

# **CASE REPORT**

## **MANAGEMENT AND OUTCOME OF MULTIPLE COMPLICATIONS WITH A NONSURGICAL APPROACH IN A PREVIOUSLY INITIATED RETREATMENT OF AN UPPER RIGHT FIRST MOLAR**

### **1. Abstract**

Root canal retreatments, furthermore reinterventions following attempts at retreatments, present with a series of challenges. Previous procedural errors add to the complexity and remedying them is key to ensure the tooth's survival.

Starting from the coronal part with proper management of the remaining sound dental structures, continuing towards the root canal space correcting previous mishaps and biologically respecting anatomy and finally returning to the reinforced build — all these are essential steps in a root to crown approach.

### **2. Case presentation**

#### **2.1 Patient information**

- **Age:** 31 years
- **Gender:** female
- **Ethnicity:** Caucasian
- **Occupation:** corporate employee
- **Presenting complaint(s):** localized discomfort on bite for which the patient presented to her general dentist who removed the crown, post and core and initiated retreatment. The general dentist reported encountering difficulties on all root canals and referred her to my practice.

#### **2.2 History of dental complaint(s)**

- **Onset and character:** The patient reported the discomfort on bite starting within the week prior to the appointment.
- **Associated symptoms:** light swelling of the surrounding soft tissues with no associated pain.

