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REVEALING DEMONIC INSTINCT OF ORAL LICHENOID LESION: A CASE REPORT

Oral Pathology

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ABSTRACT

Oral lichenoid lesions (OLL) are similar to oral lichen planus (OLP) that do not gather entire typical clinico- histopathological requirement of OLP. OLLs are triggered by specific etiological agents, such as dental materials, drugs and flavouring agents. Restorative dental materials play a fundamental role in the appearance of OLL in the oral mucosa. Among them amalgam restoration in one of frequently used restorative material usually associated with OLL. Some investigators have suggested that OLP and OLL may be associated with an increased risk of malignant transformation with 0.5% and 2.1% of malignant transformation rates respectively. This most important complication of possible malignant transformation from the lesions grouped as OLL, which can be prevented by early diagnosis and treatment of lesion. Therefore the aim of this poster is to report a rare case of squamous cell carcinoma arising from oral lichenoid lesion associated with dental restorative material.

KEYWORDS

Oral Lichenoid Lesion, Oral Lichen Planus, Amalgam restoration, Malignant transformation, Chronic inflammation

INTRODUCTION

Oral lichenoid lesions (OLL) a series of chronic inflammatory processes with autoimmune base that affect the oral epithelium.[1] OLLs are clinical and histological contemporaries of Oral lichen planus (OLP) but former is associated with some inciting factors. These lesions do not gather the entire typical clinico-histopathological requirements of OLP.[1] First microscopic description of these reactions published by Pinkus (1973).[2]

These OLL can be reactive when there is a known cause (i.e. related to an amalgam restoration), or idiopathic.[3] The most important complication of the lesions grouped as OLL, is its possible malignant transformation [4,10-12] which can be prevented by early diagnosis and treatment of lesion. The aim of this paper is to report a rare case of squamous cell carcinoma arising from oral lichenoid lesion associated with dental restorative material.

Case Report :

A 38 year male patient, reported to the Department Of Oral Pathology And Microbiology of institute with chief complaint of burning sensation on left lateral border of tongue since 6 months. He had dental history of amalgam restoration with 47 and metallic cap with 46 in Government Dental Hospital 2 years ago.

On examination greyish white keratotic patch was seen at the posterior left lateral border and ventral surface of tongue. Lesion was in close contact with 46, 47 which were restored with amalgam and metallic cap respectively. The size of the lesion around 3×2cm, roughly ovoid with ill-defined borders and surface was irregular. Formulated provisional diagnosis was given as oral lichenoid lesion as it was associated with dental restorative material.

Patient was advised to remove prosthesis (metallic cap) and amalgam restoration and prescribed with topical corticosteroids, mouth rinse and antioxidant along with multivitamin tablets. After 11 months with regular monthly follow up patient presented with ulceration of lesion. Lesion was reddish white everted edges and whitish slough on the surface. Left submandibular lymph nodes were palpable.

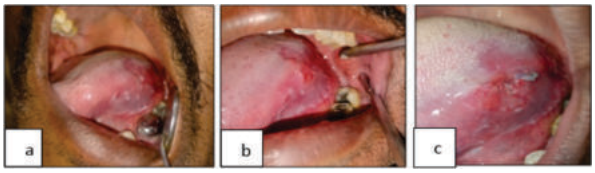

Figure 1 :a) Greyish white patch on posterior left lateral border and ventrum aspect of tongue vicinity to amalgam restoration and metallic cap ; b) follow up after 9 and c)11 month respectively

Therefore patient advised for biopsy and incisional biopsy was carried out. Histopathological examination shows parakeratinised stratified squamous epithelium with features of dysplasia such as loss of polarity of basal cells, increase N:C ratio, anisonucleosis, anisocytosis, cellular & nuclear pleomorphism, nuclear hyperchromatism, loss of cohesion, increase mitotic figure and Hydropic degeneration of basal cell layer. Basement membrane was disrupted and shows infiltration of islands of dysplastic epithelial cells dispersed in to the underlying connective tissue & underlying muscle tissue, forming epithelial & keratin pearls at places. Diffuse band of chronic inflammatory cell infiltrate was seen beneath the epithelium. Hence the diagnosis of well differentiated squamous cell carcinoma was confirmed.

