrophy in the affected area.

Case Report

A 12-year-old female patient was referred to the dental outpatient department of HAH Centenary Hospital with

an asymptomatic swelling in left buccal mucosa. The swelling started insidiously 3 years ago without any antecedent trauma or dental infection and gradually increased in size. The patient sought multiple medical consultations, for which various diagnoses were made including leukoplakia and submucosal buccal cyst. The patient gave history of being operated twice in the past for the same. Histopathology report suggested buccal mucosal hypertrophy. However, the swelling recurred within 6 months of each surgery.

On examination, patient was apparently healthy with noticeable facial asymmetry with prominence in lower third of face on left side. Extra-oral tissues appeared clinically normal. Intra-oral examination revealed a diffuse swelling in left buccal mucosa extending from lower left second molar region to left commissure obliterating the buccal vestibule. Overlying mucosa appeared normal on visual inspection [Figure 1].

On palpation, the lesion was soft and nontender. Dental examination revealed retained left lower deciduous second molar (75) with the upper left second premolar (25) in torsion. This resulted in an open bite (lack of occlusion of teeth when the jaw is closed normally) in the region [Figure 2]. Radiographic findings revealed retained lower deciduous second molar (75) and congenitally missing second premolar in the region (35) [Figure 3]. Based on clinical examination and past histopathology report, diagnosis of left buccal mucosal hypertrophy secondary to open bite in relation to 24 and 75 was made.

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Chronic irritation of the oral mucosa frequently results in abnormal fibroblast activation and keloid formation. This pathological scar formation is often associated not only with pain, functional disability but also disfigured esthetics of the tissue.^[1]

The open bite was hypothesized as being the etiology of the chronic cheek bite and, therefore, its correction was planned before the excision of the lesion. Fixed orthodontic therapy was suggested which was refused by the patient's father owing to financial constraints. As an alternative, porcelain fused to metal crown on 75 was cemented to close the open bite which gave fair results. Surgery was undertaken after thorough preoperative workup. The lesion was excised under general anesthesia and wound coverage was done using collagen membrane (Köllagen, Eucare Pharmaceutical, India) secured with 3-0 vicryl (Ethicon, Johnson and Johnson, India) at wound margins [Figure 4].

The Kollagen is sterile collagen sheets of bovine origin. It is an effective barrier against infection and protects the

regenerating epithelium. It peels off as the wound heals and effective epithelialization occurs.

Two days postoperatively, a buccal shield made of acrylic was inserted [Figure 5].

This acted as an aid to keep away the healing tissues from dental arches, and therefore, coming in bite. The patient was advised liquid and semisolid diet and to wear the shield throughout the day until complete healing. Collagen membrane completely resorbed after 2 weeks. Following this normal diet was resumed, but shield was continued until 2 months and then tapered over the next 6 months to use of no shield. The patient was kept on quarterly follow-up. Nearly 18 months postoperatively, there has been no recurrence of the lesion except for the scarring at left commissure which might require commissuroplasty for cosmetic reasons [Figure 6].

Discussion

In a developing country like India where the ratio of health practitioners to the population is low, health professionals