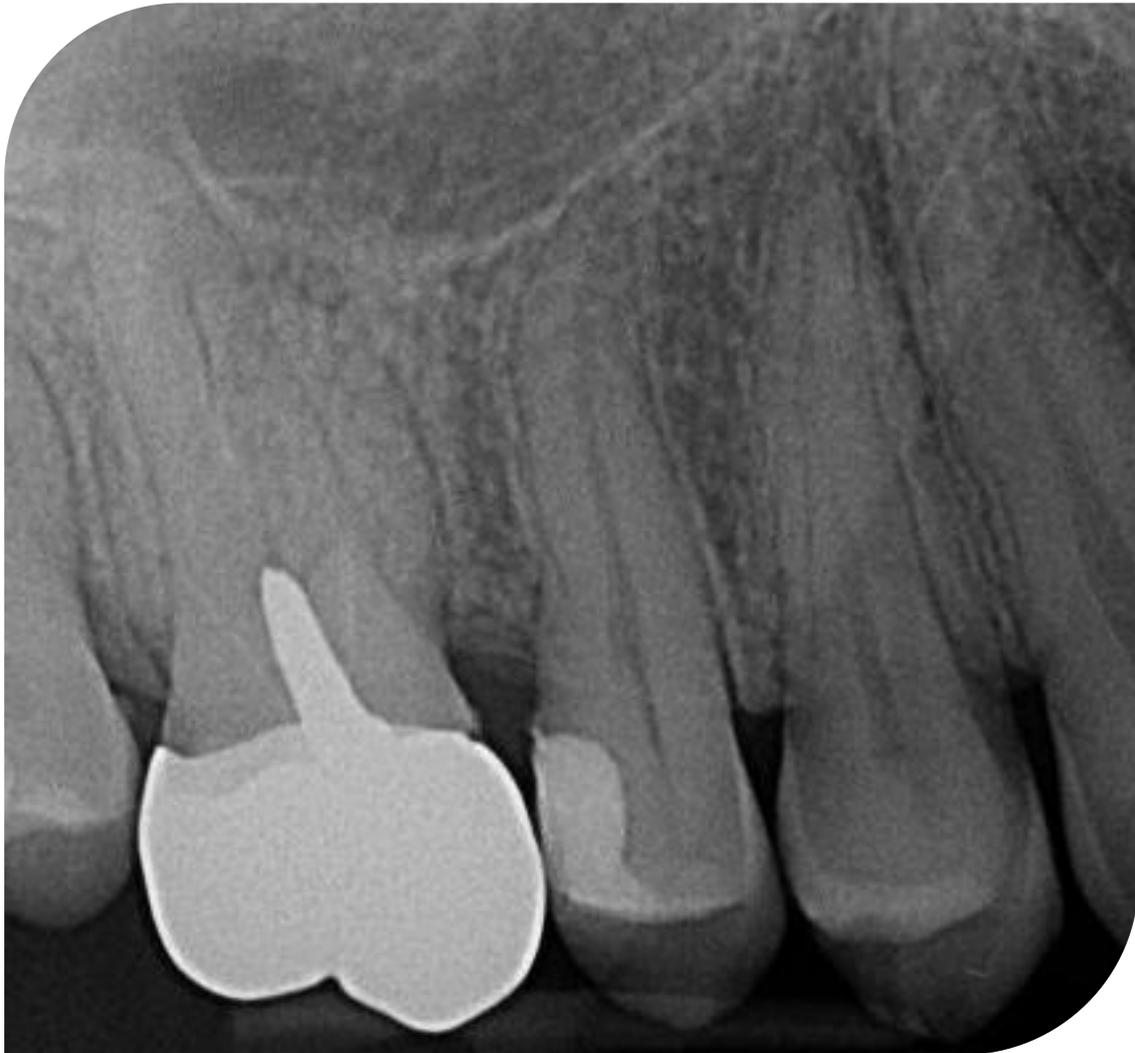
#### **2.3 Medical and social history**

No pathologies and no medication. Non-smoker, non-drinker.

## 2.4 Preoperative radiological investigations

### **Fig. 1 Periapical radiograph**

*At the referral's office, before retreatment initiation*



**Fig. 2 Periapical radiograph**

*After disassembly of crown, post and core and  
retreatment initiation by referral*



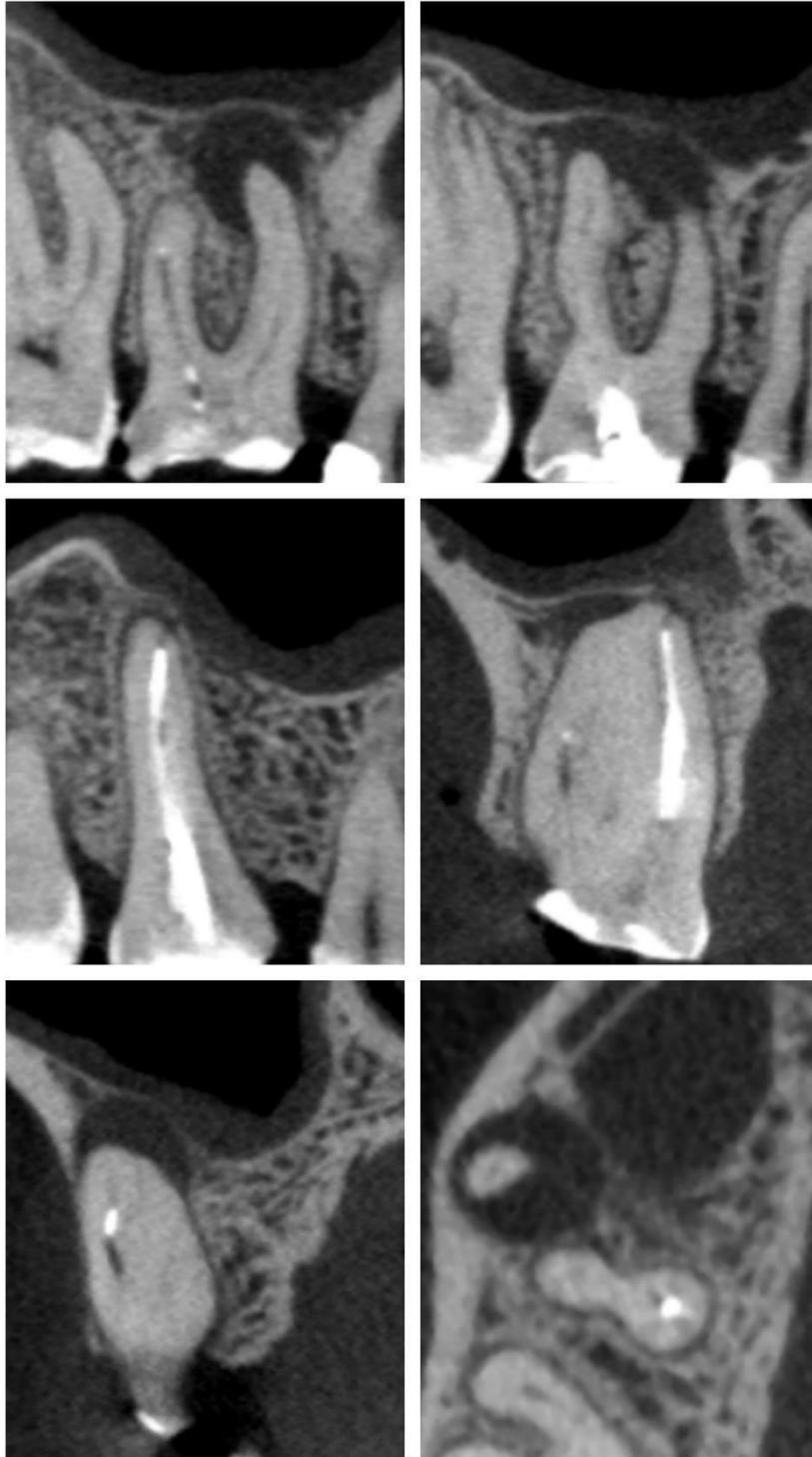
**2.5 After clinical and radiological examinations, a  
diagnosis was established for tooth 1.6**

