

KODAK 9000 3D Extraoral Imaging System

Clinical Treatment: The value of CBCT's ability to aid in guiding actual clinical treatment.

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Case Overview

A 57-year-old caucasian male in good health presents with the chief complaint of soreness in the upper right quadrant. Patient reports having initial root canal therapy approximately 4 years ago. Patient also reports that while initial symptoms improved they never completely resolved.

Conventional periapical x-rays' (Figure A) only significant finding is a possible loss of continuity of the PDL around the MB root apex and an associated small radiolucency. Clinical testing shows pain on percussion and palpation #3.



Figure A: 2D pre-operative radiograph.

A small field CBCT scan was obtained of the area with the following results. The sagittal view (Figure B) shows a very large lesion associated with the MB root. The coronal view (Figure C) shows the lesion associated with the MB root but also points to the asymmetry in the location of the existing obturation indicating a missed MB2 canal.



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Dr. Curtis J. Brimley has practiced endodontics in the Salt Lake Valley since 2006. Dr. Brimley completed his undergraduate work at Brigham Young University and attended Temple Dental School in Philadelphia, Pennsylvania. After graduation from Temple, Dr. Brimley completed a residency at the University of Utah Medical Center in clinical and trauma dentistry, and received his credentials in Endodontics in 2006 from Mercy Hospital in Detroit, Michigan. Dr. Brimley founded Copper Creek Endodontics to provide the highest level of endodontic care for his patients. He is committed to providing exceptional treatment results for every patient he works with.



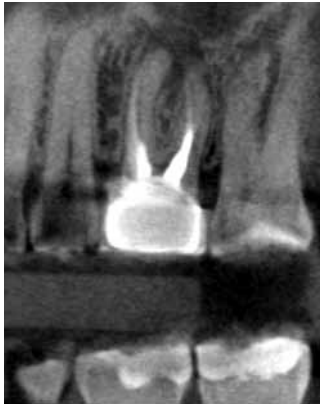


Figure B: Sagittal view showing large lesion.



Figure C: Coronal view showing large lesion and asymmetry of existing obturation.

A diagnosis of failed RCT due to a missed MB2 canal was made. While this diagnosis could have been assumed given the clinical and conventional x-ray findings, the CBCT images make the diagnosis certain. The CBCT images not only confirm the diagnosis but can now be used chairside to locate and treat the missed canal. Measurements from the CBCT help determine safe distances for lateral and apical troughing during canal location. CBCT also aids in determining whether the missed canal has its own portal of exit or some other variation of combined or shared portals.

Treatment Plan

Retreatment of the existing root canal was recommended (Figures D and E).

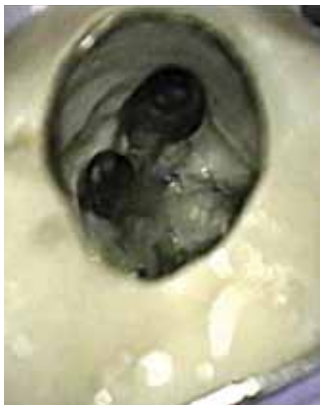


Figure D: Retreatment of existing root canal.



Figure E: 2D post-operative radiograph.

Testimonial

CBCT images are not only useful for determining a diagnosis but can be invaluable in guiding actual clinical treatment. They can show which direction should be used for troughing alongside a post or indicate where a hidden canal may be located. They can also show where the bulk of tooth structure exists for safely removing separated instruments and guide you during retreatment.

