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ENDOPERIODONTAL LESION DUE TO COMMUNICATING INTERNAL ROOT RESORPTION

Lesão endoperiodontal decorrente de reabsorção radicular interna comunicante

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Abstract

Internal root resorptions are usually non-symptomatic and are discovered occasionally through periapical radiographs, revealing a very defined and regular outline. These resorptions are progressive, and eventually perforate the periodontium. The present work describes the treatment of a clinical case of internal root resorption with periodontal communication, outlining the interrelation between periodontal surgery and endodontic therapy.

Keywords: Internal root resorption; Mucogingival surgery; Periodontology.

Resumo

As reabsorções internas são normalmente assintomáticas e descobertas ocasionalmente através de radiografias periapicais, onde revelam um contorno bem definido e regular. Estas reabsorções são progressivas e eventualmente perfuram o periodonto. O presente trabalho descreve o tratamento de um caso clínico de reabsorção radicular interna com comunicação periodontal onde se fizeram necessárias a inter-relação entre a cirurgia periodontal e a terapia endodôntica convencional.

***Palavras-chave**: Reabsorção radicular interna; Cirurgia mucogengival; Periodontia.*

INTRODUCTION

Inflammation of the pulp can initiate resorption of the dentin walls, moving from the center to the periphery, especially in permanent teeth. Internal resorptions are characterized radiographically by defined and regular contours, symmetry and uniform density (1-4). Tronstad et al. (5, 6) believe that the presence of necrotic tissue signals progressive internal resorption.

Most internal resorption cases are asymptomatic and diagnosed accidentally through periapical X-rays. These radiographs reveal a radiolucence that corresponds to this dentin resorption.

The immediate removal of inflamed tissue and initiation of endodontic treatment are recommended. This treatment demands the use of surgical correction when possible, and the use of appropriate material to form a barrier capable of supporting the root canal filling (7-9).

Progressive resorptions eventually perforate the periodontum. The challenge posed by pulp necrosis, already present, requires that these communications be treated in a non-surgical fashion. The aim of this article is to present a case report of internal root resorption with periodontal communication that necessitated both periodontal surgery and conventional endodontic therapy.

CASE REPORT

A 70-year-old female was directed for endodontic treatment because of a routine radiological exam that revealed a lower right premolar with an area of dental internal resorption extending the entire cervical third of the root (Figure 1). The tooth presented inflammatory granulation tissue corresponding to the resorption area in the vestibular area (Figure 2). The anamnesis did not indicate a probable generating cause for the resorption.

FIGURE 1 - Initial radiograph of the lower right bicuspid

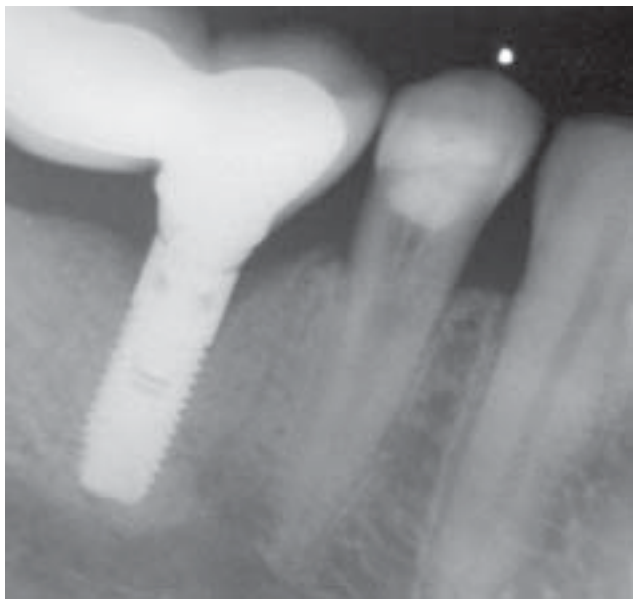

FIGURE 2 - Clinical appearance of the lower right bicuspid

Visual examination of the buccal area of the attached gingiva, corresponding to the cervical third of the root, revealed hyperplasic granulation tissue that was similar to a fistulous process, although lacking secretion. Palpation did not elicit pain or reveal any alteration in volume. Periodontal examination revealed 4 mm of depth, the presence of bleeding, and irregularity on the root surface (Figure 3).

FIGURE 3 - Periodontal probing of the damaged area

A longitudinal and vertical percussion exam did not provoke any pain, but the tooth responded in a different way than the others and did not show any alteration in the mobility test. The results obtained in pulp thermal tests were negative for cold and heat. On a radiographic exam, the periapical technique showed a radiolucent area on the cervical third of the lower right premolar. This image demonstrated an irregular enlargement of the endodontic space (Figure 1).

