Oral Leukoplakia: Case Report

Oral Lökoplaki

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ABSTRACT The evaluation of the etiology of oral leukoplakia which is the most common premalign or potentially malign lesion of the oral mucosa. A 39-year-old male patient who complains to his gingiva was admitted to the clinic of periodontology. In his clinic examination, he has white lesions on the buccal mucosa and on his commisuras and also he has a tongue that was red, dry and with ragads. In his medical history, he addressed that because of his psychiatric disorder, he has been taking lithium for a long-term and has been smoking 50-60 cigarettes a day. Leukoplakia was determined in the bilateral buccal mucosa and labial commissure on his examination. Lesions were carried out by excisional biopsy. Smoking is the major etiologic factor for developing oral leukoplakia. Xerostomia resulted from using lithium for a long time may be considered as a triggering factor on the side of smoking in the development of oral leukoplakia in patients with bipolar affective disorder.

Key Words: Leukoplakia, oral; xerostomia, smoking

ÖZET Bu olgu sunumunda, oral mukozanın en yaygın premalign veya potansiyel malign lezyonu olan oral lökoplakinin etiyolojisinin incelenmesi amaçlanmıştır. Diş etlerindeki rahatsızlık şikâyetiyle periodontoloji kliniğine başvuran 39 yaşındaki erkek hastanın klinik muayenesinde bukkal mukozada ve komissuralarda beyaz lezyonlar ve kırmızı, kuru, ragadlı dili olduğu tespit edildi. Hastanın medikal hikayesinden psikiyatrik tedavi amacıyla uzun dönem lityum kullandığı ve günde 50-60 adet sigara içme alışkanlığı olduğu öğrenildi. Oral muayenesinde bilateral bukkal mukozasında ve labial kommissurada lökoplaki tespit edildi. Bu lezyonlar eksizyonel biyopsi ile uzaklaştırıldı. Oral lökoplaki gelişmesinde majör etiyolojik faktörlerden olan sigara alışkanlığının yanı sıra lityum kullanımına bağlı ağız kuruluğunun da tetikleyici bir faktör olabileceği hatırlanmalıdır.

Anahtar Kelimeler: Oral lökoplaki; kserostomi, sigara

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Leukoplakia is the most common premalignant or potentially malignant lesion of the oral mucosa.[1] Leukoplakias with similar clinical appearances have presented with very different histopathological characteristics.[2]

Epithelial dysplasia is a neoplastic transformation of epithelium without invasion into the connective tissue.[3-5] Oral pathologists use the term epithelial dysplasia to indicate microscopic features in a biopsy specimen that are associated with a risk of malignant change and then assign a grade of severity.[6]

Conventionally, dysplasia is divided into grades of mild, moderate and severe.[7] Predominant sites of occurrence have changed over the years.The mandibular mucosa and the buccal mucosa account for almost half of the leukoplakies .[8]

The most common site of leukoplakia was buccal mucosa (28.5%), followed by alveolar mucosa (18.7%) and tongue (16.3%). [9] The frequency of dysplastic or malignant alterations in oral leukoplakia has ranged from 15.6 to 39.2 percent in several studies.[10] Oral cancer most commonly occurs in middle-aged and older individuals, although a disturbing number of these malignancies has also been documented in younger adults in recent years. The researchers concluded that although oral cancer occurs earlier in men than women, the risk of females tends to be similar to that of males.[11] Oral leukoplakias are more often seen among heavy users of tobacco and alcohol. Xerostomia is an another risk factor for oral diseases. A study suggested that salivary hypofunction caused by salivary gland disease, medication, or radiation may predispose for secondary oral mucosal disease. In those patients the protective coating of saliva is reduced or absent, leaving the oral mucosa more vulnerable. Candidiasis, burning mouth syndrome, and white lesions of oral mucosa are increased in frequency.[12] Lithium therapy is a an example of the drug induced xserostomia that using in the bipolar disorder which is a psychiatric illness.[13,14] It is effective as an antimanic agent and also prevents recurrent depression and stabilizes mood swings in this psychiatric disorder.[15]

CASE REPORT

A 39-year-old male patient who complains to his gingiva was admitted to the periodontology clinic of the Faculty of Dentistry in the Dicle University. In his clinic examination, he had white lesions on the buccal mucosa and on commisuras and also he had a red, dry tongue with ragads furthermore, there were pus formations around all his teeth (Figure 1-4). The patient stated that he was aware of this lesion and did not eat meal easily, and had lost his sense of taste for a month. In the medical history he stated that he has been using lithium carbonate for five years because of the psychiatric therapy. Also it was learned that due to toxic effect of the longstanding use of lithium carbonate, nephrogenic diabetic insipidus were occurred. In addition, he used to smoke three packets of cigarettes a