***Diagnosis (AAE and ESE)***

***Pulpal: previously obturated root canal***

***Periapical: localized symptomatic apical periodontitis***

As per AAE and AAOMR Joint Position Statement, a small FOV CBCT was taken to evaluate the complications noticed on the periapical radiograph - separated instrument in the MB root, false path with possible perforation on the DB root, location of the original DB root canal - and establish a treatment plan.



## 2.6 Protocol and treatment planning

### 1<sup>st</sup> appointment

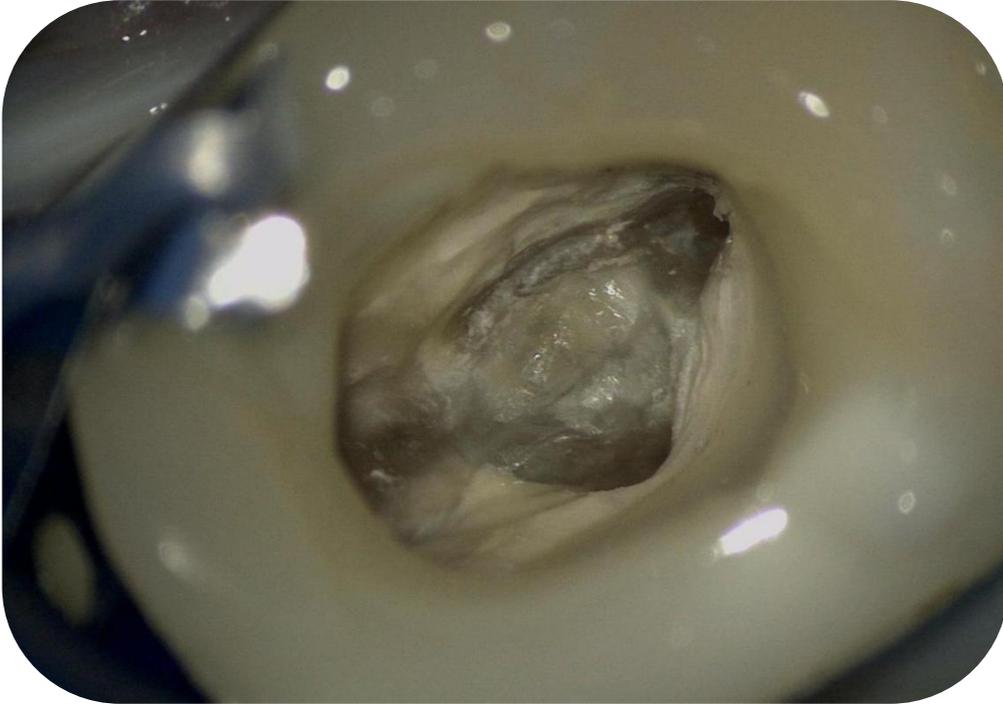
- ✓ Initial **isolation** with split dam technique