The probable diagnosis was internal root resorption with buccal periodontal communication, associated with pulp necrosis. The proposed clinical treatment plan included conventional endodontic treatment and periodontal surgery in order to seal the periodontal communication.

After basic periodontal treatment, root scaling and crown polishing, endodontic treatment was initiated. First, we made a coronary opening to access the pulp chamber; at this point the pulp necrosis was confirmed. We used an endodontic flexofile #25 (Dentsply-Maillefer) under irrigation/aspiration with NaOCl 5% until the root canal debridement was complete. A Gates-Glidden (Dentsply-Maillefer) drill was used to regularize the cervical third. Subsequently, a periodontal access flap allowed for removal of the granulation tissue (Figures 4 and 5).

FIGURE 4 - Surgical access of the resorption area

FIGURE 5 - Debridement of the root canal

The resorption cavity was restored with light-cured glass ionomer (Vitrofill - DFL) with the aid of a Centrix syringe to prevent the glass ionomer from flowing into the root canal. A finger spreader D (Dentsply-Maillefer) was kept in the root canal to keep it clean (Figures 6 and 7).

FIGURE 6 - Finger spreader in position inside the root canal

FIGURE 7 - Immediate appearance after restoration with ionomer

The surgical flap was sutured with silk thread n°4-0 and protected with surgical cement (PerioBond-Herpo). an intracanal medication (formocresol) was used and the cavity was sealed with Tempore (SS White).

At a subsequent appointment, the surgical cement and suture were removed and the endodontic treatment was begun, utilizing the crown-apex technique and irrigation/aspiration with NaOCl 5% and EDTA. The root canal was filled with guta percha points with endodontic cement (Endofill – Dentsply). The endodontic access cavity was restored with resin composite. Afterwards, a period of clinical preservation began. Exams and clinical tests showed the tooth to be in good functional condition since we observed no alterations that would suggest the continuation of pathological events (Figures 8 and 9).

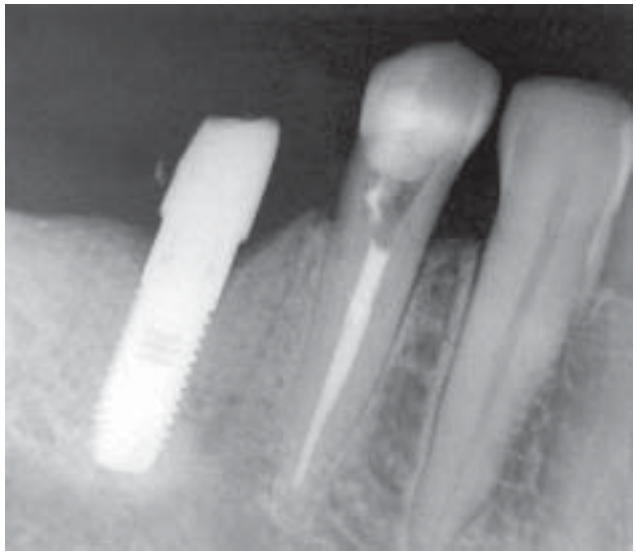

FIGURE 8 - Final radiographic image

FIGURE 9 - Final clinical aspect

DISCUSSION

The pulp-dentin complex and the tissues that form the supporting periodontium are conjunctive tissues that, when under attack, become susceptible to inflammation. The inflammatory granulation tissue formed contains multinuclear cells that promote the digestion of the mineralized tissue comprising the tooth.

In any condition of resorption, stabilization of the process entails elimination of the granulation tissue formed. In cases of internal resorption, endodontic treatment is imperative and must begin immediately after the identification of any pathological alteration (1-3, 10).

Perforation repair can be accomplished by external surgical procedures on the root to ensure hermetic sealing of the perforation track, in addition to regional curettage (11, 12).

This asymptomatic condition is discovered radiographically. The development of internal resorption tends to promote communication with the lateral periodontium. In such cases, pulp necrosis is already present, as proven clinically in this case. When pulp necrosis is present, periodontal surgical treatment should be instituted to remove granulation tissue from the resorption cavity, now filled with periodontal tissue rather than pulpal tissue. This should be followed by restoration of the cavity with a biocompatible material. A smooth endodontic instrument should be inserted in the pulpal space in order to facilitate posterior endodontic treatment. Placing a flat endodontic instrument into the interior of the root canal facilitates endodontic access.

CONCLUSION

Communicating internal root resorptions demand procedures derived from dental specialties such as endodontics and periodontics. Stabilization of the pathological process is accomplished by eliminating granulation tissue, endodontic treatment and sealing the cavity formed by resorption with a biocompatible material.

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