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Case report article

Diagnóstico e abordagem de um corpo estranho na cavidade oral: relato de caso

Diagnosis and management of oral cavity foreign body: a case report

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Resumo

A zona da cabeça e pescoço é a região do corpo humano onde a incidência de corpos estranhos é geralmente mais elevada do que outras regiões. Este caso clínico relata e discute a abordagem de um corpo estranho (fragmento de uma restauração de amálgama) detectado no corpo da mandíbula durante o exame do paciente.

Palavras-chave: Amalgama dentário; Diagnóstico; Corpos estranhos.

Abstract

The zone of head and neck is the region of the human body where the incidence of foreign bodies is usually higher than other regions. This article presents a clinical case report and discusses the management of a foreign body (fragment of an amalgam restoration) detected in mandible body during patient's examination.

Key Words: Dental amalgam; Diagnosis; Foreign bodies.

INTRODUCTION

Foreign bodies are often encountered in the region of oral cavity by ingesting or introducing by either traumatic injury or iatrogenic procedures and represent a severe public health problem in childhood [1]. When a foreign body is observed in the head and neck region, the principal challenge is to reach a complete diagnosis and consequently build up a treatment plan.

The management in each case can be very particular and depend on various factors such as type of the foreign body, location, surrounding anatomical structures and possible complications [1, 2]. Due to this situation, there are no protocols about foreign bodies impacted in oral region. Literature (e.g. clinical case reports) can always help professionals reaching for the best approach for the patients; however, there are little clinical cases reporting the entire process of diagnoses and treatment.

This article reports a clinical case where an oral foreign body with radiographic image suggesting metallic nature was observed in the mandible body during patient's examination. The entire process of the diagnosis, treatment plan, procedures and follow-ups are been described and discussed.

CASE REPORT

A 47-years-old female patient presented to the service of Integrated Clinical Discipline of School of Dentistry of Ribeirão Preto, University of São Paulo, with the mainly complaint of mastication difficulty because of lacking teeth. The patient's medical history was negative for systemic alterations. During intraoral examination, it was observed some edentulous areas (corresponding to 28, 37, 45, 46 and 47 teeth). There were no abnormal findings in the periodontal examination. A discreet and hard salience on the board of the right posterior sublingual region was noted during palpation.

The panoramic radiograph revealed a metal-like radiopacity of approximately 5 mm in diameter located in edentulous region of the right mandibular body (Figure 1). Normal adjacent trabecular bone was noted. To locate the radiopaque material, an occlusal radiography was taken. It revealed that the foreign material was not located in the bone, but rather in soft tissue in the lingual aspect of the mandible, showing an elliptical-shaped radiopacity (Figure 2).