- ✓ **Removal** of all previous temporary material
- ✓ **Cleaning and refining** the remaining healthy coronal structure



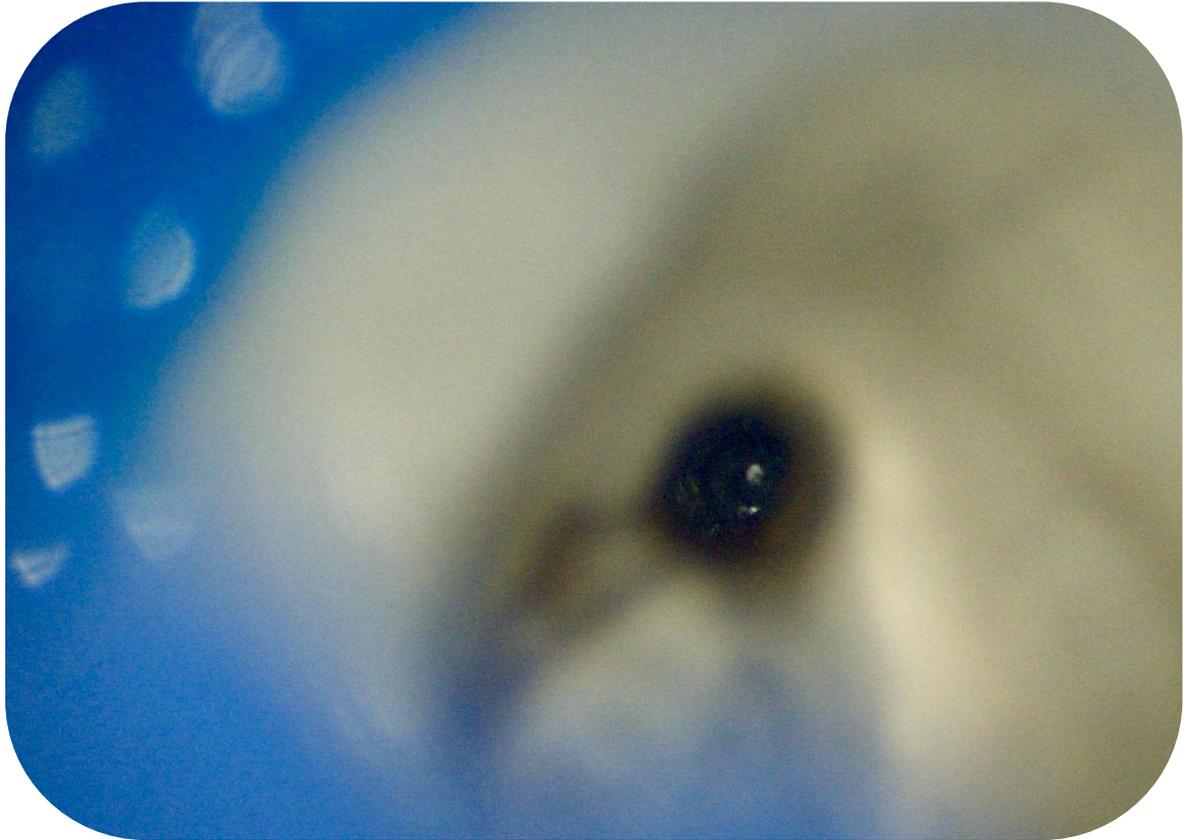
- ✓ Pre-endodontic **build-up** (dual-cure adhesive and composite)

