

Case Report

Jim Ruckman

Non-Surgical Root Canal Therapy #19

65 year-old Caucasian female presented for evaluation and treatment of tooth #19.

Subjective

Chief complaint: "I was seen in the dental school and they were not able to complete the root canal, so they referred me to you."

Medical History:

- Past Medical History: noncontributory
- Medications: Lyrica 50mg prn pain for nerve damage to leg
- Allergies: No known drug allergies
- Hospitalizations/emergencies/major surgeries: none
- Social History: patient denies history/current use of smoking, alcohol use, or recreational drugs

Dental History: The patient had been seen at the OHSU dental school, where root canal treatment had been initiated on tooth #19. But after a second visit, the case was closed due to the inability to find and negotiate all existing canals. Upon presentation in the graduate endodontic clinic, the patient had complaints of severe pain (rating of 8/10), which had escalated since her second visit in the pre-doctoral clinic. Pt reported pain to biting, but no pain to thermal changes, and the pain was described as a constant dull ache, which had kept her up at night in recent weeks.

Objective

Vital Signs: BP: 158/95 P: 75

Extra-oral exam: Normal facial symmetry, no swelling, no lymphadenopathy

Intra-oral exam: No swelling, no erythema, and no sinus tract present. Temporary access filling on the occlusal of #19 was well sealed. #19 was in linguoversion, and #'s 17 and 18 were missing. Oral hygiene was good, and there were no active carious lesions present.

Diagnostic Findings:

Tooth #	Perc	Palp	Ice	Perio	Mobility	Radio
19	++	WNL	NR	WNL	WNL	-Below-
20	+	WNL	WNL	WNL	WNL	
21	WNL	WNL	WNL	WNL	WNL	

Radiographic Interpretation: Evidence of previously initiated therapy, periapical tissues appear within normal limits, calcified canals noted in both mesial and distal roots, malpositioned tooth #19, possible gouging of pulpal floor, possible ledging in coronal aspect of distal canal, #20 appears within normal limits, and mild horizontal bone loss is noted.



Assessment: Pre treatment diagnosis: Previously initiated root canal therapy with symptomatic apical periodontitis.

Treatment Plan: The recommended treatment plan was to attempt completing the initiated root canal treatment. The other options presented to the patient were to have the tooth extracted, or to leave the tooth as-is, which was not recommended. The patient understands the risks involved and the possibility of being unable to completely negotiate all existing canals, due to calcification being present. The patient also understands that based on the radiographic findings, and the tooth having been accessed twice, there is a possibility of iatrogenic damage being found within the tooth upon entry, which could add a complication to the procedure. The importance of a full coverage restoration in this case was stressed to the patient. The patient understood and agreed to the procedure and consented to treatment on tooth #19.

Treatment: The case was completed in two appointments. Our first treatment session began immediately following our consult appointment. Two and a half carpules of Lidocaine 2% with 1:100,000 epi was administered via an IA block and buccal infiltration. A rubber dam was placed with Oraseal for isolation, and the tooth

