

Extensive amalgam tattoo on the alveolar-gingival mucosa *

Tatuagem extensa por amálgama em mucosa gêngivo-alveolar

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Abstract: Amalgam tattoos are common exogenous pigmented lesions of the oral mucosa occurring mainly by inadvertent placement of amalgam particles into soft tissues. The diagnosis of amalgam tattoo is simple, usually based on clinical findings associated with presence or history of amalgam fillings removal. Intraoral X-rays may be helpful in detecting amalgam-related radiopacity. In cases where amalgam tattoo cannot be differentiated from other causes of oral pigmentation, a biopsy should be performed. This article deals with an extensive amalgam tattoo lesion which required a biopsy for a definitive diagnosis.

Keywords: Dental amalgam; Mouth mucosa; Pigmentation

Resumo: Tatuagens por amálgama são lesões pigmentadas, exógenas, de frequente ocorrência na mucosa bucal, que resultam da introdução acidental de partículas de amálgama nos tecidos moles. O diagnóstico da tatuagem por amálgama é simples, geralmente, baseado em achados clínicos, complementado pela história recente ou pregressa de remoção de restauração por amálgama. Radiografias intraorais podem ser úteis na detecção de radiopacidade, associadas à partícula de amálgama. Nos casos em que as tatuagens por amálgama não permitem diferenciação de outras lesões melanocíticas, o exame histopatológico deve ser realizado. Os autores relatam a ocorrência de lesão extensa por tatuagem de amálgama com confirmação histopatológica.

Palavras-chave: Amálgama dentário; Mucosa bucal; Pigmentação

INTRODUCTION

Pigmented oral lesions may be divided into melanic – melanocytic nevi, melanomas and melanoses - and non-melanic such as, for example, amalgam tattoos. The occurrence of oral lesion by amalgam tattoo is relatively common and represented by a blue or darkened stain, whose diagnosis is usually made exclusively on a clinical basis.¹ Dental X-rays may be useful in the identification of the radiopaque material.² In some cases, however, it is necessary to perform a biopsy in order to confirm diagnosis.³

The present report describes a lesion by amal-

gam tattoo, of uncommon size, where a biopsy was required for diagnostic confirmation.

CASE REPORT

A white, 34-year old female patient was referred to our clinic for evaluation of an asymptomatic dark-blue stain existing for 16 years on the alveolar-gingival mucosa, extending from the left mandibular canine to the second molar (Figures 1A and 1B). The intrabuccal examination revealed absence of the first left molar, extracted when she was 18 years old. Her med-

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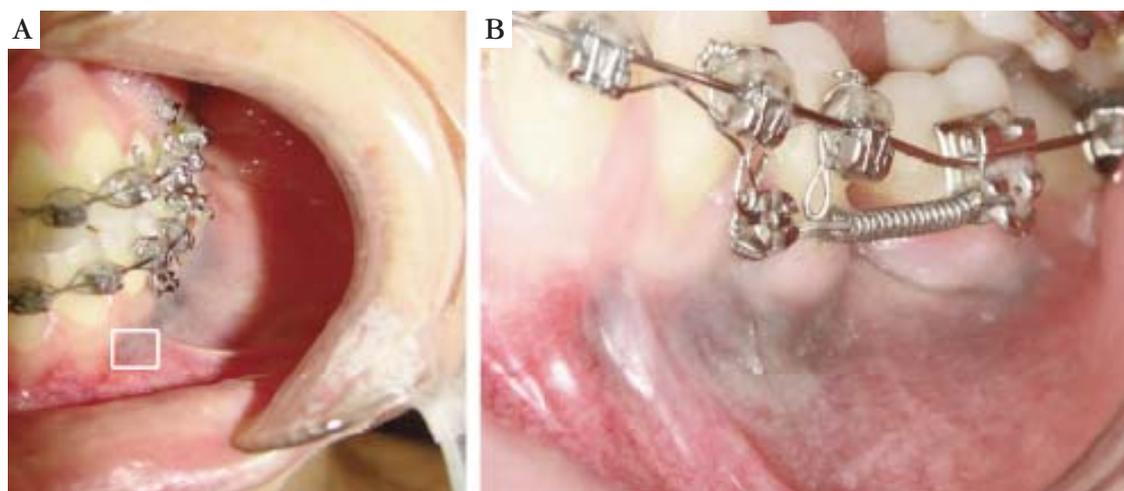


FIGURE 1: A and B. Clinical presentation: dark-blue stain on the alveolar-gingival mucosa. The area marked with a square indicates the biopsy site

ical history included several surgical interventions when she was very young, due to varicose veins in the lower limbs. No other relevant systemic condition was reported.

