

## **Case Report**

### **Oral Lichenoid Lesion and Amalgam Restoration**

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**Abstract:** Lichen planus (LP) is a chronic autoimmune disease of the skin and or mucous membranes and when the etiology is known and it involves the oral mucosa it is called oral lichen lesion. Most common site is the buccal mucosa, dorsum of the tongue, gingiva and the mucosa in direct contact with the amalgam filling. The exact cause is unknown but is considered to be an autoimmune reaction. Amalgam restorations are known to cause contact hypersensitivity and oral lichen lesions. Marked improvements have been seen in patients where amalgam restoration was replaced with other restorative material.

**Keywords:** Lichen Planus, Oral Lichen Lesions, Amalgam Restoration

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#### **INTRODUCTION**

Lichen planus (LP) is a chronic autoimmune disease of the skin and or mucous membranes with an unknown initial trigger and etiology. Where etiology is known, the term lichenoid lesion or reaction is used. Oral lichen planus is a form of mucosal lichen planus, where lichen planus involves the oral mucosa. Prevalence of OLP in the general population ranges between 0.5% in a selected Japanese population[1], 1.9% in the Swedish population[2] and 2.6% in the Indian Population[3].

Oral habits of Indian population vary from betel nut and tobacco chewing, smoking to spicy and oily food. Caries incidence among Indian population is around 31.5% to 89% [4]. Thus the oral mucosa of an individual is often subjected to different variety of noxious stimuli. Silver amalgam has been used as a dental restorative material for more than 150 years[5]. Even with the advent of new synthetic non-metallic materials, it is still the most widely used and cost-effective dental material. Its superior compressive strength and minimal technique sensitivity makes it an ideal material for posterior restorations and core build ups[6]. However some of the disadvantages of amalgam restoration include aesthetics, lack of adhesiveness resulting in removal of sound tooth structure for cavity preparation and mechanical retention, toxicity of mercury for the patient as well as for the environment. It's a metallic mass, formed by mixing liquid mercury and powder containing silver, copper, tin and zinc.

Most of the toxic injuries are associated with the mercury content, and dental literature has shown that amalgam restorations can be related to oral lichenoid lesions (OLL)[7]. Amalgam fillings are in direct contact with oral mucosa and may directly alter the antigenicity of basal keratinocytes by the release of mercury and other metal salts as corrosion products[8].

The most common site of occurrence is buccal mucosa, dorsum of the tongue, gingiva and mucosa in direct contact with amalgam filling. Clinically it can present as white striations (Wickham's Striae) white papules, plaque, erythema, erosion or blisters. OLP may present as symmetrical, bilateral or multiple erosion. It can occur in six different types of clinical variants like reticular, erosive/ ulcerative, papular, plaque like, atrophic and bullous type. Generally, OLP tends not to cause any discomfort or pain, although some people may experience soreness when eating or drinking acidic or spicy foodstuffs or beverages. Symptoms like burning sensation to severe pain if present are mostly associated with atrophic and ulcerative subtypes.

#### **CASE REPORT**

31 yr old serving soldier reported to this dental centre on 10/07/13 with chief complaint of recurrent and continuous white striation, patches and burning sensation on left buccal mucosa [Fig. 1]. He was suffering from this problem since last 3 to 4 yrs for which he had undergone treatment at various military

hospitals, dental centre and private hospitals while on leave.

**Past Medical / Dental History:**

Patient first reported to MI Room on 21/08/10 with same chief complain. He was advised medication for oral ulceration and referred to dental centre. On 22/10/10 patient was diagnosed with Lichen Planus (Erosive Type).

**4/11/10:** Biopsy specimen measuring 1x 0.5x 0.5 cm was taken and sent for histo-pathological examination.

**Opinion:** Inflammatory Dysplasia

Next 6 months individual continued with multivitamin, B-Complex tablets and locally applied oral gel.

**April 2011**

Patient got transferred to this station and reported to MI Room with same chief complain. He underwent complete blood investigation, urine examination, blood sugar along with Rapid ELISA HIV test.

Test reports were normal and individual was put on tablet antioxidants, alprax and B- complex for 15 days.

**June 2011**

Patient was treated with Injection Dexamethasone 40 mg diluted in distilled water every week for 3 months at the dental centre of nearest MH.

