

## Case Report

### Bilateral leukoplakia of different magnitude associated with tobacco consumption

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#### ABSTRACT:

Leukoplakia is a clinical description that is used based on the histological information of the lesion. Its potential for malignant transformation makes such lesion very important for early diagnosis and treatment. Usually associated with mechanical or chemical irritant like tobacco, it presents a very wide clinical picture among all white lesions. It may look an innocuous surface discoloration or erythema of the mucosa while in some cases it may be aggressive with denuded mucous membranes. This article presents a case of both such lesions in one patient, on either side of buccal mucosa who wanted to get a maxillary lateral incisor restored with a crown after endodontic treatment. After histopathological diagnosis of both lesions, it was decided to progress with dental treatment and patient was advised for complete and definite cessation of tobacco chewing. The maxillary lateral incisor was first built with cast post core following which a metal ceramic restoration was given.

**Keywords:** fiber post, dowel, erythroplakia, white lesions, premalignant lesions

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#### INTRODUCTION

Dentists have an important role to play in overall health rather than just oral health of an individual. Both dental specialists and general practitioners must be able to recognize diseases that may be either as a result of local influence or due to systemic influence.

<sup>1</sup> Around the sixteenth century, Europe was introduced to tobacco products by Spanish and Portugese men. <sup>2</sup> tobacco has many forms and ways of consumption. Tobacco chewing has been associated with many different types of oral carcinoma, among which leukoplakia, which is a premalignant lesion occurs mainly in middle and later life. <sup>3</sup> Oral carcinomas are known to have serious psychological and social implications since disfigurement and loss of important functions like phonetics, esthetics and taste are also affected or lost.

<sup>4</sup> In certain cases, facial disfigurement has been seen to result in what is so called 'social death' of an individual. <sup>5</sup> Early diagnosis and treatment is seen to result in 85 percent or better cure rate. <sup>6</sup> It is

predominantly a white lesion which should be differentiated from other benign, premalignant or malignant white lesions. <sup>7,8</sup>

Loss of tooth structure and its subsequent replacement is essential for restoring the normal functions of the oral cavity. It becomes more important when anterior teeth are fractured or grossly curious. If and when, partial loss of the coronal part of the tooth has taken place, it becomes difficult to select the type of restoration that is required. Besides choosing the correct approach, <sup>9</sup> one also has to choose the correct material, especially in patients who have a history of allergy. Restoration with cast post core followed by a crown using metal, ceramic restoration is one of the strongest combinations when natural tooth is already weakened due to caries or after endodontic treatment. <sup>10,11</sup> This article presents a case in which both early and advanced form of leukoplakia was observed on either side of buccal mucosa, while patient giving a history of allergy and

having lost more than 70 percent of natural tooth structure on maxillary lateral incisor.

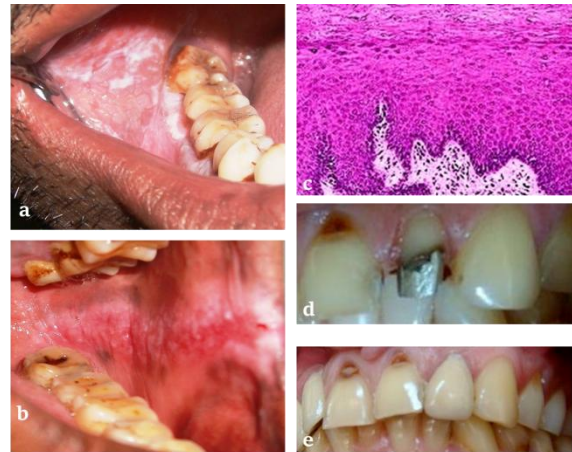
### CASE REPORT

An adult male patient aged 47 years reported to the department of Prosthodontics for restoration of maxillary left lateral incisor, which was endodontically treated but grossly decayed. Patients medical, social, drug and dental history was recorded which revealed that the patient is currently undergoing medical treatment for his oral condition. Further exploration revealed that the patient is a chronic tobacco smoker, chewer and alcohol consumer. Patients nutritional status was poor and also apparently was suffering from vitamin deficiency. Extra oral examination revealed all features within normal limits. Intra oral examination of the soft tissues revealed a diffuse white lesion on the right side of the buccal mucosa in the region of molars while on the opposite site, there was an early white lesion that followed the occlusal plane. On either side, the buccal mucosa appeared intact without any breach or ulceration (Fig 1a, b). Most of the teeth showed poor oral hygiene that included stains and calculus. The occlusal surface of the natural teeth was worn moderately. White lesion on right side presented multiple, dispersed with the outline being diffuse. The lesion on the right side appeared to be an advance while on the left side, it presented a picture of early lesion. A clinical picture of both white lesions on either side was that of a homogenous type that exhibited superficial, shallow cracks, or wrinkles or corrugation at different surfaces. Histopathological diagnosis was done by department of oral medicine and diagnosis. Classical features of keratosis and dyskeratosis were observed histologically (Fig 1c).

