Case Report

Non-Surgical Retreatment #3

36 year-old Caucasian male presented for evaluation and treatment of tooth #3.

**Subjective**

**Chief complaint:** “I was referred to see if you can do a new root canal on my tooth.”

**Medical History:**
- Past Medical History: Previous germ cell cancer, treated with 2 surgeries and chemotherapy, patient is currently 4 years in remission
- Medications: None
- Allergies: No known drug allergies
- Hospitalizations/emergencies/major surgeries: 2 previous surgeries related to germ cell cancer treatment
- Social History: Patient denies history/current use of smoking, alcohol use, or recreational drugs

**Dental History:** Patient states existing RCT, PFM #3 was completed by a general dentist about 10 years ago and he recalls that a rubber dam was used during the root canal procedure. He states that currently no pain is associated with #3, but that his dental student found recurrent caries under the existing crown. His dental student proceeded to remove the crown and during the procedure the post came out along with the core buildup. The student observed that the caries had extended to the obturation material and he proceeded with caries removal and placed a Fuji buildup and fabricated a temporary crown. The patient was then referred to the graduate endodontic department for evaluation of retreatment of RCT #3.

**Objective**

**Vital Signs:** BP: 137/96 P: 85

**Extra-oral exam:** No facial asymmetry, swelling, or lymphadenopathy present

**Intra-oral exam:** No swelling, erythema, or sinus tract present. #3 has an existing temporary crown. #1 is missing, #2 has a MO composite, OL alloy, #4 has a MOD composite. Oral hygiene was good, and there were no active carious lesions present.
Diagnostic Findings:

<table>
<thead>
<tr>
<th>Tooth #</th>
<th>Prob</th>
<th>Perc</th>
<th>Palp</th>
<th>Mob</th>
<th>Cold</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
</tr>
<tr>
<td>3</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
<td>NT</td>
</tr>
<tr>
<td>4</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
<td>WNL</td>
</tr>
</tbody>
</table>

Radiographic Interpretation: #3 previous RCT, obturation appears short in DB, post space present in P, possible missed MB2, periapical tissues appear within normal limits, roots are in close proximity to the floor of the maxillary sinus, and mild generalized horizontal bone loss is noted.
Assessment

Pre-treatment diagnosis: #3 Previously treated with normal periapex

Plan

The recommended treatment plan was to attempt non-surgical root canal retreatment. The other options presented to the patient were to have the tooth extracted, or to leave the tooth as-is, which was not recommended due to coronal leakage resulting from communication of caries with the obturation material. The patient understands the risks involved and all questions regarding the treatment were answered. The patient was also informed of the importance of a buildup and permanent crown restoration after retreatment completion. The patient understood and agreed to the procedure and consented to treatment on tooth #3.

Treatment: The case was completed in one appointment. 48 mg of lidocaine with 24 ug of epinephrine was administered via buccal and palatal infiltration. The temporary crown was dislodged during placement of the rubber dam clamp and was removed. A rubber dam was placed with Oraseal for isolation and the tooth was accessed through the Fuji buildup material with a surgical length #4 round carbide bur. A cotton pellet was present in the chamber and upon removal and refinement of the access cavity, 3 canal orifices (MB, DB, P) were identified. Thermafil carriers were identified at the orifice level in the MB and DB canals. The P canal had a Thermafil carrier present at the apical extent of the post space. All 3 carriers were removed using chloroform and Hedstrom files. A BUC-1 ultrasonic tip was used to trough and locate the uninstrumented and unfilled MB2 canal. A search for additional canals was performed using a dental operating microscope and no cracks were noted. Purulent exudate was noted during initial placement of a #10 C file into the MB2 canal. Coronal flaring was performed using a ProTaper SX file. The DB was found to be blocked during canal negotiation, but patency was eventually gained in all canals. All canals were negotiated to length, according to the electronic apex locator (Root ZX). Working length measurements were as follows: MB: 17.5mm (MB cavo surface margin), MB2: 16.5mm (P cusp), DB: 18mm (P csm), P: 18mm (P csm). Chemomechanical instrumentation was performed in all canals using ProTaper S1 and S2 followed by ProFile ISO rotary instruments. 6% NaOCl was used
after every instrument and canal patency was maintained with a #10 C file. MAF sizes were MB: 35.04, MB2: 30.04, DB: 35.04, P: 40.04. 6% NaOCl was used as the final irrigation solution, followed by 15% EDTA, and a final rinse with 0.12% CHX. Gutta percha master cones were placed with Kerr EWT sealer, and the canals were obturated using warm vertical compaction with the Alpha downpack and Beta backfill units. A check film was taken and the case was closed with a sponge and IRM in the access cavity. The rubber dam was removed and the temporary crown was recemented with TempBond. Occlusion was verified and 2 final films were obtained. 600 mg of ibuprofen was administered to the patient and post-operative instructions were given. The patient was dismissed in good condition and referred back to his dental student for a buildup and permanent crown.

Photos and radiographs follow:
Working length films

Check film
Final films

**Post-Case Analysis:**

Prognosis: Favorable with permanent restoration

The patient will be evaluated for a 6 month recall at the OHSU graduate endodontology clinic.