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Oral Submucous Fibrosis: a case report

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Abstract

We describe an interesting case of oral sub mucous fibrosis accompanied by severe trismus in a 23 years old man. The patient had initially been diagnosed as having internal derangement of the temporomandibular joint and conservative treatment had failed to decrease the symptoms. Despite extremely limited temporomandibular joint movement, cone beam computed tomography revealed no important abnormality. The patient had been referred to Mashhad Dental School for further evaluation. On detailed case history, the patient revealed oral adverse habits such as pan & tobacco chewing and on palpation fibrous bands were noticed on the anterior and some parts of buccal mucosa; therefore, the patient was diagnosed with oral submucous fibrosis and underwent surgical excision of fibrous bands.

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Introduction

Oral submucous fibrosis (OSMF) is a premalignant condition mainly associated with the chewing areca nut, an ingredient of betel quid and is prevalent in South Asian populations, such as India, Bangladesh and Pakistan and in south Asian immigrants to other parts of the world (1). OSMF is also known as “diffuse OSMF”, “idiopathic scleroderma of mouth”, ”idiopathic palatal fibrosis”, “juxta-epithelial fibrosis”, etc. Most of the OSMF patients belong to the 20-40- years old age group with a male predominance. OSMF has been reported in 87% of males being predominantly affected with a malignant transformation rate of 11.7%. Around 7.6% of malignant transformation rate has been reported over a period of 17 years in the OSMF. The most common initial symptoms and signs are burning sensation and erythematous lesion followed by pale mucosa, which has a white marbling appearance. In more advanced stage of the disease, the essential feature is a fibrous band restricting mouth opening and causing difficulty in

mastication, speech and oral hygiene (2). In this report, we describe a case of oral submucous fibrosis in a man who had only trismus without other signs and an interesting path to diagnose his disease.

Case report

A 23 year- old man with a complaint of progressive difficulty in opening his mouth over the past 6 months is presented that conservative treatment had failed to decrease his symptoms (Figure1). His dentist had done various investigations such as cone beam computed tomography (CBCT) and ultrasonography to rule out temporomandibular diseases and fractures (Figure2,3).

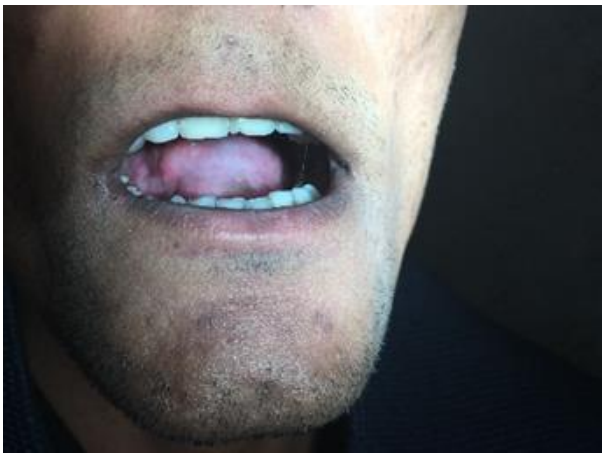

Figure1. Extraoral photograph showing reduced mouth opening

The result of CBCT (Planmeca ProMax 3D mid; Planmeca, Helsinki, Finland) had been normal and just a bit anterior displacement of disk had been reported that had not been enough for such trismus.

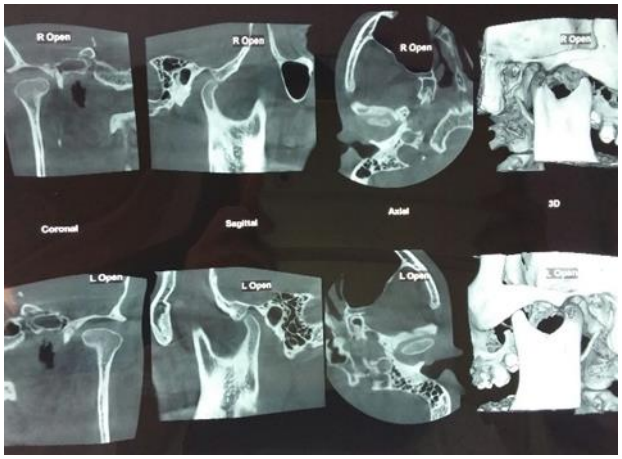

Figure 2. Sagittal, axial and coronal cone-beam CT images showing limitation of condylar movement in open mouth position.

Therefore, the patient had been subjected for ultrasonography to measure the thickness of masseter muscles and no changes in parenchyma of muscles had been found and thickness had been about 11mm decreased echogenicity of muscle had been noticeable due to the low body mass index (BMI) of the patient, and vascularity of this region evaluated by color Doppler ultrasonography had shown reduction too.