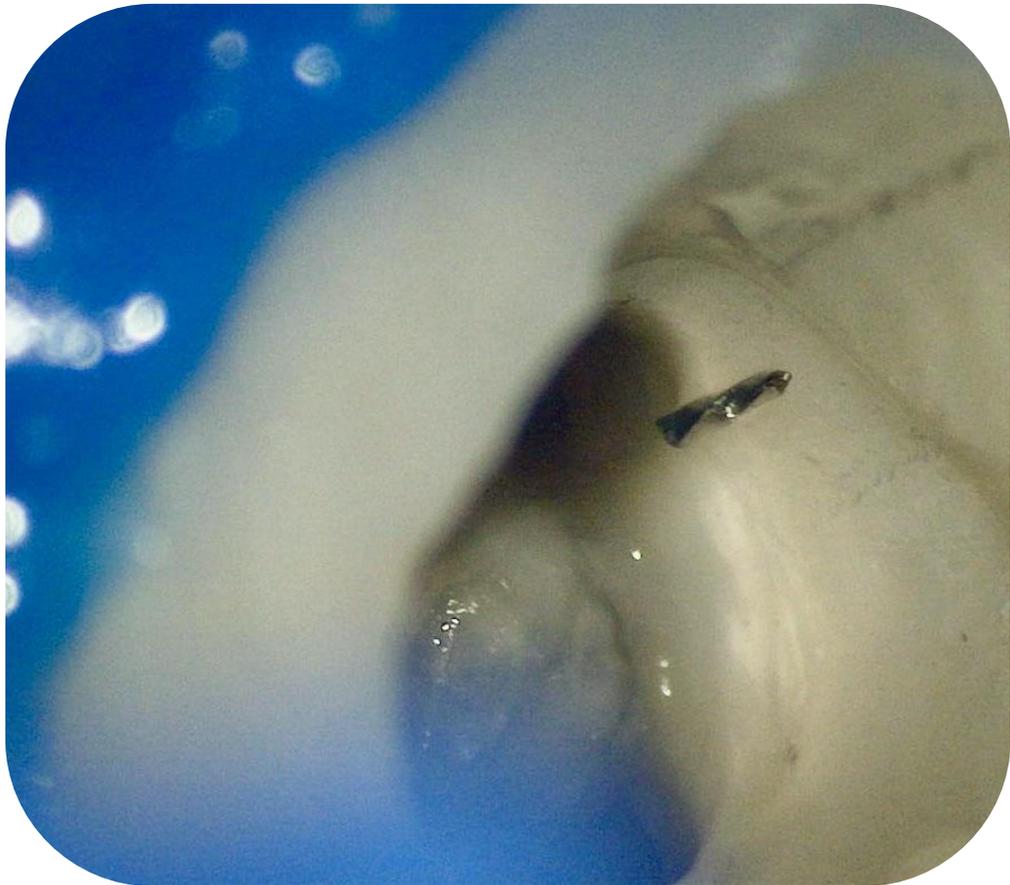
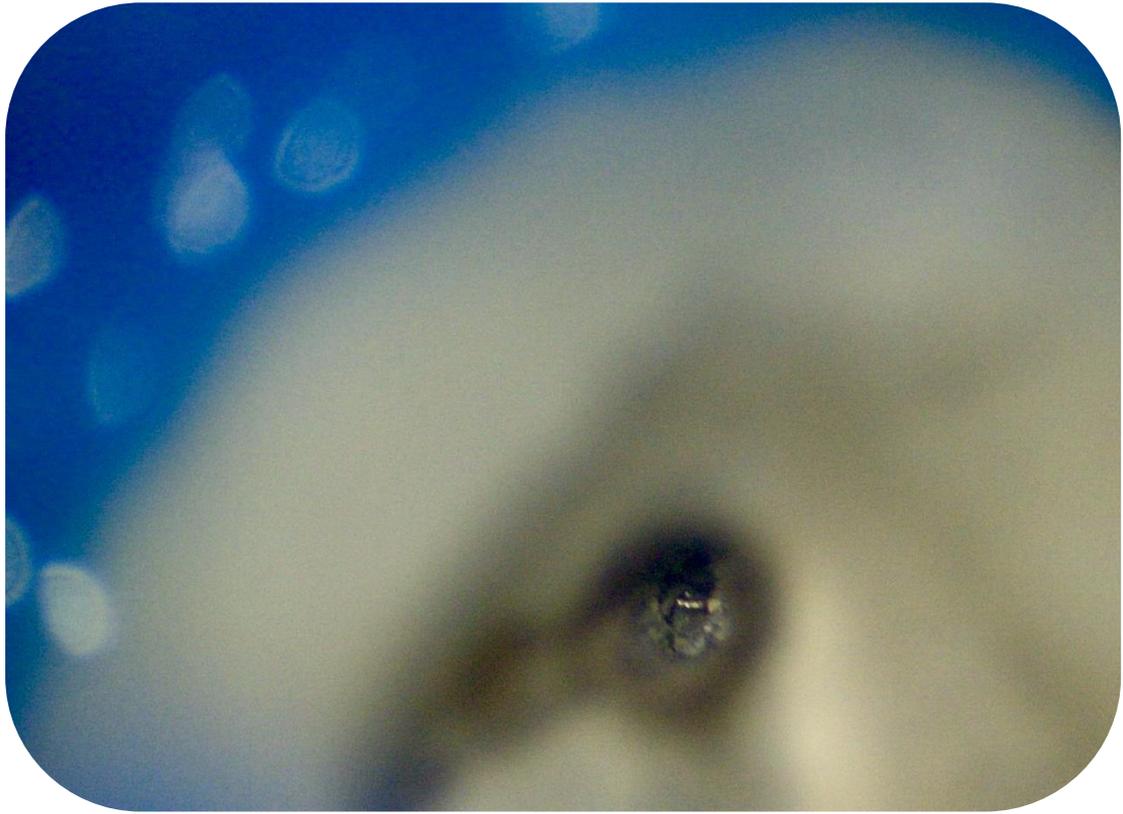


