CS 9000 3D Extraoral Imaging System

CBCT reveals critical pre-treatment information

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Case Overview:
A healthy 36-year-old Caucasian female presented with mild to moderate pain in her posterior right maxilla, radiating into her upper jaw and cheek. Her dentist referred her to our office for a consult on teeth #’s 2 & 3 because he wasn’t able to determine the source of the pain.

The 2D periapical digital radiograph (Figure 1) failed to demonstrate periapical pathosis for either tooth but did show large decay on tooth #2.

Clinical examination revealed mild tenderness to percussion and palpation on tooth #2, and severe tenderness to palpation, percussion, and cold sensitivity on tooth #3. Tooth #2 has had fillings. Tooth #3 has had a crown placed (Figure 2), there was no swelling or sinus tract and both teeth had normal probings.

Dr. Wayment earned his DDS and MSD degrees, as well as an Endodontic Certificate from the VCU School of Dentistry in Richmond Virginia. He also earned a certificate from the University of Utah GPR residence program. He earned Dean’s List honors at both institutions. During his clinical education he has had extensive surgical training and experience with implants, bone grafting and membranes giving him a unique perspective while planning root canal therapy treatment.

Figure 1: 2D periapical radiograph shows no periapical pathosis.
A routine 3D CBCT scan was taken and the axial view (Figure 3) showed the MB root was suggestive of an MB2 in tooth #3. In the sagittal CBCT view (Figure 4) it also suggested that there was a bi-furcation in the palatal root system.

**Treatment Plan:**

Due to large decay on tooth #2 it was recommended to have a filling placed and reevaluated in 6 months if no pain is present. If pain is present after the filling is placed then we will conduct root canal treatment [RCT]. The patient agreed with the treatment plan because she preferred holding off on RCT on this tooth to determine if she truly required the procedure.
Multiple visit endodontic treatment was recommended for tooth #3. A multiple-visit treatment regimen was performed on tooth #3, including removing pulp stones, locating and treating the canals including the MB2, the palatal (Figure 5) & P2 (Figure 6) canals.

Figure 5: 2D radiograph of tooth #3 showing working length for the Palatal root.

Figure 6: 2D radiograph of tooth #3 showing working length for P2 root.

Figure 7: Down pack showing both canals in palatal root and MB2

Figure 8: Post treatment radiograph showing bifurcated palatal canals
Testimonial:
The CS 9000 3D Extraoral Imaging System helps us better understand and strategize cases so that we can better ensure predictable outcomes. Knowing in advance the etiology and location of the extra canals allows for more comprehensive debriding, disinfecting, and three-dimensionally obturating entire canal systems.

Three-dimensional visualization of the complexity of canal systems gives the clinician remarkable insight and overcomes the diagnostic limitations of periapical radiographs.

Cone Beam CT multiplanar views in the maxilla are especially useful where oftentimes a shallow palatal vault may prevent ideal positioning of intraoral radiographs especially in posterior molars.

The clinical advantage to the treating clinician is paralleled by an obvious benefit to patients who can avoid unnecessary treatment procedures and the associated costs of both money and time.