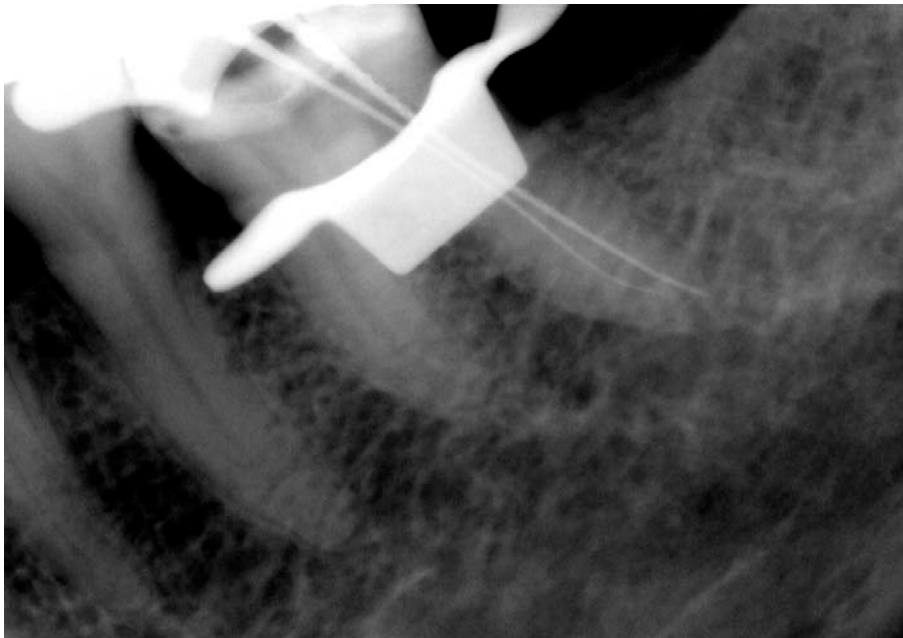
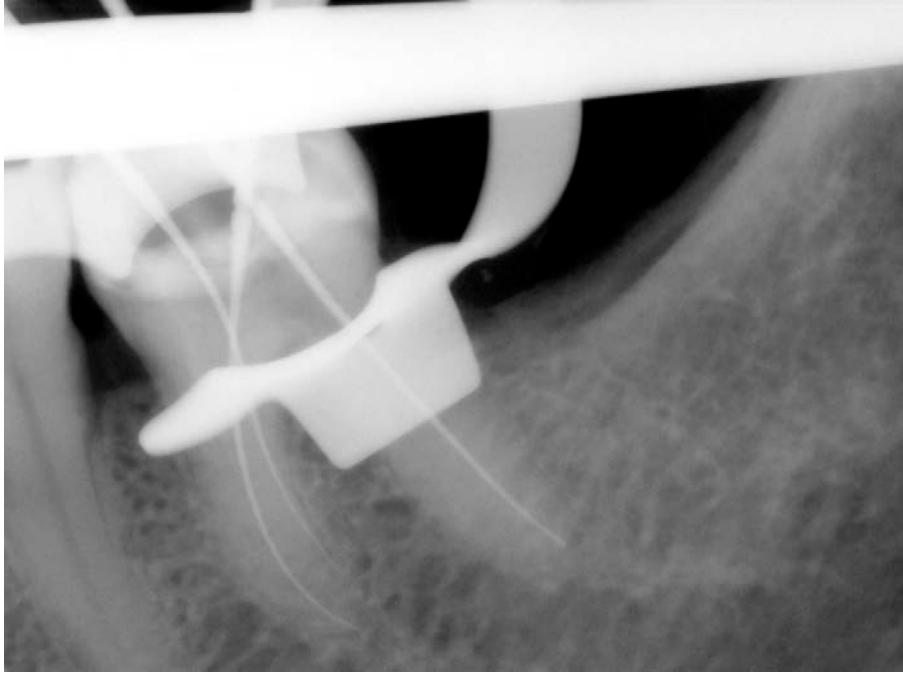
was accessed with a surgical length 4-round bur. The access cavity was refined, and three canal orifices (i.e. ML, MB, and D) were located using an LA access bur. Negotiation was performed with 8, 10, and 15.02 stainless steel hand files; the MB and D canals were difficult to negotiate in the apical one-third, with blockages also present in the apical 2mm of both canals. Finally, all canals were negotiated to length, according to the electronic apex locator (i.e. Root ZX). All canals were instrumented to a 20.02 to working length, then Orifice Shapers sizes 50, 40, 30 were used in a crown down fashion, flaring the coronal third. 6% NaOCl was used after every other instrument and during recapitulation. Due to time constraints, the case was closed. 15 ml 6% NaOCl was used for final irrigation, canals were dried with paper points, a sponge placed and the tooth was temporized with IRM. Post-operative instructions were given. 600mg Ibu q4-6h prn pain was recommended for pain management.

