ENDODONTIC TREATMENT USING FILLAPEX® MTA AS AN OBTURATION CEMENT: CLINICAL CASE REPORT

Carlos Alberto Spironelli Ramos[1], Victor Hugo Dechandt Brochado[2], Roberto Prescinotti[3], Bruno Shindi Hirata[4]

[1]*Specialist, Master's and Doctorate in Endodontics, Associate Professor, Department of Endodontics, State University of Londrina.*

[2]*Specialist, Master's in Endodontics, Adjunct Professor, Department of Endodontics, State University of Londrina.*

[3]*Specialist, Master's in Endodontics, Adjunct Professor, Department of Endodontics, State University of Londrina.*

[4]*Specialist, Master's student in Endodontics, State University of Londrina*

Introduction

The advent of new materials and techniques intended for the endodontic specialty in recent years offers new perspectives and predictability for the proposed therapy. Among these innovations are instruments made from special allows such as nickel-titanium, motors which perform automated movements for oscillation, rotation, and combination between the movements, ultrasound, and magnification, among others. However unanimous opinion among researchers is that using MTA in repair procedures in dentistry, particularly in Endodontics, initiated a determinant process with regard to their special role vis-à-vis biological repair, whether in dentin, pulpal tissue or periodontal ligament. In this context, Fillapex®(Angelus) MTA endodontic obturation cement has emerged with the proposal to combine the sealing capacity of cements structured on resins and the biological repair-inducing effect of mineral trioxide aggregate as the basis for the new product.

Description of the case

Male patient, 46 years, sufferer of valvular heart disease, presented himself at the care service of the University Dental Clinic of the State University of Londrina with the complaint of pain referring to the posterior lower right region. At the time of clinical examination, anamnesis and radiographic examination, a dose of one gram of amoxicillin was administered orally to the patient, in order to prevent the possible bacteremia resulting from intervention, according to norm of the Brazilian Cardiology Association.

Clinical examination, X-ray (Figure 1) and pulpal sensitivity exam resulted in the diagnosis of acute dento-alveolar abscess, in the initial or apical phase, of tooth 46, this tooth showing a cast metal restoration involving two-thirds of the crown. After anesthesia by mandibular regional blocking, complemented by infiltrative and intraligamentary, using the anesthetic Mepivacaine 2% with epinephrine 1:100,000 (Scandicaine, Septodont), the coronary opening was done with a 28mm N2 FG spherical surgical carbide bit (Maillefer) and Endo-Z (Maillefer).

The preparation of the embouchure of the canals was executed from Widening bits numbers 1, 2 and 3 (Maillefer), complemented by CP Drill (Helse) in the cervical and middle thirds of the canals. Then electronic odontometry was performed with Tilos manual instruments (Ultradent) number 20 (yellow) for the distal canal and number 15 (white) for the mesials. Copious irrigation throughout the process was accomplished with sodium hypochlorite solution 2.5% (Odontofarma). The equipment used in the performing the odontometry was Romiapex-15 (Romibrás).

For instrumentation of the root canal system, the Reciproc system (VDW) was chosen, consisting of the VDW Silver Reciproc motor in combined movement and Reciproc red instruments (25 0.8) on the mesial canals, and black instruments (40 0.6) on the distal. These instruments are of single for the case, and were

discarded at the end of the treatment. At the end of the instrumentation the final irrigation was performed with the aid of ultrasound (ENAC) with irrigant cycling, namely, three cycles of sodium hypochlorite solution at 2.5% for thirty seconds, alternating with three cycles of EDTA solution at 19% (Ultradent) for thirty seconds.

Drying of the canals was performed with CapillaryTip green suction tip (Ultradent) and Reciproc calibrated paper cones (VDW). The gutta percha cones chosen were the equivalent to the instruments used, i.e. 25 0.8 Reciproc cone on the mesials, and 40 0.6 Reciproc on the distal.

The obturation was performed by the passive lateral condensation technique, using TP FM accessory cones (Dentsply) and the Fillapex® MTA obturation cement (Angelus). For cutting of the obturator bundle, Guta Cut thermal equipment (NRG Medical) was chosen and, after cleaning the pulp chamber with 92% ethanol, temporary restoration was done with a layer of Cimpat (Septodont) followed by light-activated resin of low load Permalow (Ultradent). The metal crown was kept provisionally to add strength to the coronary remnant.

We opted not to proceed with antibiotic systemic medication, prescribing only three 750 mg Paracetamol analgesic tablets (Tylenol), at four-hour intervals.

The patient was contacted eight and twenty-four hours after care, reporting weak stimulated pain on first contact and none on the second.

It is interesting to note the good fluidity of the MTA Fillapex® obturation cement, occupying spaces of the root canal system that did not suffer direct action from mechanical instrumentation. The formation of "surplus" or apical buds with the cement chosen denotes the foraminal cleaning that occurred in implementing the proposed instrumentation technique, where the cleaning limit (leveled at the foraminal outlet) and the length of modeling are coincident, a fact allowed by the high-taper design on the last three millimeters of the instruments chosen.

Attention is also drawn to the resorption of the surplus Fillapex® MTA cement (Figure 3) in a relatively short period of time (three months), a fact that shows the interesting biological behavior of this material, even if it contains a considerable load of MTA, about 60% of the total volume. One of the explanations for this fact may be in the unique composition of MTA, this time performed only with the purpose for which it was intended, namely, as an endodontic obturation cement, and nanoparticulate structure, resulting in higher solubility in the apical tissue.

Figura 1. Radiographic image of element 46, withsmall diffuse radiolucent area in the apical region of the mesial root.

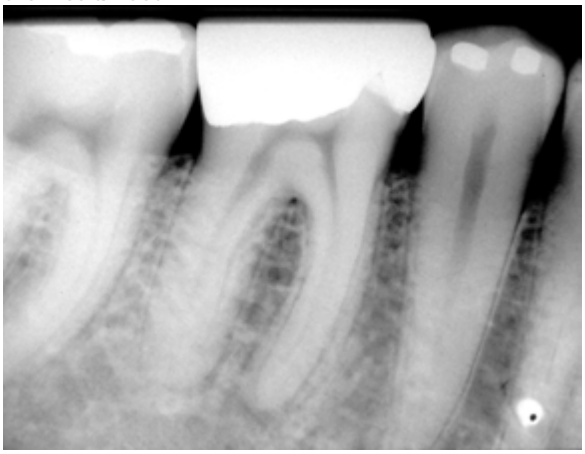

Figura 2. Postoperative radiological image immediately after obturation.

Figura 3. Radiographic image ninety days after endodontic treatment. Note resorption of the obturation cement, and absence of apical radiolucent image.