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LICHENOID REACTION ASSOCIATED TO AMALGAM RESTORATION: A CASE REPORT

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LICHENOID REACTION ASSOCIATED TO AMALGAM RESTORATION: A CASE REPORT**Pradeep K*, Gary Ignatius, Vidaydhar Shetty and Harish K. Shetty****Department of Conservative Dentistry & Endodontics, Yenepoya Dental College, Yenepoya University, Deralakatte, Mangalore, Karnataka, India*****Corresponding Author: Email: endopradeep@gmail.com.****ABSTRACT**

Lichenoid amalgam restoration also known as amalgam associated oral lichenoid reaction, is an uncommon allergic reaction following long-term exposure to dental amalgam restorations. This is a case of oral lichenoid reaction associated to amalgam restorations in a 34 year-old male patient. He presented with a whitish discoloration on his left lower buccal mucosa seven months after a non-contributory medical and dental history. On examination, the presence of class I (buccal pit) silver amalgam restorations in relation to left Mandibular first and second molars was observed. Management included removing the amalgam restoration and using composite resin as a substitute. After 40 days, complete healing was observed. This case was reported from Yenepoya dental college, Mangalore, India.

Key words: Oral lichenoid reaction, Amalgam restorations, composite resins.

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INTRODUCTION

Silver amalgam has been used as a dental restorative material for more than 150 years. Even today, with the advent of new synthetic non-metallic materials and novel time-saving procedures, silver amalgam is the most widely used and cost-effective dental material in restorative dentistry. Its superior compressive

strength and minimal technique sensitivity makes it an ideal material for posterior restorations and core build ups [1]. In addition to corrosion and metallic colour, amalgam has got a major disadvantage [1]. Amalgam fillings are in direct contact with the oral mucosa and may directly alter the antigenicity of basal keratinocytes by the release of mercury and other metal salts as corrosion products [2,3,4].

In susceptible individuals, therefore, amalgam fillings may induce amalgam-contact hypersensitivity lesions (ACHL) with features similar to oral lichen planus (OLC). Such lesions are likely to occur on mucosal surfaces in intimate contact with amalgam fillings and could be expected to improve following removal of the fillings [5]. Pinkus [6] in 1973 coined the term Lichenoid lesion. Koch et al 1999 [7] proposed "Dental restoration metal intolerance syndrome". Skoglund [4] showed that removal of amalgam usually affects the lesions favorably and that epicutaneous patch tests are of little prognostic value in patients with oral mucosal lesions of lichenoid character [7,8]. Bratel et al [9] proposed that vast majority of contact lesions (CL) can be resolved by selective replacement of restorations of dental amalgam, provided that correct clinical diagnosis had been established [9].

The ethical clearance for the publication of the case report was obtained from the Yenepoya University Ethics Committee.

CASE REPORT

A 35 year-old male patient reported to the Department of Conservative Dentistry and Endodontics, Yenepoya Dental College and Hospital, Mangalore with a chief complaint of whitish discoloration on his left buccal mucosa since seven months with a non-contributory medical and dental history. On detailed hard tissue examination, the presence of class I (buccal pit) silver amalgam restorations in relation to left Mandibular first and second molars was observed. On further detailed soft tissue examination of the entire oral cavity, an unilateral Whitish discoloration of the buccal mucosa was also observed in relation to the left mandibular teeth, extending from mandibular second molar to first premolar [Figure 1].

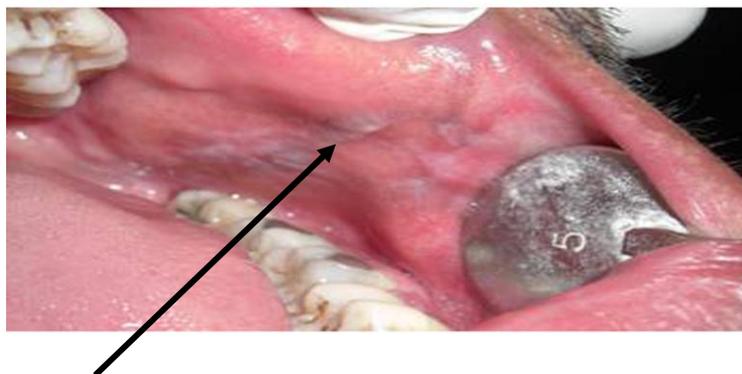


Figure 1: Buccal pits of left lower mandibular first and second molar teeth and white keratotic patch seen on the buccal mucosa

The Patient gave a dental history of undergoing silver amalgam restorations of his decayed teeth in relation left mandibular first and second molars a year back with no presence of any other decayed or restored teeth in the oral cavity.

