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RESEARCH ARTICLE

ORAL LICHENOID REACTION ASSOCIATED WITH PLACEMENT OF AMALGAM IN ORAL CAVITY

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ABSTRACT

Oral lichenoid reaction, affecting oral mucosa in direct contact with an amalgam restoration, represent a delayed, Type IV, cell mediated immune response to mercury or one of the other constituents of the dental amalgam. The following case report presents a patient who showed such reaction in mucosa adjacent to placement of amalgam. The mucosal lesions underwent a healing process after amalgam was replaced by composite restoration in the teeth that had contact with the lesions.

Key words:

Lichenoid reaction,
Amalgam,
Composite.

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INTRODUCTION

Intraoral adverse reactions to dental materials are relatively uncommon but if they occur oral lichenoid reactions are generally considered to be the most common (Henriksson, 1995). Hypersensitivity reactions to amalgam restorations have been reported to occur. Most commonly, it presents as an oral lichenoid reaction, affecting oral mucosa in direct contact with an amalgam restoration, representing a delayed, Type IV, cell mediated immune response to mercury or one of the other constituents of the dental amalgam (McGivern, 2000). Replacement restorations by replacing amalgam with Glass Ionomer or composite resin restorations offers a viable restorative option for amalgam associated lichenoid reactions. It offers a simple, esthetic and conservative approach for treatment of such lesions (Samuel, 2012). The lichenoid reaction may represent the oral manifestation of a chronic irritation or "contact lesion" in some patients and the clinical

result of a delayed hypersensitivity reaction in others. Regardless of whether the lichenoid reaction is a toxic or delayed hypersensitivity reaction, a long time of exposure seems to be required before the lichenoid lesion manifests itself on the oral mucosa. The role of amalgam seems to be that some component on or released from the material is capable of triggering or initiating the lesion in some patients who, from a variety of causes, may be more sensitive or susceptible to develop such a reaction. Removal of amalgam may therefore be a successful therapy form of lichenoid reactions by removing an initiating or aggravating factor (Henriksson, 1995).

Case Report

A 35 years old female patient reported to OPD of Genesis institute of dental sciences and research for general oral check up. Intra-oral examination revealed atrophic lesion, lightly erythematous, surrounded by dark pigmented area, affecting the left buccal mucosa. On palpation the lesion was slightly elevated and mildly tender. The lesion contacted directly with

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the amalgam restorations in the lower molar region with tooth number 36 (Figure 1).



Figure 1. A direct view of lesion on buccal mucosa contacting lower left molar (36)

Her medical history was unremarkable. Patient had not detected the lesion. However on asking specifically, patient revealed occasional burning sensation in that area on eating spicy meals. She was having no medications and had no known allergies. Exploration of the injured zone showed its projection on the amalgam restoration, making direct contact during movements. Thus a clear, cause and effect relation could be seen, and treatment planned for removal of amalgam restorations and replacement with composite resin restoration. Once the nature of the injury was explained to the patient, the patient decided to change the restoration. The old amalgam restorations were replaced with composite resin restorations (Figure 2).



Figure 2. Amalgam restoration replaced by composite

DISCUSSION

Although amalgam is the most used direct restorative material in dentistry (Bharti, 2010), some amalgam compounds can promote adverse reactions in the oral cavity, such as Oral Lichenoid Reaction. These alterations seem to be caused by a contact allergy or Type IV hypersensitivity, which is an excessive manifestation of the immune response to an antigen

leading to tissue damage (Cobos-Fuentes, 2009). Such reactions involve T lymphocytes that mediate hypersensitivity in response to a constituent of the amalgam restoration, commonly related to mercury as the allergen other components are rarely involved, such as copper, tin, or zinc (Bharti, 2010 and Cobos-Fuentes, 2009). The Type IV hypersensitivity reaction, also referred to as the delayed or cell-mediated reaction, seen in contact allergy, is most probably involved in mucosal reactions related to silver amalgam. Type IV reactions are characterized by a cellular response primarily involving macrophages and T-lymphocytes sensitized to antigen. Thus, the reaction is characterized by accumulation of lymphocytes and macrophages in the tissue. Such reactions are manifest in the skin in cases of contact dermatitis and when similar lesions are present in the oral mucosa the term contact lesions has been used (Holmstrup, 2000). The diagnosis of Oral lichenoid reaction relies on important aspects, such as the clinical appearance of the lesions, the lack of migration, and the association with adjacent amalgam restorations. The skin-patch testing is useful for identifying the allergen responsible for the hypersensitivity, but it needs to be performed by a specialist in dermatology or immunology (Cobos-Fuentes, 2009). Rarely, when the final diagnosis is very difficult, the clinical evaluation by a multidisciplinary team may be necessary, including a specialist in immunology or dermatology, who will perform an epicutaneous test, a useful technique to confirm the Type IV hypersensitivity (Adachi, 2000). Nevertheless, it is uncommon to have patients seeking for a dermatologist's appointment to diagnose and treat OLL, and the diagnosis often is established at the dental office, particularly in the cases of Oral lichenoid reaction by direct contact (Cobos-Fuentes, 2009). Treatment of oral lichenoid reaction consists of removal/replacement/coverage of restorations that are in direct physical contact with mucosal lesions and that are thought to be playing a causative role (Al-Hashimi, 2007). The lesions of Oral lichenoid reaction are similar to those of Lichen Planus. However, they can be distinguished from the lesions of Lichen Planus by their close relationship with amalgam restorations, and their tendency to be localized and asymmetrically distributed. In contrast, the lesions of classical Lichen Planus tend to be more widespread, bilateral and symmetrical in distribution. As with Lichen Planus, Oral lichenoid reactions may have reticular, plaque-like, atrophic and erosive components. Diagnosis of Oral lichenoid reaction associated to amalgam restoration can be made by establishing cause and effect relationship and if needed pathologic confirmation. In this case, a clear cause and effect relation could be seen (Samuel, 2012).

Conclusion

The mucosal lesions underwent a healing process after amalgam was replaced by composite restoration in the teeth that had contact with the lesions. Besides, the pain symptoms of the patient disappeared immediately after the replacement of that restoration. Although OLL-related conditions present low prevalence in the oral mucosa, they can cause significant discomfort for the patient. Therefore, dentists should be aware of their occurrence, diagnosis and treatment.

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