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Delayed hypersensitivity or geographic tongue: A diagnostic dilemma

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ABSTRACT

Delayed hypersensitivity can occur following the use of a wide range of materials used in dentistry. These adverse reactions can be either localized or diffuse, and can mimic oral lesions of other aetiology. Delayed hypersensitivity to dental amalgam commonly presents as lichenoid oral lesions. We report the case of a patient who presented to us with burning and itching sensations on the tongue three days after restoration of his lower permanent molars with silver amalgam. Within a day, the initially well circumscribed lesions of the tongue became diffuse. Atrophy of the lingual papillae gave an appearance of a geographic tongue. Following replacement of the amalgam restoration, symptoms rapidly subsided and there was a significant improvement of the lesion.

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1. Introduction

In today's dental practice, a wide range of dental materials are used by practitioners that contain potential allergens. Among the various materials, silver amalgam has been found to have the most adverse effects (84%) followed by metals in crowns and bridges (11%) resins, cements, denture and endodontic materials (2–4%).[1]

This report describes a patient who presented with bilateral atrophy of the lingual papillae mimicking geographic tongue, along with burning sensation and pruritus following restoration of his carious teeth with silver amalgam.

2. Case history

A 17 year old male presented to the dental clinic with itching and a burning sensation of his tongue which had begun two to three days after undergoing silver amalgam restorations. There was no history of other allergies in the past and no other significant medical history. On examination, the permanent lower left and right second molars were noted to have been restored with silver amalgam. A single, ovoid, well circumscribed erythematous patch was observed on the lateral aspect of the tongue on both sides, close to the restored teeth (Fig. 1). The periphery of the lesion was elevated and white in colour. The rest of the buccal mucosa and oral cavity were noted to be normal. The silver amalgam fillings were replaced with glass-ionomer cement.

On the next day, a second ovoid patch, just anterior to the previous lesion was noted on the right side of the tongue. On the subsequent visits the patches had merged to produce an extensive lesion involving the lateral aspect of both sides of tongue (Fig. 2). The depapillation of the tongue gave an appearance of a geographical tongue (Fig. 3).

A diagnosis of delayed hypersensitivity to silver amalgam was considered with a differential diagnosis of geographic tongue. The dermatologist was consulted and contact

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Fig. 1 – Well circumscribed erythematous lesion on the right and left lateral aspect of tongue.

dermatitis to common allergens was ruled out using the standard patch test series (Chemo technique Diagnostics). Topical steroid medication, triamcinolone acetonide in orabase, was administered. Although the pruritus resolved immediately after the replacement of the amalgam restoration, the patient continued to report a burning sensation for the next seven days. By the tenth day, significant improvement of the lesion was noted and the patient was then advised permanent restorations.

3. Discussion

Adverse reactions to amalgam fillings in susceptible patients can be of different types including type IV sensitivity, toxic reactions, and an acute or generalized sensitivity. An allergic, cellular inflammatory reaction usually takes place within two or three days and manifest clinically as type IV hypersensitivity.[2]

Given the wide variations in the signs and symptoms of allergic reactions that are possible, it can be difficult for the clinician to accurately diagnose the condition. Waroquier et al have described allergic responses to a variety of metals including a case of cobalt contact allergy presenting with pain and itching in the mouth and a geographic tongue. They have also reported allergy to titanium, an inert substance, commonly used in dental practice.[3]

Lichenoid lesions, which are commonly seen in reactions to amalgams, are usually seen adjacent to the restoration or prosthesis which is likely to contain the allergen, as observed

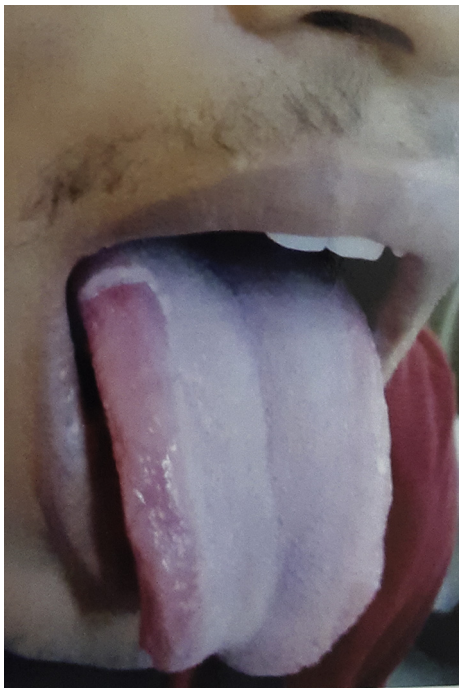


Fig. 2 – The lesion on the third day with erythema and atrophy of the lingual papilla.

in this case where the lesions were found on the lateral aspect of the tongue in close approximation to the restorations.

Hypersensitivity reactions, immediate or delayed, requires the patient to have had prior exposure to the allergen resulting in sensitization.[4] In this case it is interesting to note that the restorations of permanent lower second molars were done on two consecutive days and the patient experienced the



Fig. 3 – The lesion improved within a week but resembled as a geographic tongue.

symptoms two days after the second restoration was placed. It is also clinically relevant to note that though the lesion presented as a well circumscribed lesion initially, the size and the shape of the lesion changed over the subsequent days, giving it a geographic tongue appearance.

Studies investigating the usefulness of removing amalgam fillings in patient with amalgam – related oral lichenoid reactions have varying conclusions.[5] Dunsche et al suggest that patients will benefit from amalgam removal, even if the patch test result is negative.[6]

This case reports highlights the need for dental practitioners to be aware of the potential adverse and allergic reactions to dental materials and be familiar with the principles of managing such problems.

Conflicts of interest

All authors have none to declare.

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Dr. T. Samraj receives Lifetime Achievement Award



Fellow Dr. T. Samraj, Secretary & Treasurer of PFA was awarded:

1. Lifetime Achievement Award by Indian Orthodontic Society at 49th Annual Conference of IOS held in November 2014 at Kolkata.
2. Master Fellowship by International College of Dentists at the 50th Annual Convocation held in December 2014 at New Delhi.

Congratulations Dr. T. Samraj….