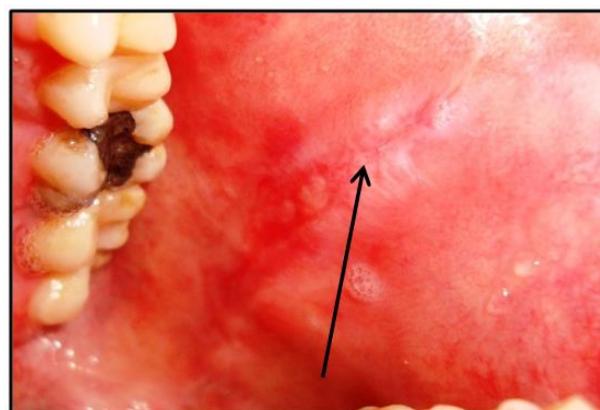
Under own arrangement patient visited reputed private hospital, dental centre were also he was diagnosed with Lichen Planus (Ulcerated variety) and put under same medication.

**19/07/13**

Patient reported to our dental centre and intra oral examination revealed that lesion was unilateral affecting left buccal mucosa along the occlusal plane [Fig. 1]. Amalgam restoration of 26 and 36 tooth was done about 3 to 4 yrs back [Fig. 2].

It was decided to replace amalgam restoration by composite or GIC. [Fig. 3]. Composite resin restoration was performed following standard clinical procedures and manufacturer's indication. After amalgam removal, a self – etching adhesive system and resin based composite restoration was done.

Patient reported back after a week and stated that burning sensation and white lesion had also reduced significantly [Fig 4].



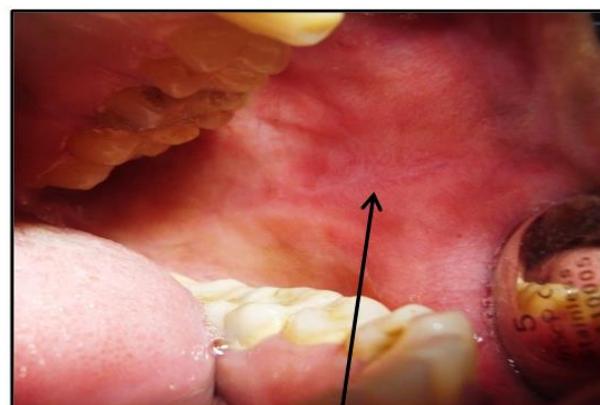
**Fig-1:**Intra Oral photograph showing White Striated patch in buccal mucosa



**Fig -2:** Intra Oral photograph showing Amalgam restoration in r/t 26 and 36



**Fig-3:** Intra Oral photograph showing GIC / Composite restoration in r/t 26 and 36



**Fig-4:** Intra Oral photograph (after 1 week) showing White patches considerably reduced

## DISCUSSION

Oral lichenoid lesions are common oral finding owing to various stimuli that affects the oral mucosa. Number of studies have confirmed the frequent association between oral lichenoid reaction and contact hypersensitivity to dental metals especially amalgam restoration[9].

As evident from the case reported; amalgam fillings may induce adverse immunological effects and may induce lichenoid reactions in susceptible individuals. OLR in the above mentioned case could have been due to amalgam restoration was overlooked by all concerned dental and medical centres. Diagnosis of OLR relies on important aspects, such as clinical appearance of the lesions, lack of migration, and association with adjacent amalgam restorations. Although there is no specific test for diagnosing OLRs, skin-patch testing can be used to identify the allergen responsible for the hypersensitivity. Patch testing is done by using commercially available kits which are placed on the skin of the back or fore arm in wells and held in place for 48 hours with hypoallergenic adhesive tape. Test results are generally read at 48 and 72 hours. Healing or significant reduction in mucosal changes has been described in a large number of patients with a verified allergy to mercury once the amalgam fillings have been removed[10].

Although some authors are in favour of replacing silver amalgam with an alternative material in all patients, others only favour this option in those cases in which hypersensitivity has been established. Generally speaking, when dealing with a diagnosis of this kind, amalgams should be replaced in those cases in which mucosal lesion is in direct contact and patch testing is positive. Above case supports this view as improvement was seen in the above mentioned case and the lesion had almost disappeared once silver amalgam was replaced.

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