As the results had not been satisfactory, the dentist had requested magnetic resonance imaging (MRI) to rule out internal disc derangement of TMJ and the patient had been referred to Mashhad Dental School for further evaluation. This time detailed case history was taken in which the patient revealed that he has been a pan and tobacco chewer since two years ago (2-3 times a day). On comprehensive intraoral examination, we noticed fibrous bands on the anterior part and some parts of buccal mucosa. Therefore, we provisionally diagnosed the case as oral sub mucous fibrosis and incisional biopsy was taken for histopathological study and it got the definite diagnosis of oral sub mucous fibrosis with mild dysplasia.

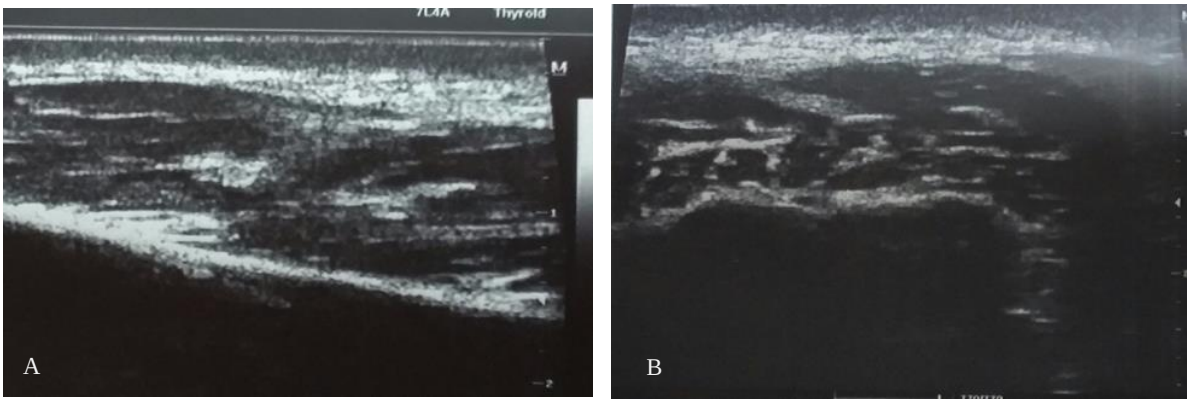

Figure 3. Ultrasonographic measurements of right (A) and left (B) masseter muscle in OSMF patient shows normal echo parenchymal

Discussion

Oral submucous fibrosis is a precancerous condition that occurs in an estimated 2.5 million people worldwide. In Central, Southern, and Southeast Asia, the abuse of smokeless tobacco popularly involves the chewing of betel quid or pan-supari (1). The development of OSMF depends on the amount of areca nut in betel quid and the frequency and duration of chewing betel quid (3). Oral submucous fibrosis typically affects the buccal mucosa, lips, retro molar areas, soft palate and occasionally the pharynx and the esophagus. OSMF is always associated with juxta epithelial inflammatory reaction followed by a fibro elastic change of lamina propria with epithelial atrophy leading to stiffness of the oral mucosa, trismus and inability to eat (4). Once initiated, the disease is not pliable to reversal at any stage of the disease process, even after cessation of the habit. As the tissues become rigid, it results in terms of loss of mouth function and causes significant morbidity. The mouth opening becomes difficult and leads to mortality when there is a transformation into squamous cell carcinoma (2).

This case emphasizes the importance of taking precise history from patients to prevent incorrect diagnosis. One of the clinical features not to be missed out is masseter muscle

hypertrophy, seen on both right and left sides of face in some patients of OSMF. Prolonged high activity of the muscles results in increased thickness of the masseter muscle (5). The probable cause of this hypertrophy is increased demand on the muscle due to the habit of guthka chewing and ultrasonography is a more reliable and easily available technique for the measurement of the masseter muscle thickness than MRI (6).

Chakarvarty et al in 2014 showed that normal thickness of masseter muscle is about 7-8mm and in OSMF patients, it is about 10-11mm (7). In the study of Kiliaridis and Kalebo (8), normal thickness was 9.7(+/- 1.5) mm in men and 8.7(+/- 1.6) mm in women.

According to the other studies, normal thickness of masseter muscle in relaxed condition is 13-14 mm (9).

In our case, although the patient was in advanced stage of OSMF, his muscle thickness was 11mm, which confirms the results of Chakarvarty et al, and Kiliaridis studies.

There is a large variation in the thickness of the muscle among individuals that have been attributed to some important factors like gender and facial morphology (8).

Conclusion

OSMF described in the present case was not difficult to be diagnosed and shows the important role of dentists in the early diagnosis of high risk premalignant lesions and cancer by taking a precise and complete history and oral examination. Accordingly, patients should be educated to prevent the malignant transformation of such oral lesions as cancer that has high morbidity and mortality.

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