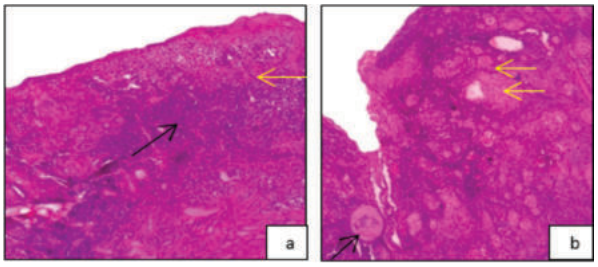

Figure 4: a) Histopathology of lichenoid reaction showing degeneration of the basal epithelial layer (yellow arrow) and an intense lymphocytic infiltrate subjacent to the epithelium (black arrow); b) Histopathology of OSCC showing dysplastic epithelial islands with hyperchromatic nuclei (yellow arrow) and keratin pearls(black arrow) into the stroma

DISCUSSION :

The oral mucosa or skin may exhibit similar clinical and microscopic alterations as the OLP, the so-called Oral Lichenoid Lesion (OLLs). OLLs are triggered by specific etiological agents, such as dental materials,[2-5] drugs and flavouring agents Restorative dental materials play a fundamental role in the appearance of OLL in the oral mucosa.[6-7] Among them amalgam restoration in one of frequently used restorative material usually associated with OLL.

Laine et al. conducted immunological studies and observed true allergy to mercury. The reaction to resin materials was reported by Blomgren et al.[3] who successfully treated reticular erythematous lesions and white papules on the lip of seven patients by replacing the restorative material.

Characteristically OLL is unilateral but most of clinical and histological features overlap with OLP. *Van der Meji* et al. and later WHO also endorsed the diagnostic criteria for OLP and OLL.[6]

Some investigators have suggested that OLP and OLL may be associated with an increased risk of malignant transformation with 0.5% and 2.1% of malignant transformation rates respectively. However, the true risk remains controversial.[1,7,8], two recent systematic reviews showed that OLP had a malignant transformation rate of 1.09% and 0.9%, whereas the rates for OLLs were 3.2% and 2.5%, respectively.[16] *Kamath V* et al (2015) calculate the malignant transformation of the OLL group as 0.71% per year, based on a mean follow-up of 53.8 months [2] and according to *Holland group* it is 2.1%.[2,9,10] So according to results of other studies it is obvious that OLL has higher malignant transformation rate than OLP.

Following factors are thought to be responsible for malignant transformation of OLL:
1. Tissue or cellular alteration caused by amalgam antigen or any other restorative material antigen fixation in keratinocytes which are recognised and destructed by immune cells.[12,13]

2. OLL is associated with chronic inflammation and it would play an important role in the possible carcinogenesis of this process, causing genetic damage and inducing tissue proliferation. The increase of cytokines and growth factors, promote and/or facilitate oral carcinogenesis.[14] Chronic inflammation produces oxidative damage of the DNA by products derived from inflammatory induced enzymes, such as nitric oxide synthase (iNOS)[14] and cicloxigenase-2 (COX-2) that acts inhibiting apoptosis of the keratinocytes and in so doing, facilitating carcinogenesis.[15]

3. In recent years, the process of malignant transformation of the lichenoid lesions has been related to a possible "field cancerization" phenomena, by which all associated events would predispose these patients to a greater risk of multiple and/or multifocal neoplastic malignancies in the oral cavity.[16]

Malignant transformation of OLLs, the study of van der Meij *et al*., stands out as a benchmark being the only controlled study of its kind. Interestingly, in their study the authors have reported a malignant transformation rate of 2.1% for OLLs as compared with 0.5% for OLP.[6]

These studies would confirm the existence of a greater risk of malignant transformation of "atypical lesions" diagnosed as OLL, which would support the need to always make a careful clinical and histopathological diagnostic separation.

CONCLUSION

It can be more strongly stated that OLL's are of a premalignant nature.[6] Since OLL is considered to be premalignant, a recall system for OLL patients might be useful to facilitate the early diagnosis of oral cancer with the aim of reducing morbidity and mortality from oral cancer arising in OLL patients. With regard to the frequency of follow-up hardly any data exist. Advices of frequency by other authors vary from one to four times annually.

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