10 days later, at the second visit, the patient presented with the statement: "I have been feeling better since the last visit, and now I have been able to chew on the left side." The patient reported feeling progressively better since our first visit, and upon percussion, the patient was less responsive compared to our first visit. There were no other changes from the initial extra-oral or intra-oral exam. The diagnosis remained the same. Two carpules of Lidocaine 2% with 1:100,000 epi was given via IA block and buccal infiltration. A rubber dam with Oraseal was placed and the tooth was reaccessed with a 4-round bur as before; a 269-finishing bur was used to refine the access cavity. A WL radiograph was taken at this time. Upon inspection, a second distal canal was suspected, and a subsequent working length radiograph was taken. Working length measurements were as follows:

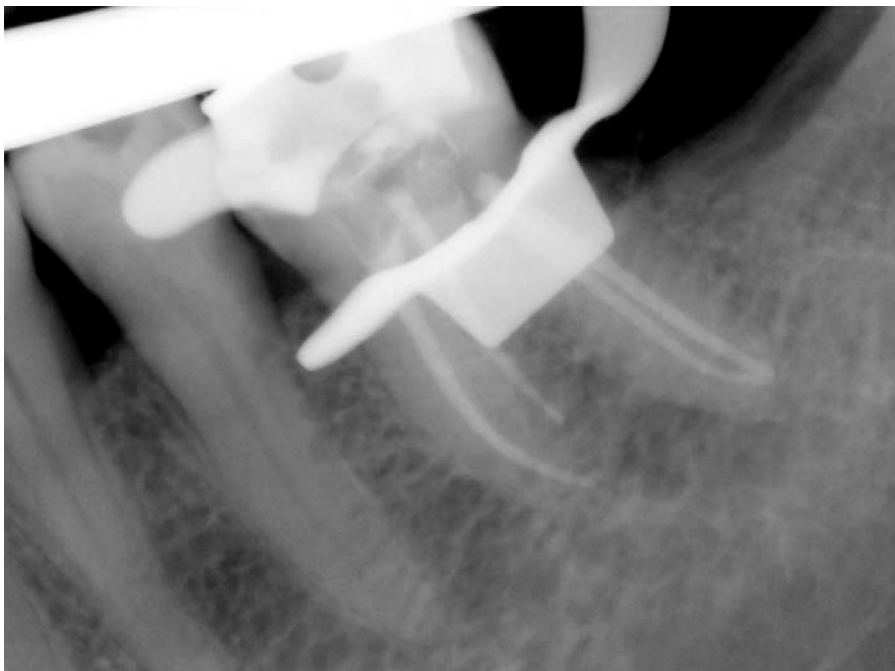
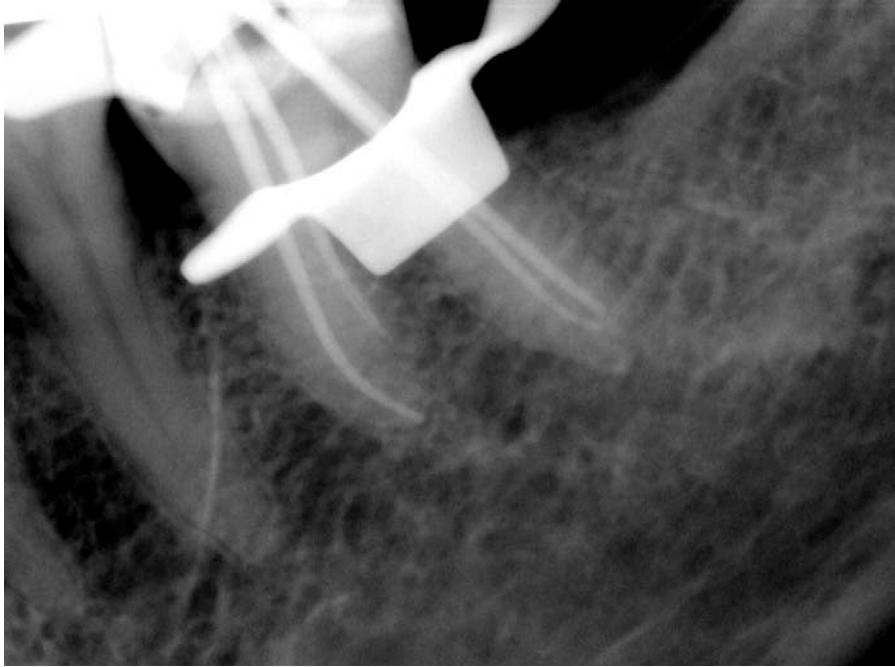
MB: 20.5mm (MB), ML: 20.5mm (ML), DL: 19.5mm (D ridge), DB: 20.5mm (D ridge)