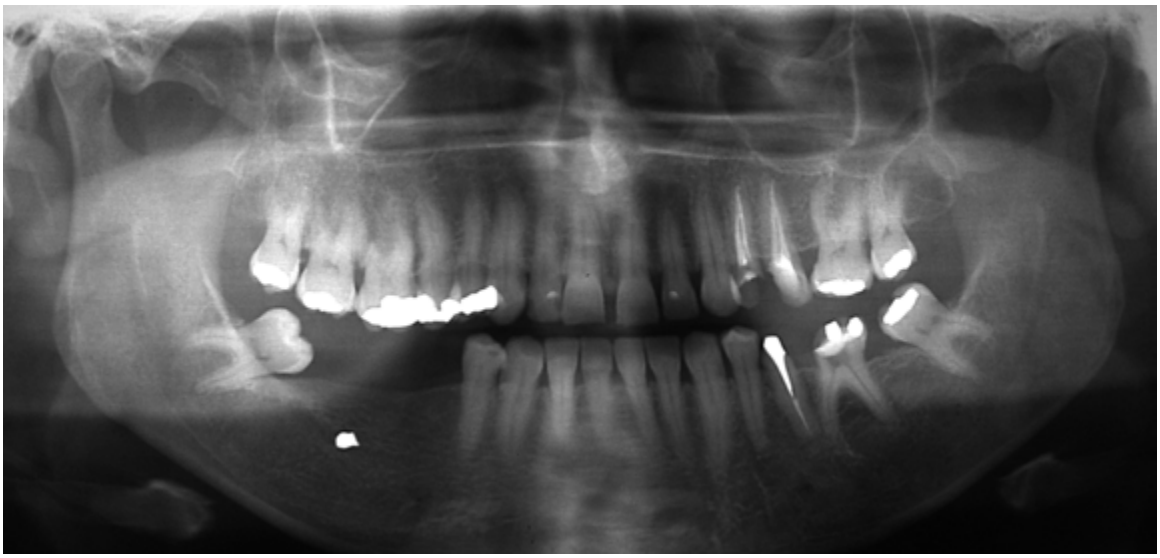

Figure 1. Panoramic radiograph demonstrating a retained metal-like foreign body in right mandible.

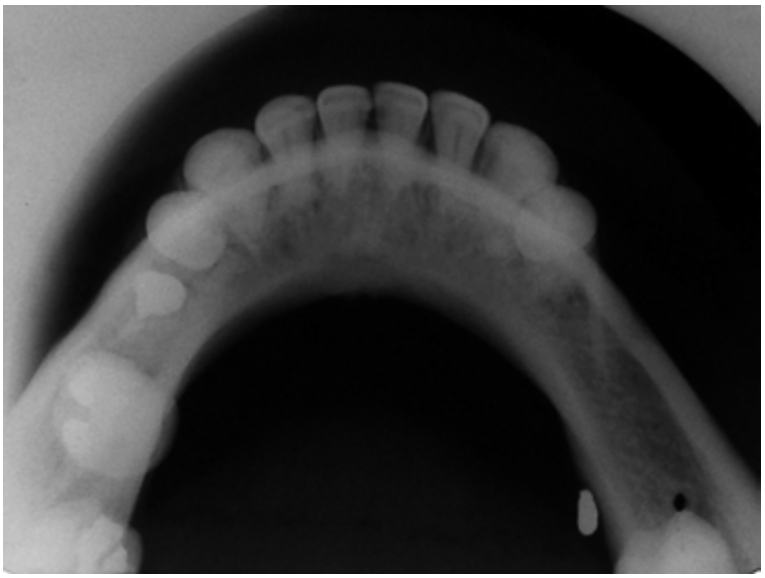

Figure 2. Occlusal radiograph showing the lingual position of the foreign body previously detect in panoramic radiograph.

Because clinical and radiographic findings, surgery removal of the foreign body and histopathological examination were planned. The surgery occurred after prophylaxis procedure and anesthesia of the inferior alveolar nerve. The incision was held in crescent-shaped in the medial region of the lingual alveolar bone, about 1 cm below the alveolar ridge level. The adjacent tissues were incised until the hard consistency and the totally encapsulated foreign body was found and removed**.** On gross examination, the purple mass was evidenced with a membrane capsule (Figure 3 a), and the metallic foreign body was removed from the tissue capsule (Figure 3 b) that surrounded it.

