

Inflammatory Papillary Hyperplasia of Gingiva as a Manifestation of Allergic Contact Stomatitis Caused by Amalgam Core Preparation

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Abstract

Allergic contact stomatitis is a rare disorder of oral mucosa. It is less common in oral cavity when compared to skin. The diagnosis of allergic contact stomatitis is a clinical challenge. This condition may exhibit several clinical appearances that can mimic other oral mucosal lesions. Thus the differential diagnosis from specific oral mucosal diseases is important in management.

This report presents the first case of papillary hyperplasia of gingiva that is a manifestation of allergic contact stomatitis caused by mercury which was released from old amalgam restoration during preparation for core built up for dental crown.

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Case Report

A 36-year-old male Caucasian patient was referred for diagnosis and treatment of a one-month symptomatic and inflammation of gingiva. He had fixed dental prosthesis done on upper left posterior teeth two months ago. One month after treatment, he developed oral lesion. The lesion was associated with easily bleeding and pain. He did not have cutaneous, ocular, nasal or genital lesions. He had no history of smoking, alcohol, or any form of allergic reactions. Clinical examination revealed inflammatory papillary hyperplasia of gingiva along gingival margin adjacent to fixed dental prosthesis on the upper left first molar (Figure 1).

The author's clinical impression was that he was suffering from allergic contact stomatitis perhaps associated with fixed dental prosthesis. The lesion was treated by fluocinolone acetonide 0.1% in orabase, three times daily. After one week of the treatment, the lesion was relieved (Figure 2).

Patch testing with allergens in dental screening series (dental alloys and dental

amalgam) showed a moderately positive reaction to mercury. Subsequently, we reviewed the composition of fixed dental prosthesis in this patient.



Figure 1. Clinical examination revealed inflammatory papillary hyperplasia of gingiva along gingival margin adjacent to fixed dental prosthesis on the upper left first molar.

The fixed dental prosthesis of the upper left first molar was amalgam core build up with semi-precious porcelain fused to metal crown, but the fixed dental prosthesis of the upper left second molar was composite core build up with semi-precious metal crown. However, the same composition of the dental crown of the molars were found (48% Gold, 40% Palladium, 4.3% Zinc, 3.9% Tin, 3.75% Indium and 0.05%

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Ruthenium). Surprisingly, the patient also had amalgam restorations on other teeth, but there was no any reaction. After consultation with his prosthodontist, it was possible that mercury in amalgam was released when old amalgam restoration of the upper left first molar was prepared for core built up and caused reaction.



Figure 2. After one week of the treatment, the lesion was relieved.



Figure 3. One week follow-up was showing the remission of oral lesions after removal of the metallic material.

Nevertheless, prosthodontist decided to replace the old prosthesis with new palladium dental crown for molars which composed of 79% Palladium, 8.4% Tin, 5% Cobalt, 5% Gallium, 2% Gold, and 0.6% Ruthenium. The dental crowns were fixed with a self-curing dental adhesive resin cement. One week follow-up was showing the remission of oral lesions after removal of the metallic material (Figure 3). Afterward, patient symptoms disappeared without recurrence of lesion during two years follow up.

Discussion

Allergic contact stomatitis is a rare disorder of oral mucosa. It is less common in oral cavity when compared to skin¹. The diagnosis of allergic contact stomatitis is a clinical challenge². This condition may exhibit several clinical appearances that can mimic other oral mucosal lesions including oral lichenoid lesion, cheilitis, stomatitis, gingivitis, perioral dermatitis, orofacial granulomatosis and burning sensation of oral cavity³. Thus the differential diagnosis from specific oral mucosal diseases is important in management⁴.

To our knowledge, this report presents the first case of inflammatory papillary hyperplasia of gingiva that is a manifestation of allergic contact stomatitis caused by mercury which was released from old amalgam restoration during preparation for core built up for dental crown. A high level of mercury, acute exposure and direct contact of mercury from amalgam preparation might induce the allergic reaction. Sandborgh-Englund *et al.* reported that a transient increase of mercury concentrations in blood and plasma was observed within 48 hours after amalgam removal, so the process of removing amalgam fillings can have a considerable impact on mercury levels in biological fluids⁵. However, the patient had amalgam restorations on other teeth, but there was no any reaction. The result may occur from different types and percentages of mercury in the restoration, low level of mercury released from amalgam and position of the restoration which they did not directly contact gingiva or oral mucosa.

When patients have persistent oral symptoms, it is important to consider allergic hypersensitivity to dental restorations⁶. Precise history taking and patch testing is necessary to prove contact hypersensitivity⁴.

Conclusions

The diagnosis of allergic contact stomatitis in this report was supported by the positive patch test and no recurrence of lesion. Moreover, in this case, as easily bleeding from gingiva and pain were the main symptom, topical corticosteroid therapy was used to accelerate a resolution of the lesion and pain.

Declaration of Interest

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