

## CS 9300 System

# CBCT Verifies Palatal Root Fracture Prior to Proposed Sinus Lift

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### Case Overview

A female, aged 55 years, was referred for implant replacement of a maxillary first molar. The referring dentist recommended evaluation for a possible sinus lift prior to implant placement due to inadequate bone and evaluation of tooth #15. A periapical radiograph taken at a two month follow-up was included (see Figure 1).



Figure 1: Post-extraction periapical taken at two month follow-up. A sinus lift was recommended prior to implant

### Treatment Plan

A small-field Cone Beam Computed Tomography (CBCT) scan was prescribed to evaluate site #14 prior to implant placement and to evaluate tooth #15. The CBCT scan was taken with the Carestream 9300 with a 5x5cm field of view at 90  $\mu$ m. The CBCT clearly diagnosed a palatal root fracture on tooth #15 from the cross sectional and axial scan views (see Figures 2 and 3). The extraction was performed.



**Bradley McAllister, DDS, Ph.D**

Dr. Bradley McAllister has practiced the specialty of Periodontics in the Portland Metropolitan area since 1993, and has over twenty five years of experience in the surgical placement of dental implants and bone reconstruction. He is a board-certified diplomate of the American Board of Periodontology and the International Congress of Oral Implantology.

Dr. McAllister is currently a part time faculty member for the Department of Periodontology at the Oregon Health Sciences University, where he was previously the head of the departmental dental implant program. He was also the director for the departmental research program, which was focused on research related to implantology. Dr. McAllister obtained his Doctor of Dental Surgery in 1988 at the University of Washington, completed a residency in Periodontics in 1992 at the University of Texas Health Science Center at San Antonio, Texas, and obtained his Ph.D. involving research centered on techniques to improve surgical wound healing in 1993.





Figure 2

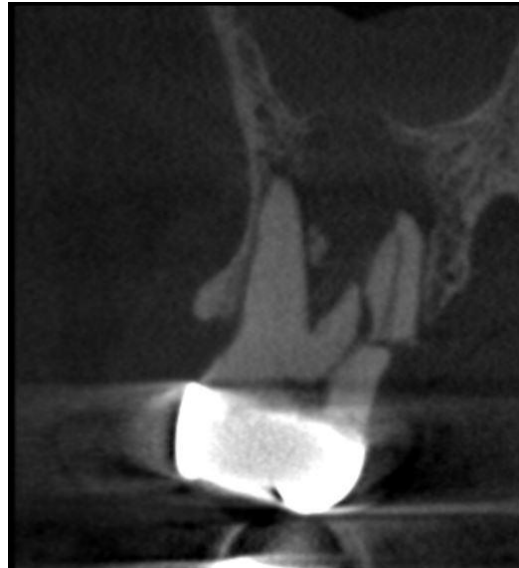


Figure 3

# Clinical Case Study

A post-extraction small field CBCT was acquired to evaluate the edentulous site for evaluation sinus health and for bone height prior to sinus lift and simultaneous implant placement (see figure 4). Measurements from the crest of the alveolar ridge to the floor of the sinus were taken at the sites of the first and second molars and were found to be 3.8mm of bone height and 4.8mm of bone height, respectively.

A sinus lift procedure was performed, and two implant fixtures were placed. A follow-up CBCT volume was taken one month later to check for overall healing, graft containment and sinus health (see figures 5 and 6). This scan demonstrated normal healing from all perspectives.



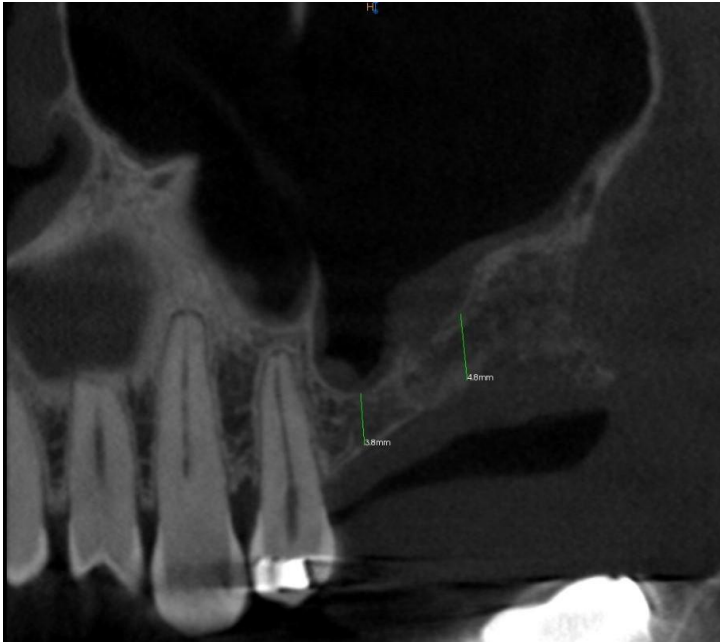


Figure 4

The patient went on to have the implants successfully restored once integration was clinically confirmed.



Figure 5



Figure 6



## Testimonial

This is a case which clearly demonstrates the value of 3D CBCT imaging in dentistry. A fracture which was not clearly seen on a traditional 2D radiograph and was not clinically evident was confirmed with amazing clarity using small field CBCT. Such an issue could have severely compromised the patient's initially proposed course of treatment.

In cases where traditional 2D radiography is uncertain or inconclusive, high resolution CBCT 3D imaging may eliminate any questions or variables, and should be considered to achieve the highest standard of diagnosis and treatment

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Clinical Case Study