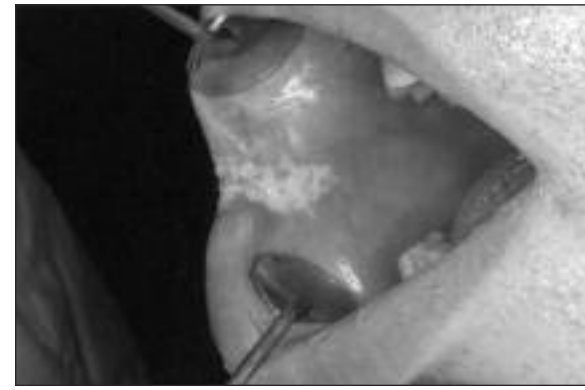

FIGURE 1: Before the therapy,right buccal mucosa.

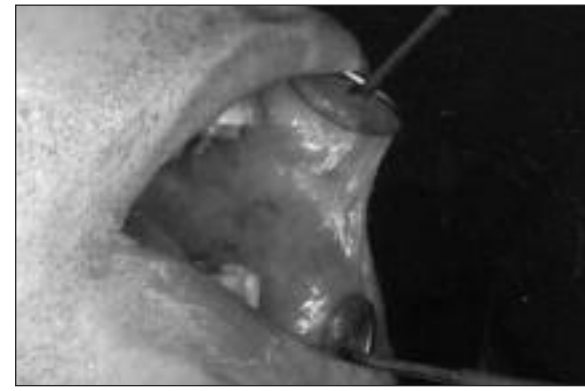

FIGURE 2: Before the therapy,left buccal mucosa.

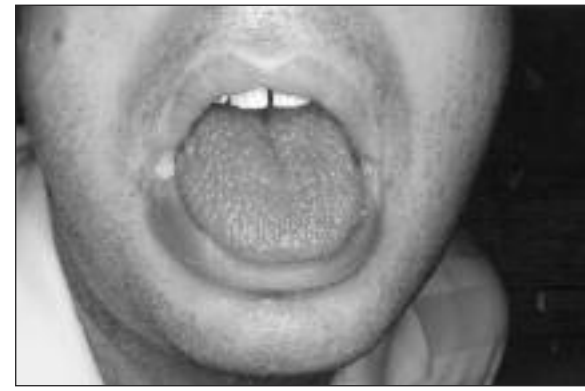

FIGURE 3: Dry, red tongue with ragads.

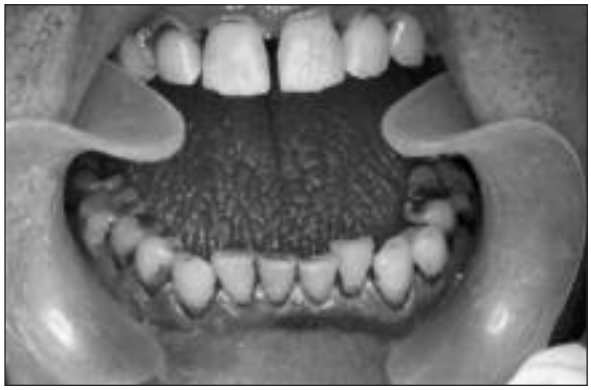

FIGURE 4: Intraoral view.

day. The written informed consent was obtained. After the nonsurgical periodontal therapy, excisional biopsy was performed. In the examination of biopsy material; macroscopically, the dimension of the biopsy piece was 1 x 0.7 x 0.2 cm and the colour was gray. In the histopathologically examination of the biopsy material, the tissue which was extremely hyperplasic, covered by squamous epithelial cells had hyperkeratosis and parakeratosis. There was a proliferation by epithelial cells with narrow cytoplasm, increased mitotic activity, and increased cromasi of the distal 1/3 epithelial (Figure 5,6). The diagnosis was "mild epithelial dysplasia".

After three months, we did not determine any recurrence at the operation site in the clinical examination. In the second control examination after seven months, an early recurrence was seen in both right and left buccal mucosa (Figure 7,8).