According to the available clinical data, composed mainly of an extensive dark stain in the gingival mucosa, the possible clinical diagnoses included amalgam tattoo, melanocytic lesion or benign vascular lesion. The latter hypothesis was excluded, as the region would not become ischemic when digital pressure was locally applied. A periapical X-ray showed a punctiform radiopaque image, suggesting the presence of metallic material (Figure 2). Due to the fact that this radiographic finding was located in the region of the extracted tooth, the patient was reevaluated and when asked whether the extracted tooth had an amalgam filling, she answered affirmatively. Based on all these data, the diagnosis of amalgam tattoo was made. However, due to the extension of the lesion and to provide a correct diagnosis to the patient, a biopsy was performed.

The histopathological exam revealed the presence of exogenous material of irregular format and dark coloration in the connective tissue. Brown pigmentation of elastic fibers could be noticed around nerves and small vessels. These characteristics confirmed the clinical diagnosis of amalgam tattoo lesion (Figures 3A and 3B).

DISCUSSION

Amalgam tattoos are pigmented and exogenous lesions that appear in the oral mucosa, usually as a result of inadvertent introduction of amalgam particles in oral mucosa tissues.⁴ In some cases, this pigmentation may occur by interaction of the oral mucosa with corrosion of metallic materials, especially through release of silver from the amalgam alloys.⁵

The usual clinical aspect of amalgam tattoo lesions is a blue, black or gray stain, measuring from 0.1 to 2 cm, that affects mainly the gingival and alveolar mucosa.⁴ The amalgam tattoo diagnosis is simple, generally based on clinical observation associated with the presence or history of amalgam fillings removal. Periapical X-rays may be useful to detect the radiopacity related to amalgam, but this characteristic is seen in less than 25% of all cases.⁶ The biopsy should only be performed when necessary to exclude melanocytic lesions, mainly a malignant melanoma.^{6,7}

In the present case, a biopsy was performed due to the large (and uncommon) extension of the lesion, and to tranquilize the patient who was worried because she believed that the gingival lesion was similar to the varicose veins ones.

Extensive amalgam tattoo lesions are rare, their



FIGURE 2: Periapical X-ray showing a punctiform (arrow) radiopaque image in the alveolar ridge, suggesting the presence of metallic material

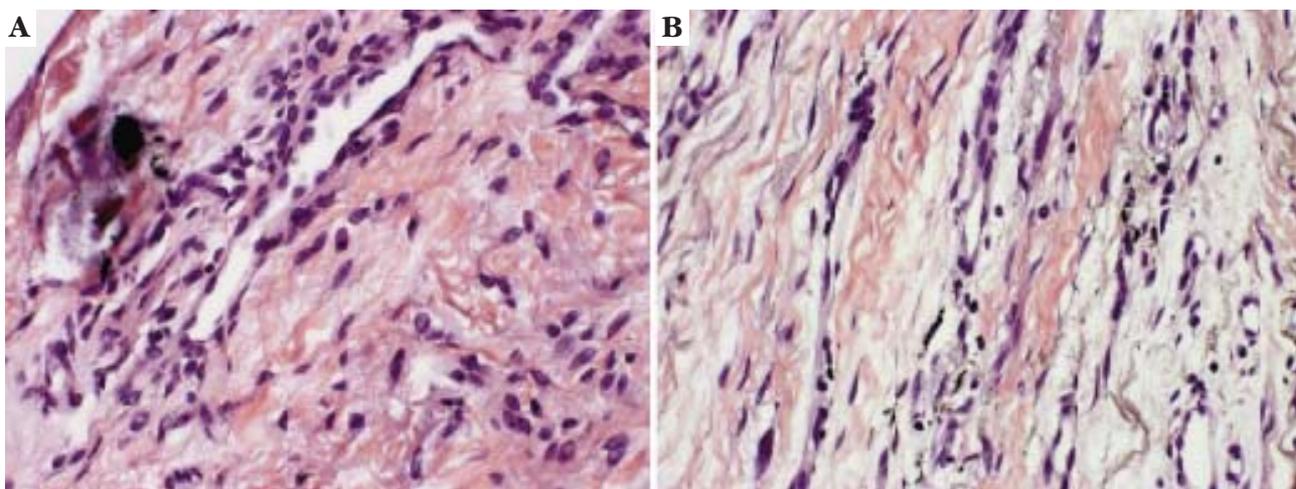


FIGURE 3: Histological cut of the oral mucosa revealing: A - solid, darkened fragments with an irregular format (HE 400x); B - brownish granules dispersed along collagen fiber bundles (HE 400x)

occurrence usually results from diffusion of small amalgam particles to the surrounding tissues, as probably happened in this case.⁸

The removal of amalgam tattoos is not necessary, except for esthetic reasons, or in rare cases when they produce lichenoid reactions.^{9,10} This event is considered quite rare, as the great majority of lichenoid reactions is predominantly related to amalgam fillings,

rather than to amalgam tattoos.¹¹ There is only one report in the literature establishing association between the lichenoid reaction and the amalgam tattoo.¹⁰ In the present case, there was no need to proceed with removal of the radiopaque material, as it did not cause any kind of discomfort to the patient, whether esthetic or functional. □

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