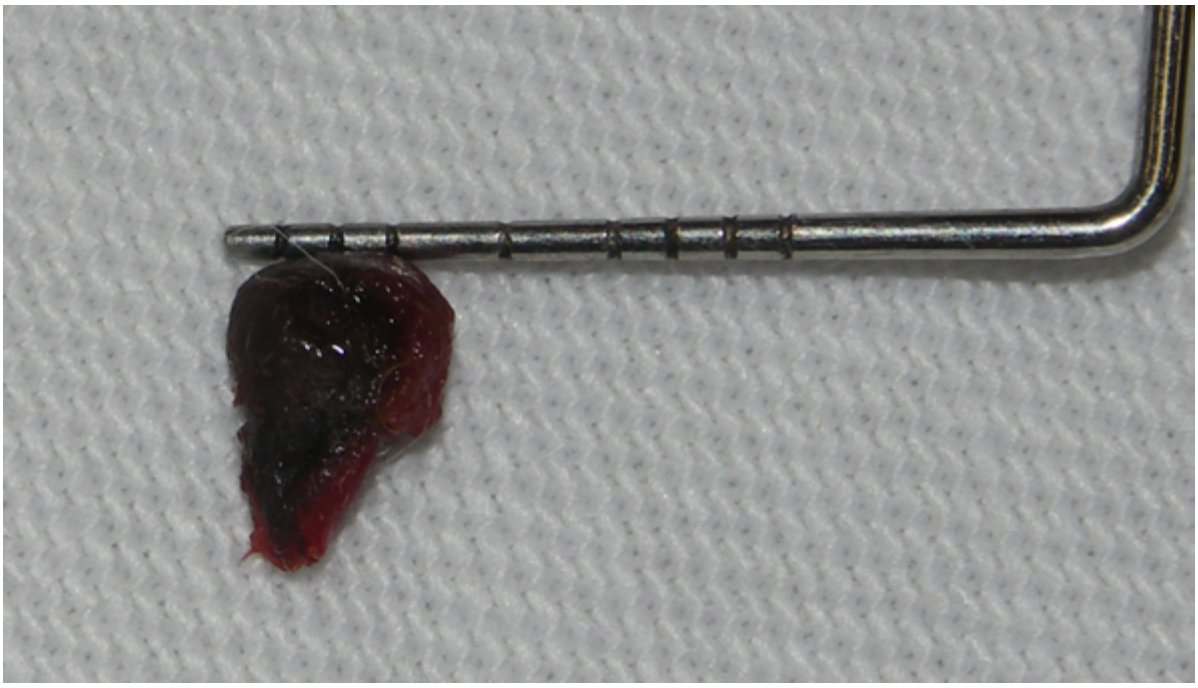

Figure 3. (a) Visual aspect of the entirely encapsulated foreign body just after its removal.

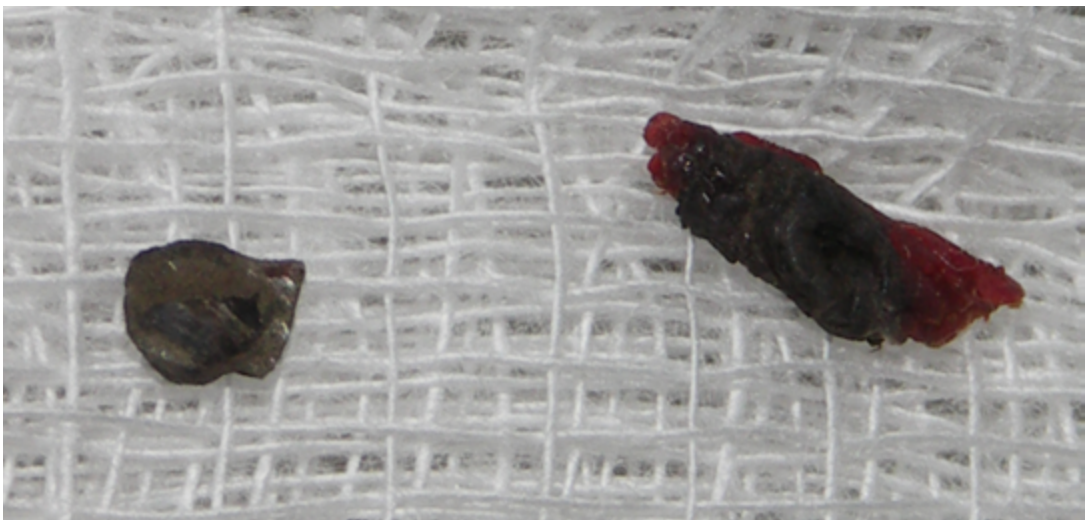

Figure 3. (b) Visual aspect after removing the metallic foreign body from the capsule tissue that was surrounding it.

Histopathological examination showed that the tissue involving the foreign body had amalgam tattoo-like aspect as the amalgam particle, and it was surrounded by a fibrous capsule without eliciting a foreign body reaction at site of implantation. The analysis revealed a fibrous connective tissue with parallel bundles of collagen fibers (Figure 4 a). In addition, it was evidenced the pigment deposition along collagen bundles more intense in the area of intimate contact with the amalgam particle (Figure 4 b).