The whitish discoloration was diagnosed as a reaction of the oral mucosa to silver amalgam restorations – Lichenoid reaction.

The management was for the replacement of silver amalgam restorations with composite resin. Amalgam restorations were removed using a high speed rotary handpiece with a round bur following the occupational and safety health administration (OSHA) regulations. After removal of the entire amalgam restorations, Glass ionomer cement (Fuji II) was placed as base on the pulpal floor and was temporarily

restored with Zinc Oxide eugenol cement. The whole procedure was done in a dental clinic as outpatient procedure. On the following day the temporary restoration was removed leaving behind the Glass ionomer cement. The tooth was etched using 37.0% phosphoric acid for 15 sec followed by application of dentin bonding agent and curing. Composite restoration was done by incremental layer technique and curing for 30sec. Finishing and polishing (silicon carbide stone & alpine stone, sofelex disc) of the restoration was done after a week. The patient was recalled once in every 10 days for a period of one month. After a time period of 30 to 40 days there was a total disappearance of the lichenoid reaction and the patient was followed up for a period of six months with no recurrence seen [Figure 2].



Figure 2: After 40 days – Total disappearance of the Lichenoid reaction

DISCUSSION

Oral mucosal lesions related to dental restorative materials may be caused by delayed cell-mediated hypersensitivity reactions [10]. In the present case histopathological examination was not done, because it is an invasive procedure; the intention was to use a more conservative approach for the management of the patient.

The most common contact lesions of the oral mucosa due to metal hypersensitivity are caused by nickel or chromium in orthodontic appliances or frame-work for partial dentures [11]. A review of cases reported as Mercurial hypersensitivity from mercury exposure in dentistry has been given by Bauer and First [12]. Accumulations of mercury have been found in lysosomes of macrophages and fibroblasts of submucous connective tissue of contact lesions, and also in normal mucosa [1]. There seems to be a great discrepancy in the manifestation of the incidence of hypersensitivity reactions inherent with the use of amalgam restorations as treatment of choice for the restoration of carious teeth [10].

Wong and Freeman[13] in their study confirms the mercury allergy is a factor in the pathogenesis of oral lichenoid reaction and healing of oral lichenoid reaction after replacement of amalgam restorations with Glass ionomer or composite resin.

It has been proposed that hypersensitivity to mercury from corroding amalgam fillings plays an important part in the etiology of oral lichen planus [14]. Some studies have demonstrated hypersensitivity to mercury among 16.0-62.0% of patients with oral lichen planus, whereas mercury hypersensitivity has been found in 1.0-4.0% in the general population of Sweden [14]. Only in 10.0% of the patients the mucosal affections disappeared after replacement of type II glass ionomer cements or composite resins [14]. Further, the presence of lichen planus on the oral mucosa may well render the patients more susceptible to mercury hypersensitivity because of the increased penetration of the affected oral mucosa by mercury [14].

A recent study demonstrated a different response of lichenoid mucosal lesions to replacement of amalgam fillings depending on the extensions of the lesions: those lesions, denoted contact lesions, which were confined to the area of contact with amalgam showed a total or almost disappearance without recurrence after replacement, whereas lesions exceeding the contact zone showed minor changes only [15]. In Conditions like lichenoid reactions secondary to silver amalgam restorations, using composite restoration having added advantages like good aesthetic and wear resistance properties compare to other restorative materials.

CONCLUSION

Silver amalgam has been used as a dental restorative material for more than 150 years. Even today, with the advent of new synthetic tooth coloured materials, silver amalgam is the most widely used and cost-effective dental material in restorative dentistry. Local allergic reactions are rare, and when they occur, they can be eliminated by substitution with glass ionomer or composite resin. In the present case, the tissue becomes normal within 40 days after the buccal amalgam restorations were removed. The present article gives information about allergic reactions related to silver amalgam restorations and its managements.

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