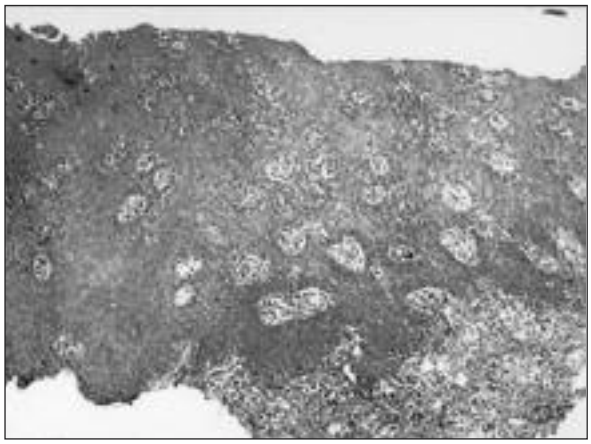

FIGURE 5: Histologic examination reveals loss of polarity in basal layer of stratified squamous epithelium and mononuclear inflammatory cell infiltration is present under the epithelium (H&E x100).

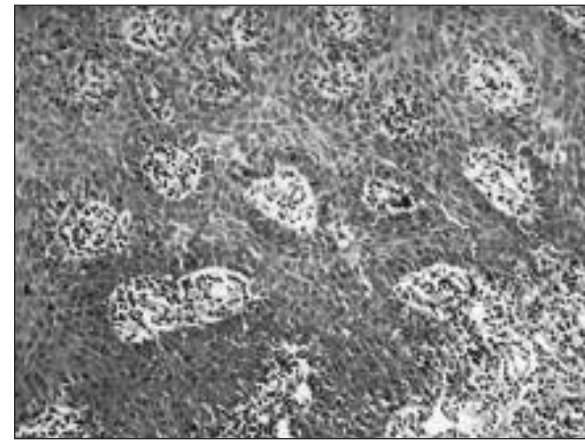

FIGURE 6: Hyperchromatic atypical epithelium cells which show increased mitotic activity and slight pleomorphism in basal layer of epithelium are present (H&E x100).

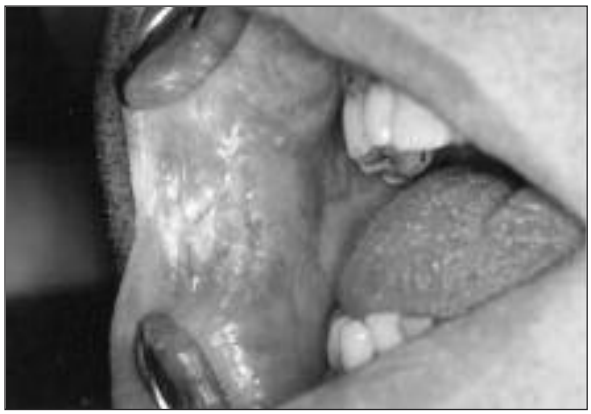

FIGURE 7: After 7 months recurrence on the right buccal mucosa

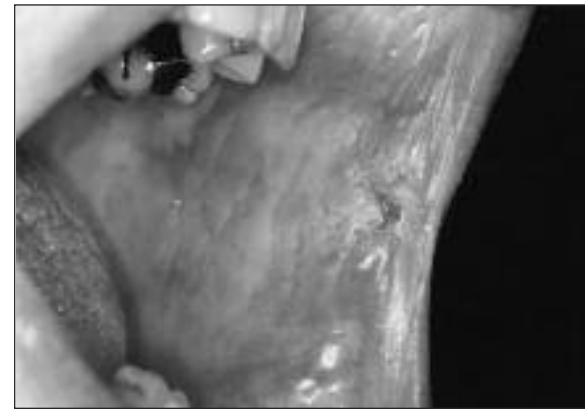

FIGURE 8: After 7 months recurrence on the left buccal mucosa.