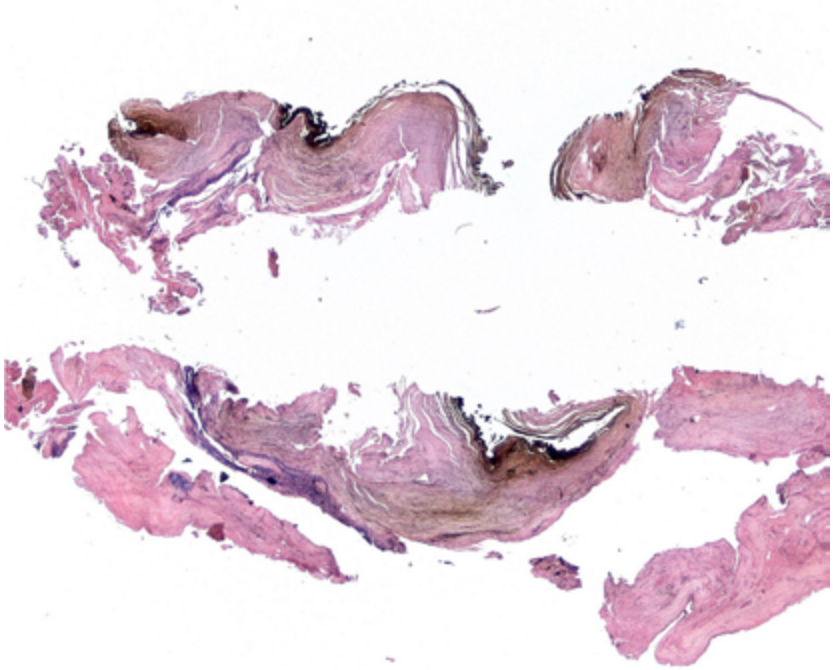

Figure 4. (a) Fibrous connective tissue showing parallel bundles of collagen fibers in which inside focal pigmented areas are visualized (x4, H&E stain).

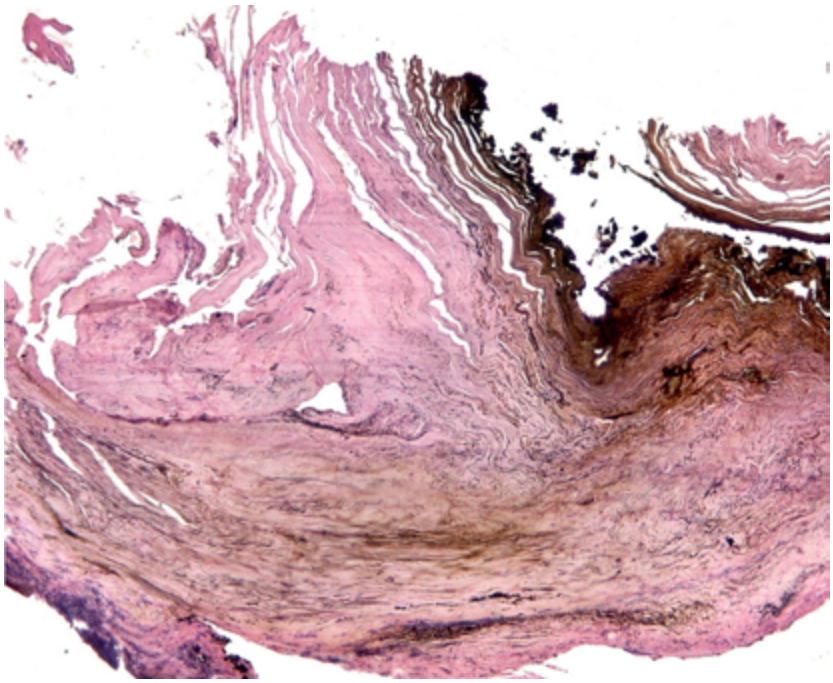

Figure 4. (b) In high-power view, notice the pigment deposition along collagen bundles (x40, H&E stain).

At follow up evaluation, oral mucosa showed satisfactory healing with no evidence of local complications. Patient continued the proposed dental rehabilitation treatment.