Figure 1: Left buccal mucosal hypertrophy



Figure 2: Open bite in relation to 75 and 24

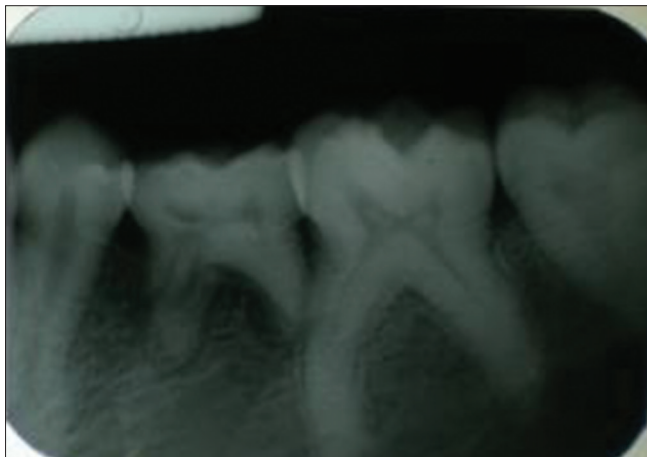


Figure 3: Intra-oral Periapical Radiograph showing congenitally missing 35

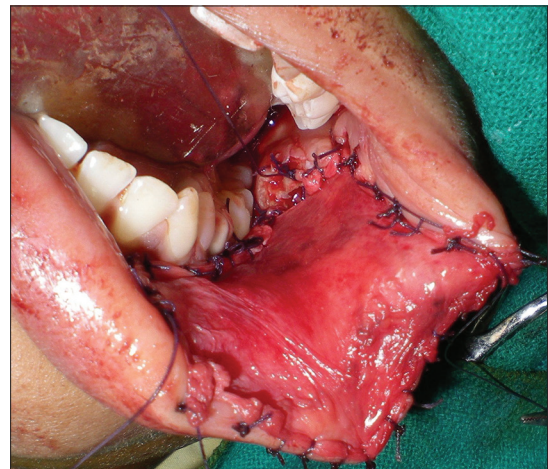


Figure 4: Surgical wound covered with collagen membrane



Figure 5: Buccal shield inserted 48 hrs after surgery

in tertiary centers are overburdened with their respective work. Population belonging to lower socioeconomic status relies on these centers for treatment. Treatment is often decided even before the contributing factors are thoroughly evaluated. This violates the basic fundamentals of medicine, “do not treat the symptom but the disease” that is, “identify and treat the root cause” of a disease.

This also holds true with our patient in whom “buccal mucosal hypertrophy secondary to open bite” was misdiagnosed as leukoplakia, submucosal cyst by some of the practitioners. The patient was operated twice for the same. Recurrence within 6 months was seen after each surgery.

Based on the clinical examination and previous histopathological reports, we first treated the open bite responsible for the lesion by giving a crown on lower deciduous tooth. We also hypothesized that the use of an oral appliance would prevent further trauma. An acrylic buccal shield was fabricated. A buccal shield is similar to an oral screen that is a myofunctional orthodontic appliance that is indicated to restore nasal breathing, intercept premaxillary protrusion, and prevent habits such as finger-sucking and tongue-thrusting.^[2] We called it as a buccal shield as it was designed to shield the healing buccal mucosa after planned surgery from trauma.

Surgery under general anesthesia was undertaken for excision of the lesion. Wounds, left uncovered, are prone to infection, contraction, and scarring with other clinical complications and require means to close the defects. The usefulness of collagen membrane dressing over the surgical defects of oral mucosa is well-documented in the literature.^[3-5]

In our case also collagen membrane was used for wound coverage. Forty-eight hours postoperatively buccal shield was delivered to ensure a protection of healing wound from any self-inflicted trauma. It fitted passively in the vestibular space between the cheek and teeth. The patient tolerated the appliance well.



Figure 6: Eighteen months follow-up without any recurrence of the lesion in buccal mucosa

Modifications of the design were performed on the basis of stability and retention to maintain the patient’s compliance. Nevertheless, our patient adjusted to the appliance quickly and without incident. Healing of the soft tissue wounds progressed satisfactorily. The patient was kept on periodic follow-up. The shield was worn in continuity until 2 months and then tapered over the next 6 months to its abstinence. It has been 18 months postsurgery, and there has been no recurrence of the lesion.

Conclusion

The case reported is no novel presentation. Our attempt here is to bring forth, one of the facets of misdiagnosis. The un-identification of the etiology of this hypertrophic lesion led to multiple surgical interventions, increased treatment cost, time, and dissatisfaction. The importance of thorough examination cannot be overemphasized. Also multidisciplinary approach in patient’s treatment and care should be encouraged.

No one is immune from error but a quality time spent on patient examination is what every patient deserves and the moral duty of a clinician. Establishing a definitive diagnosis prior to, or in conjunction with, treatment is of paramount importance.

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Conflicts of interest

There are no conflicts of interest.

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