Profile ISO rotary instruments were used to a 35.04 in the MB, ML, and DL canals, and a 40.04 was used in the DB canal. 6% NaOCl was used as the final irrigation solution, followed by 15% EDTA, and a final rinse with 6% NaOCl. Gutta percha master cones were placed with Kerr Sealer, and the downpack was performed with the Hot Tip, and backfill was performed with the Hot Shot via warm vertical compaction. Check films were taken, lengths verified, and the case was closed with a sponge in the access cavity and IRM to seal. Post-operative instructions were given as before.

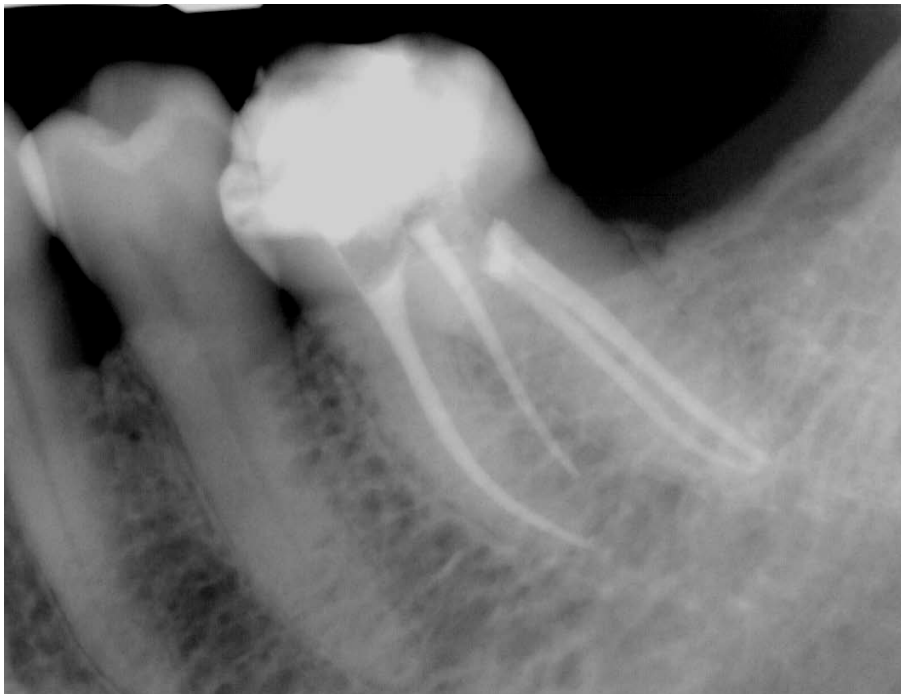
Radiographs follow:



Working length films



Master cone film and check-film



Final films

Post-Case Analysis:

Prognosis: Favorable with permanent restoration

Post-operative instructions were given to the patient, and the patient was reminded to return to her general dentist for a permanent restoration to be placed. The patient will be evaluated for healing at 6-month recall at the OHSU graduate endodontology clinic.