- ✓ Change of isolation by **single tooth** and reinforcement of marginal seal with **liquid rubber dam**



- ✓ **Removal** of previous root canal filling material
- ✓ **Removal** of the previously **separated file** from the MB root (ultrasonics and U-files)
- ✓ Locating and shaping the previously missed **(independent) MB2**





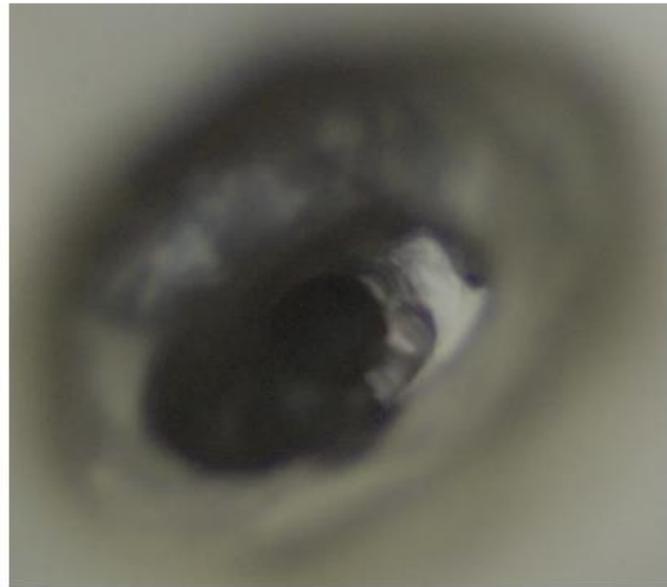
**Fig. 3 Intraoperative periapical radiograph** to verify the removal of the separated instrument and all of the previous root filling material



## *2<sup>nd</sup> appointment*

### **DB system**

- **bypassing** ledge (ultrasonics and pre-bended k-files 8 and 10) and locating the **original** DB root canal
- sealing the **false path and perforation** with fast-setting Root Repair Material (putty bioceramics)
- **locating and shaping** the original DB root canal