DISCUSSION

Literature have reported clinical cases where different objects and materials were found incidentally in oral cavity such as needles, migrated dental implants, amalgam particles in soft and hard tissues, wooden objects, broken instruments, impression materials, etc. [2-7] At times, intramucosal foreign body can mimic tumor-like features [6, 8]; hence, accurate diagnosis is essential.

In our clinical case, the diagnosis and multidisciplinary planning were important for the patient's integrated dental treatment in three points: 1) radiographic diagnosis where the foreign body was – which defined the surgical planning for its removal, 2) planning and surgical removal of the foreign body and 3) histological analysis of tissues that circled the foreign body.

Foreign body treatment rely on its detection and accurate location. If the foreign body is radiopaque, it is usually not difficult to detect on plain radiographs [9, 10] . Due to the relatively large extension of tissues imaged in a panoramic radiograph, it is common to detect foreign bodies in the oral and maxillofacial region with this imaging technique [11].

Differential diagnosis of radiopaque findings must be carried out cautiously. The foreign material sometimes may present a particular shape that is readily identifiable on plain radiographs. However, radiological identification of a foreign body may be tricky due to projection geometry and oddly shaped objects. If the material does not produce an image that contrasts with its surroundings, it will not be detected at all.

Imaging plays an important role in detecting and locating foreign bodies, because even if they are known to be present, blind exploration is not recommended [12]. Likewise, postoperative radiographs are recommended to rule out any unintentionally left foreign body [5]. Three-dimensional (3D) examination (e.g. cone beam computed tomography) is considered gold standard for detection of foreign bodies; however, plain film radiography is widely available, low cost, and easy to interpret. Plain radiographs may also help determine the region that should be imaged in a 3D examination, in case a foreign object is detected. When a tomographic examination is not available or recommended, at least two plain radiograph views at right angles are recommended for a better localization of a foreign body.

Therapy of choice for most foreign bodies consist in their removal since they can cause large tissue destruction [4]. However, surgical intervention must be planned carefully because in some cases it may result in significant morbidity [1]. Therefore, risks also should be assessed depending on the anatomical location or characteristics of foreign body.

In our case, even when the patient related no pain, we opted for the removal of the foreign body. This decision was taken because the established treatment plan included the installation of a removable partial prosthesis supported in a region that the foreign body was; thus, the prosthetic structure could press the foreign body region and cause pain and/or trauma for the patient after the dental prosthesis installation.

After removal surgery, we observed a dark aspect of the foreign body surrounding tissue compatible with an amalgam tattoo (Figure 3 a and 3 b), since the pigmented oral mucosa commonly occurs by the placement of amalgam particles into soft tissues. However, amalgam tattoo can be sometimes mistaken with melanotic lesions [13]. In our case, the pigmentation was not exogenous. Therefore, we decided to perform a biopsy to rule out another pathology [14].

In the current case, the histopathological examination in amalgam tattoo revealed neither

chronic inflammation nor granulomatous response. In fact, Buchner and Hansen (1980)[12] observed no inflammatory response in 45% of the cases of amalgam tattoo, while 17 % and 38 % of the cases had a macrophage reaction and foreign body-type multinucleated giant cells response, respectively.

On the other hand, inflammatory reaction to amalgam tattoo becomes more severe as mercury content in the tissue increases [15] and amalgam or its components may cause type IV hypersensitivity reactions. Oral lichenoid lesions or lichen-planus-like lesions can be caused by allergy to mercury in amalgam fillings [16, 17]. In this case, no tissue reactions to foreign body was encountered in the patient's oral cavity.

Intraoral foreign body finding can occur at any dental routine evaluation; therefore, dental clinicians should be aware the importance of clinical and complementary examination in order to obtain an accurate diagnosis for planning and treatment considering the cost-benefit for the patient. In addition, professionals should report to the dental community the management of these clinical cases to help colleagues in this field.

CONCLUSION

Oral cavity is a part of the head and neck region where foreign bodies are present more frequently. Therefore, dental professional team should be prepared to diagnosis and management considering the cost-benefit for the patient.

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