

CONTACT POINTS

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Amalgam-tattoo-associated oral lichenoid lesion

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We report on a lichenoid reaction that developed in association with amalgam particles within an amalgam tattoo of the oral mucosa.

Key words: amalgam; lichenoid; oral; tattoo.

Introduction

Amalgam tattoo is a relatively common intraoral lesion, which results from an accidental implantation of amalgam into the oral adjacent soft tissues during a dental procedure, resulting in a circumscribed area of bluish black pigmentation (1).

Contact lichenoid reactions of the oral mucosa developing in response to contacting amalgam restorations are a known and accepted disease entity, although there is still debate regarding the pathogenic mechanisms involved (2).

We believe this to be the first report of a localized lichenoid reaction developed in response to an amalgam tattoo. A literature search failed to find any previous such reports.

Case Report

A 54-year-old woman was referred to the Oral Medicine Department with an area of circumscribed pigmentation on the lingual aspect of the interdental papilla of lower second premolar/lower first right molar. The lesion was asymptomatic and noted by the referring dentist during a routine examination.

The patient was medically fit and well, was not taking any medication,

and did not smoke. Examination revealed a circumscribed area of pigmentation surrounded by a faint reticular keratosis (Fig. 1), with no evidence of trauma. The oral mucosa was otherwise of normal appearance, with no other areas of pigmentation or keratosis evident.

The clinical impression suggested that the pigmented lesion was an amalgam tattoo, while the surrounding reticular keratosis represented a lichenoid reaction to the mercury present in the amalgam tattoo.

A biopsy under local anaesthetic was carried out to exclude dysplastic changes, and the tissue sample was sent for histological examination. Dispersed metal typical of an amalgam tattoo with an associated lichenoid reaction was observed. There was no evidence of dysplasia.

In view of the diagnosis and lack of symptoms, the patient was simply reassured and discharged back to her dentist's care.

Discussion

Amalgam tattoos are common lesions of the oral mucosa, generally involving the gingivae, alveolar, and buccal mucosa, with an incidence of about 8%.

They form secondarily to the implantation of amalgam during a variety of dental procedures (1, 3). The amalgam is present as fine granules and fragments of various sizes. The larger fragments are encapsulated by collagen and persist unchanged over time, while particles smaller than 35 µm are phagocytosed by macro-

phages and giant cells, followed by intracellular digestion and release of mercury and fine particles containing tin and silver (4).

In a study of 268 amalgam tattoos, Buchner and Hansen noted that there was no tissue reaction in 45% of the cases, while in 17% there was a macrophagic reaction and in 38% there was a chronic inflammatory infiltrate usually in the form of a foreign body granuloma (1).

It is accepted that lesions resembling oral lichen planus clinically and histologically occur in areas of frequent contact with amalgam restorations and improve after substitution of the amalgam restorations with an alternative restorative material. Indeed, it is now an accepted practice to describe such a lesion as a contact lichenoid lesion (5). However, there is debate on whether this represents a true allergic phenomenon to inorganic mercury or whether it is a toxic-, irritant-, galvanic- or plaque-induced reaction (2).

Patch testing is helpful in determining whether an allergy to mercury or mercuric compounds exists (6, 7); however, various studies have shown that empirical replacement of amalgam restorations can result in clinical improvement of contact lichenoid lesions even in cases where patch testing to mercury and inorganic mercurials was negative (8, 9).

This case report illustrates that a lichenoid reaction is elicited by amalgam directly and indeed represents a true hypersensitivity reaction. It would have been interesting to note whether the patient would have had

a positive patch test to mercuric salts; however, it was believed that this was not clinically justifiable in view of the lack of symptoms.

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Fig. 1. Intraoral photograph of the amalgam tattoo with an associated lichenoid reaction.