## **MB, DB, P root canal systems**

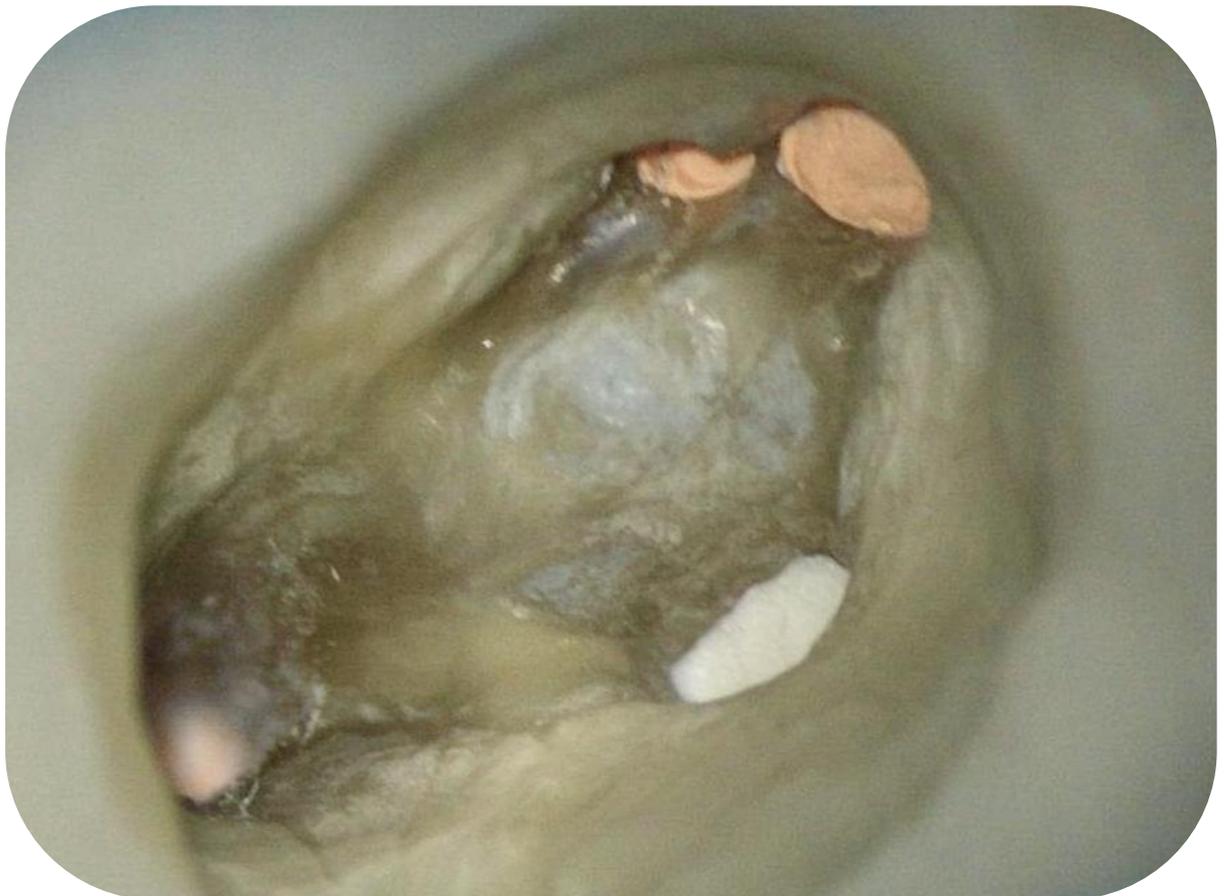
### **SHAPING and CLEANING protocol:**

- reciproc motion: R25b MB1 MB2 DB and R40b P
- NaOCl 5,25% and EDTA 17% ultrasonically activated
- distilled water final rinse



**FILLING** protocol:

- calcium silicate-based hydraulic cement
- vertical compaction, warm modified technique
- MACs: R25 MB1 MB2 DB and R40 P



**Fig. 4 Postoperative periapical radiograph**  
*Post-endodontic and pre-prosthetic fiber-reinforced build  
(dual-cure adhesive and composite)*



