Case report

Speckled leukoplakia- case report and review of literature

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ABSTRACT

Oral leukoplakia is the most common potentially malignant disorder of the oral cavity. Non homogenous forms of leukoplakia has the higher rates of malignant transformation. Although clinical diagnosis is the most commonly sought form of diagnosis, incisional biopsy with scalpel and histopathological examination is the gold standard for diagnosis, planning treatment, and for ascertaining the prognosis of the lesion. Hereby, we report a case of speckled leukoplakia which was histopathologically diagnosed as carcinoma in situ and managed with surgical excision with skin graft and concomitant chemopreventive agents.

Key words: *carcinoma-in-situ, chemoprevention, diagnosis, excision, leukoplakia, malignant transformation*

Leukoplakia is one amongst the common potentially malignant disorders affecting the oral cavity with a worldwide prevalence of 1.4%–22%. It is characterized by the presence of white plaque or patch that cannot be scraped off. Among the many variants of leukoplakia, non-homogenous form of leukoplakia known as speckled leukoplakia although is rare, however not uncommon has a higher risk of malignant transformation [1]. Surgical excision along with medical management using chemopreventive agents is the mainstay treatment of these lesions [2]. Nevertheless, early detection with chair side and histopathological investigations is of paramount importance to prevent its transformation into squamous cell carcinoma [3]. Here, we report a case of non-homogenous leukoplakia of the buccal mucosa which was successfully managed with surgery and chemopreventive agents.

CASE REPORT

A 60-year-old male patient reported to our outpatient Department with a chief complaint of whitish area in left cheek since 3 years. Though the lesion was not associated with pain, however, the patient experienced occasional burning sensation. The patient was diabetic and hypertensive and had the habit of keeping tobacco quid 3-4 times daily for 10 years, chewing gutka 5-6 times daily for 6 years and smoking beedi/ cigarette 10 times per day since 10 years. On examination, irregularly shaped erythematous patch with white specks was seen on left buccal mucosa measuring around 5cm x 3cm in diameter, extending anteriorly from commisure of the lip and extending 5cm posteriorly till second molar region. Superiorly, 3cm above vestibule to 0.5cm above vestibule inferiorly. On palpation lesion was nontender, non scrapable and did not bleed to touch (Figure 1).

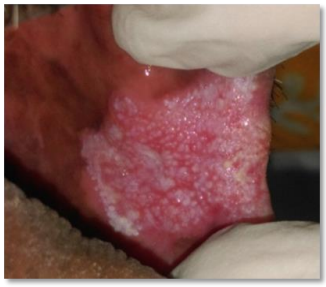

Figure 1: White patch on the left buccal mucosa

Blanching of mucosa was seen on buccal mucosa, labial mucosa and ventral aspect of tongue. Bilateral wrinkled, eroded, fissuring reddish area seen at the corner of the mouth (Figure 2). Based on the history and clinical findings, Speckled leukoplakia with left bucccal mucosa, grade I Oral submucous fibrosis and Angular cheilitis were considered as provisional diagnosis. Toluidine blue test carried out which did not show retentive areas (Figure 3).

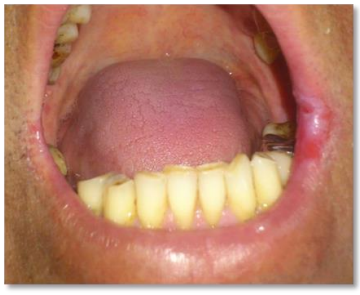

Figure 2: Angular cheilitis seen on the left side

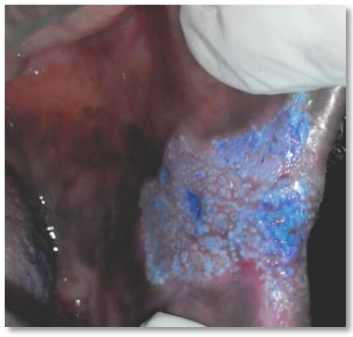

Figure 3: Toluidine blue staining showing no retentive areas

Incision biopsy specimen showed dysplastic features extending from the basal layer to entire thickness of epithelium with intact basement membrane suggestive of carcinoma in situ. Surgical stripping of the lesion followed by skin graft was carried out, he was advised to stop all associated habits and antioxidant therapy (Tab lycored, Cap SM Fibro) was advised. Patient was followed up regularly once every 15 days (Figure 4).