DISCUSSION

Oral Leukoplakia is one of the tobacco-related mucosal lesions.[16,17] Leukoplakia was often associated with epithelial dysplasia. It is generally accepted that malignant transformation of oral leukoplakia is more likely to occur in smokers than in non-smokers.[18] A recent study showed the malignant transformation rate of oral leukoplakia was 7.9% (35 of 444 with oral leukoplakia.[19]

In one large, well known retrospective study that consisted of approximately 3.300 biopsies of oral white lesions, Waldron and Shafer determined that 19.9 percent of leukoplakias showed some degree of epithelial dysplasia. In this group, 3.1 percent were unsuspected squamous cell carcinoma, 4.6 percent showed severe dysplasia or carcinoma in situ, and 12.2 percent showed mild-to-moderate epithelial dysplasia.[10]

Melrose suggested that patients with mild or moderate dysplasia have a significant, but not absolute potential for reversibility and can be managed with the elimination of the suspected etiologic factors.[5]

In a recent review it has been concluded that numerous studies have examined the transformation rates of oral leukoplakias; Pindborg and others followed 248 patients for a mean observation period of 3.7 years; during this time, the period prevalence of malignant transformation in leukoplakia was 4.4%. Banocz and Csiba reported a 6% malignant transformation in 670 patients who were observed over a period ranging from 1 to 30 years. In addition, a study by Roed-Petersen and others found that the transformation rate for malignancy or epithelial dysplasia of oral leukoplakia was greater than 6%.[20]

Cowen et al suggested that over the 20-year period there were 745 patients diagnosed with primary intra-oral squamous cell carcinoma, 165 patients with dysplasia and 1182 patients with 'non-dysplastic' lesions (epithelial hyperplasia, hyperkeratosis epithelial atrophy, lichen planus and lupus erythematosus). Malignant transformation occurred in 15% of dysplasias and in 1% of 'non-dysplastic' lesions at average intervals after diagnosis of 48 and 65 months respectively.[21] It is accepted that the patients with epithelial dysplasia must be controlled periodically.

During a 13-year period, 3256 specimens clinically diagnosed as leukoplakia and it was found that leukoplakia occurs chiefly in the 5th, 6th, and 7th decades; about half of the lesions involved the mandibular mucosa, mandibular sulcus, and buccal mucosa; leukoplakia was slightly more common in men (54.2%). [22] Our case is compatible for age, sex and location of the lesion with this study.

In a study data from the oral mucosal tissue assessment of 15.811 participants in the US National Health and Nutrition Examination Survey (NHANES III) were included. According to the data of this survey tobacco smoking was found as the strongest independent risk factor and diabetes, age and socio-economic status were found as independent predictors of oral leukoplakia. As a conclusion, the authors suggested that the role of diabetes and estrogen in the pathogenesis of oral leukoplakia should be further investigated. [23] In this case, occurrence of the nephrogenic diabetes insipidus caused by using lithium for his psychiatric disease for a long time (5 years), led to dehydration and also together with heavy smoking triggerred factor for developing of leukoplakia. [24-28]

Lithium reduces renal responsiveness to ADH (antidiuretic hormone) causes to moderate polyuria and is associated with increased plasma renin concentration leading to polydipsia. But in cases with inadequate fluid replacement dehydration may occur and heavy smoking also increases dehydration in the oral mucosa as in our case.

The most frequent side-effects of lithium therapy were: tremor of bands, polydipsia, polyuria, increase in appetite, dryness of mouth, general muscular weakness and memory reduction.[13]

Additionally,there have been numerous reports of the oral side effects of long-term lithium therapy, which can have some importance to dental management. Lichenoid stomatitis has been reported as an adverse reaction to lithium carbonate and is thought to represent a response to alterati-

ons in immunoregulation induced by the lithium therapy. Nonspecific stomatitis in association with lithium therapy has also been reported.[29] Therefore, it is possible that lithium induced xerostomia may be a triggering factor beside the smoking in our case.

It suggested that dysplastic leukoplakic lesions must be completely removed by surgery. Additional treatment methods include carbon dioxide laser, photodynamic therapy, and cryotherapy.[30]

Several studies have reported that there are no effective treatment procedures to prevent malignant transformation of oral leukoplakia. The risk of cancer development could not be significantly reduce by surgical intervention.[19] The etiologic factors must removed for prevent the recurrence of oral leukoplakia.

In the light of this data we applied excionel biopsy to our patient. But we could not withdrawel of the patients' medication for his healthcare. In the control sessions, we learned that the patient was continued to smoke. Through the etiologic factors could not eliminated a little recurrence of oral leukoplakia was seen after seven month of the surgical therapy. We thought that the patients' dry tongue with ragads is also associated with dehydration due to the long-term lithium using.

In conclusion, although smoking is the major etiologic factor for developing oral leukoplakia, dehydration resulted from long-term lithium therapy may be considered as a triggering factor in the development of oral leuloplakia in patients with bipolar affective disorder. It was accepted that these patients must be followed up at least 6 month intervals.

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