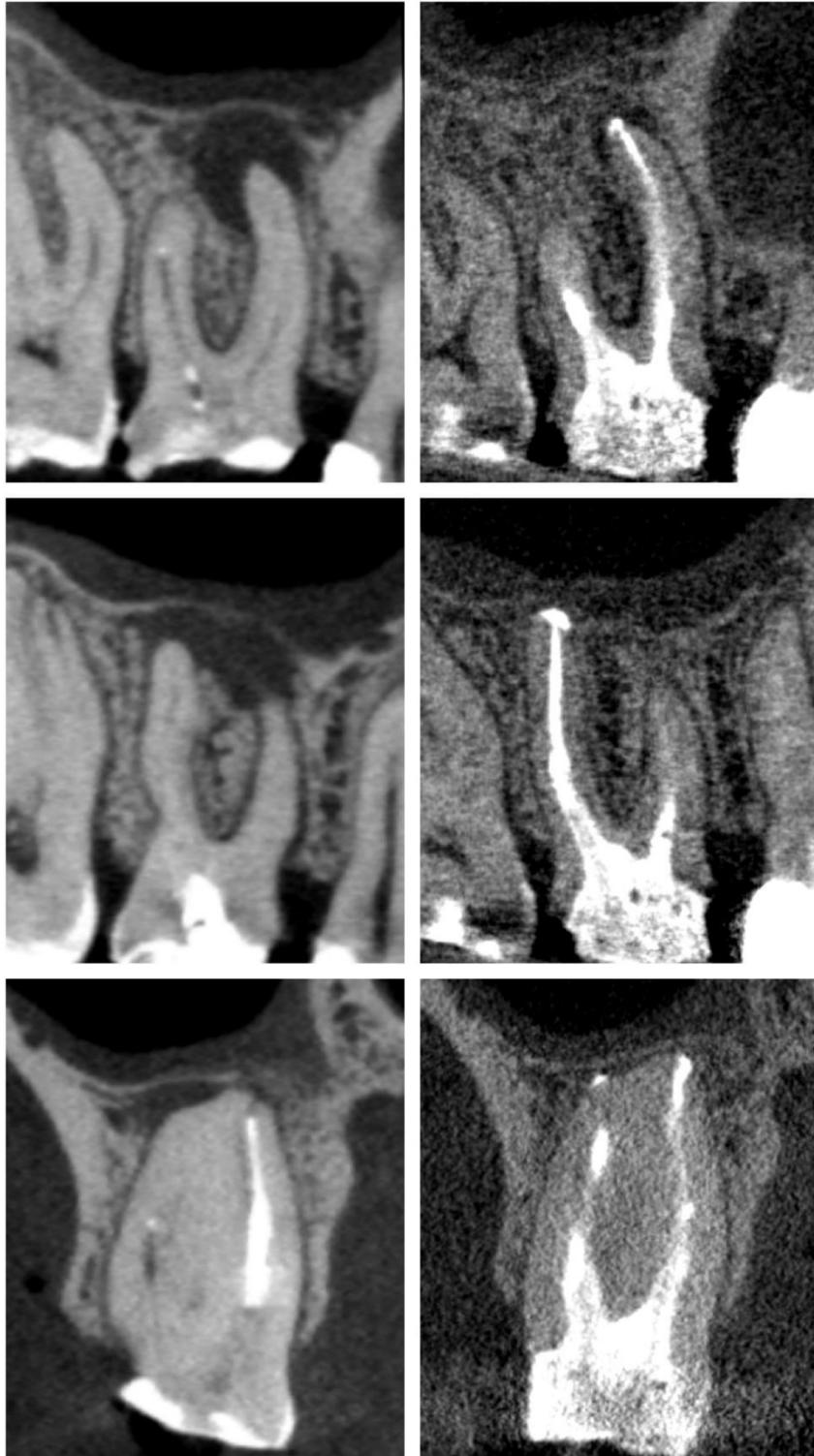
## 7 months FOLLOW-UP



**A periradicular improvement in the bone density aspect can be noticed on all root canals and no bone defect can be noticed at the perforation site on the DB root with normal clinical periodontal probing on clinical follow-up examination.**

*Tooth is currently asymptomatic and covered with a temporary crown. Next recall is scheduled at 1 year.*

### **COMPARATIVE VIEWS**



### **3. Conclusions and discussion**

Any unfunded attempt at a retreatment can further complicate and negatively influence the prognosis of a tooth's survival.

A multitude of these complications needs a proper, specialized case assessment and treatment planning to ensure the best possible outcome for the tooth's survival.

Managing all of them evidence-based ensures a positive outcome and can make the difference between saving natural teeth and extraction.