For his dental treatment, the patient was presented with treatment option of a cast post core followed by porcelain fused to metal crown for restoration of the maxillary left lateral incisor. Cast post core was fabricated using the direct technique of pattern fabrication using self curing pattern resin (LS; GC America). The resin pattern was then cast into base metal alloy (Wiron 99; Bego, Bremen, Germany) and cemented in place after minor adjustments (Fig 1d). Final impression for preparing a crown was made using elastomeric impression material (Reprosil, Dentsply/Caulk; Milford, DE, USA). After metal and porcelain trial, a porcelain fused to metal single crown was cemented (Poly F Plus; Dentsply DeTrey GmbH, Konstanz, Germany) on the maxillary left lateral incisor (Fig 1a). The patient was put on follow up and was advised to continue treatment for the white lesions.

### DISCUSSION

A case of a male adult presenting with bilateral, histopathologically diagnosed leukoplakia, looking for restoration of a decayed maxillary lateral incisor has been described in this case. The patient had a known allergy especially with metals, which is why



**Figure 1: (a) Aggressive leukoplakia on right sided buccal mucosa – non homogenous type (b) Early white lesion developing on left sided buccal mucosa – homogenous type (c) Histopathology showing features of dyskeratosis (d) Cast post core on lateral incisor (e) Metal ceramic crown on maxillary left lateral incisor**

at the outset, a patch test for nickel allergy was performed.<sup>12</sup>

The test came out negative, thus the base metal alloy was used of both cast post core and metal ceramic restoration. Leukoplakia is a premalignant (potentially malignant) lesion of the oral cavity in which both local and systemic factors are considered to play their role. Irritation that is either mechanical, chemical or thermal in nature have been considered major factors to initiate mucosal response.<sup>13,14</sup> If not controlled at the site presented in this case, the malignant transformation will result in the involvement of the mandible which may lead to severe deformation of the mandible, since in such cases hemimandibulectomy involving removal of normal bone is done to prevent recurrence. Besides in such cases, rehabilitation through maxillary ramp, flange prosthesis or dual occlusion dentures do not yield satisfactory results to the patient.<sup>15</sup> As can be seen in this case, the lesion on the left side can present such a simple picture, that clinicians may be duped into term it a normal phenomena. Therefore a differential diagnosis of such lesions is very important. In its early forms it may present a simple clinical picture that of either a mild lichen planus,<sup>16</sup> or that of aggressive keratoacanthoma.<sup>17</sup> Keratoacanthomas have a clinical and histological resemblance to well differentiated squamous cell carcinoma, which a premalignant lesion like leukoplakia may easily undergo / transform if not treated in time.<sup>18</sup> Leukoplakia is strongly associated with the use of smokeless tobacco habits be it a chewable or non chewable tobacco (snuff).<sup>19</sup> The incidence and prevalence vary according to regions, and countries like India, where smoking of a wide variety of tobacco is customary, the incidence has been found to be in the range of 0.2 to 4.9 percent.<sup>20</sup> Clinically it may present at any site with buccal

mucosa being more common. Clinical picture can be either homogeneous or nonhomogenous. Aggressive white lesions may present cracks which may break and expose underlying mucosa. One of such type is the proliferative verrucous leukoplakia.<sup>20</sup>

Although the grossly decayed lateral incisor could have been restored with a prefabricate fiber post, but we chose the cast post core. Cast post has a high modulus of elasticity,<sup>21</sup> which is required if the restoration is anticipated to bear occlusal stresses. Also cast alloys allow mechanical advantage since they strengthen the tooth structure if it already weakened by caries or endodontic access cavity preparation.<sup>22</sup>

### CONCLUSION

Leukoplakia is a premalignant lesion that presents various forms. All dentists should be familiar with such condition since early treatment can prevent the development of oral cancer. None of the dental treatments are contraindicated in this condition.

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### CONFLICT OF INTEREST

Nil

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