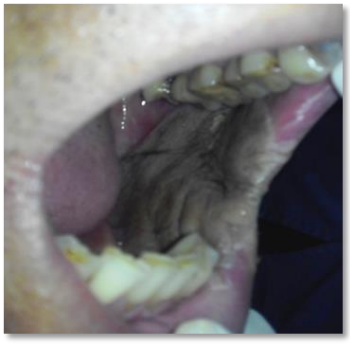

Figure 4: Postoperative view showing skin graft

DISCUSSION

According to the World Health Organization (WHO), leukoplakia is defined as a "white plaque of questionable risk having excluded (other) known diseases or disorders that carry no increased risk for cancer"[4] The estimated prevalence of leukoplakia ranges between 1.4%–22%, with no gender predilection. Smoking and tobacco has been proved to be the dominant etiological factor of leukoplakia. Furthermore, prolonged mechanical trauma, alcohol, candidiasis, human papillomavirus (16 and 18 types), vitamin deficiency and UV exposure a.so play a role in pathogenesis [3,5]. In our case, patient had habit of chewing tobacco, gutka and smoking beedi/ cigarette from past 10 years.

Macroscopicicaly, leukoplakia can be either homogeneous or non-homogeneous. Homogenous leukoplakia is characterized by a flat and uniform white plaque with well-defined margins; while, non-homogeneous form characterized by the presence of areas of erythema accompanied by areas of nodularity and verrucousity [3,5]. Speckled leukoplakia is a type of non-homogeneous leukoplakia with the clinical picture in the form of plaques, nodular, or white granular with reddish basis [1]. Clinical features of the lesion in our case was in synonymous as that of specked leukoplakia.

Although, expert clinicopathologic examination aids in the diagnosis of oral leukoplakia, however, clinical examination alone cannot distinguish between dysplastic and nondysplastic lesions. Various adjunctive and non-invasive tools have been developed both at the clinical as well as molecular level to assess the oral lesions of uncertain biologic significance, including, toluidine blue, lugol's iodine, and whitening of the oral mucosa induced by acetic acid, Oral transepithelial brush biopsy with computer-assisted analysis (OralCDx®, CDx DiagnosticsTM, Suffern, USA), Velscope® (visually enhanced lesion scope), autofluorescence spectroscopy and imaging systems amongst others [6].

In this case, we used the toluidine blue vital staining as an adjunct prior to incisional biopsy, to establish a definitive diagnosis. Toluidine blue is a basic metachromatic dye that stains the acidic cellular components. Since cancer cells contain quantitatively more DNA and RNA than normal epithelial cells, and the presence of wider intracellular canals, facilitate the greater penetration of the dye [7]. However, no retentive areas were found in our case. Needless to say, the gold standard for diagnosis of dysplasia is histopathological

examination.Histopathologically, leukoplakia shows signs of hyperkeratosis, acanthosis, atrophy, and may exhibit various degrees of epithelial dysplasia [1,3,5].

Incidence of malignant transformation is higher with non-homogenous leukoplakia or speckled leukoplakia ranges from 20%–25% [5]. Threfore, multiple periodic biopsies are advised to detect grades of dysplasia or malignant transformation. Elevated serum levels of β2 microglobulin DNA aneuploidy, Ki-67 (Mib-1) and bromodeoxyuridine, combined biomarker score of chromosomal polysomy, p53, upregulation of PD-L1 and loss of heterozygosity are few predictors of oral leukoplakia and malignancy. Additionally, type of lesion, age, gender, site also play a significant role [8]. Patients >60 years of age presence of leukoplakia at the ventral surface of the tongue, floor of the mouth and soft palate and Large lesions (≥200 mm2) are five times more likely to undergo malignant transformation. Additionally, malignant transformation rate of dysplasia or carcinoma in situ (CIS) is 5%–36%, with higher rates in individuals who consume betel leaf [9].

Multiple treatment modalities have been documented including "watch-and- see" approach, surgical, nonsurgical approaches. Nonsurgical or conservative modalities prevent the malignant transformation they include, carotenoids (β-carotene, lycopene), Vitamins A, C, and K, fenretinide, bleomycin, and photodynamic therapy. Surgical management of leukoplakia comprises of conventional surgery, electrocauterization, laser ablation, or cryosurgery [10]. In conventional surgical procedures, the entire lesion is excised and replaced with either skin graft or any other dressing material. Recurrence of oral leukoplakia after surgical treatment has been reported in 10–35% of cases [6]. Considering the molecular changes in leukoplakia and oral cancer, regular follow-ups are recommended. In our case, since leukoplakia was present on the buccal mucosa, complete excision with skin graft was performed and was closely followed up.

CONCLUSION

Although leukoplakia is a common PMDs, however due to the asymptomatic nature of the disease leads to late detection. Speckled leukoplakia with its high risk of malignant transformation especially in the presence of epithelial dysplasia must be diagnosed in its early stages to avoid poor prognosis. Early detection and treatment of lesions are important to prevent the possibility of lesion transformation into a malignant lesion. In view of the high malignant potential of these lesions, a thorough oral cancer and precancer screening must be a part of every oral soft tissue examination and if found must be subject to chairside and histopathologic examination.

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