

## USE OF THE PREXION3D CBCT FOR THE IMMEDIATE IMPLANT PLACEMENT AND TEMPORIZATION WITH DEFICIENT BONE

*Sammy S. Noumbissi DDS, MS • Silver Spring, Maryland*

3D CBCT images are critical for accurate diagnosis and treatment planning in all implant cases and more importantly in complex cases where these images should be considered standard of care. Without CBCT images, this case would have been extremely difficult and risky, but using high quality CBCT images this case was effectively planned and successfully executed.

This patient is a 57 year old male who presented missing tooth #8, he stated he lost it over 20 years ago and never wore any type of prosthetic device to replace the tooth. Upon clinical exam it was obvious that there was a significant amount of bone loss, more so horizontally than

vertically. He was getting married in one month and wanted to have his tooth replaced with a fixed temporary in time for the wedding. He did not want a conventional three-unit bridge, rejected the idea of any metal in his mouth and resisted the idea of a removable appliance.

A PreXion3D scan was taken since 3D imagery was necessary in this case to accurately assess bone loss, loss of volume and structure in order to ensure the patient's expectations could be met. The Prexion3D DICOM (Digital Imaging and Communications in Medicine) files were imported into Anatomage's Invivo 5 software which was used to treatment plan this patient situation.

Evaluation of the 3D and sagittal cone beam images (Figs. 1 & 2) and clinical assessment of the patient's residual ridge anatomy (Figs. 3 & 4) showed significant bone loss



FIG. 1

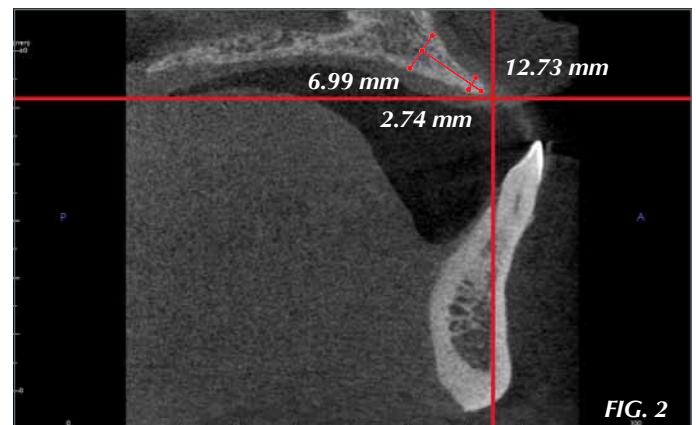


FIG. 2

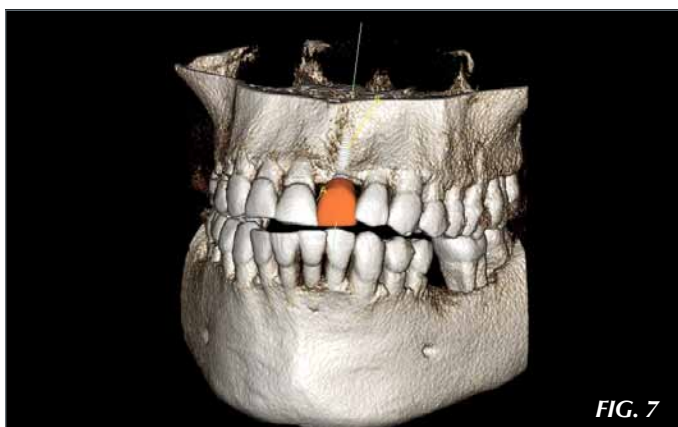
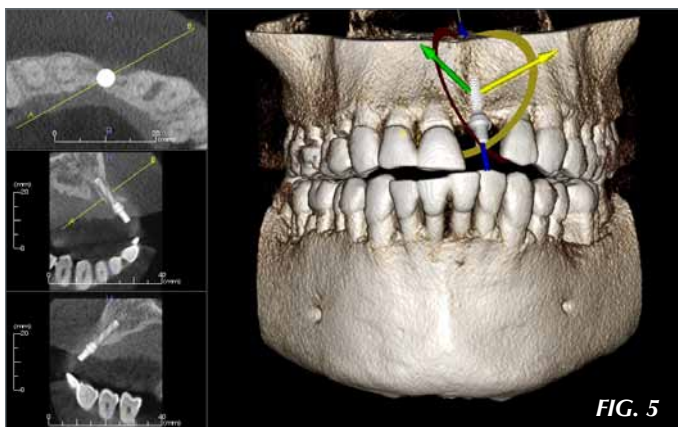


due to the long term loss of #8 and significant facial bone defect. These images clearly show there was limited bucco-lingual bone and that would definitely result in exposure of the implant threads. Furthermore, the sagittal view (Fig.2) also showed the ideal path of insertion of the

implant would be very close to the incisive canal.

Utilizing measuring tools from the software, measurements (Fig.2) on the sagittal slices revealed well over 12mm of bone for the length of the implant but bucco-lingually there was as much as 7mm of bone

width at the projected apical area and only 2.74mm at the ridge crest. Based on these measurements, the patient requests and the overall bone structure, it was determined to use a Z-look3 Evo one-piece Zirconia implant. Virtual implant placement planning was done by utilizing



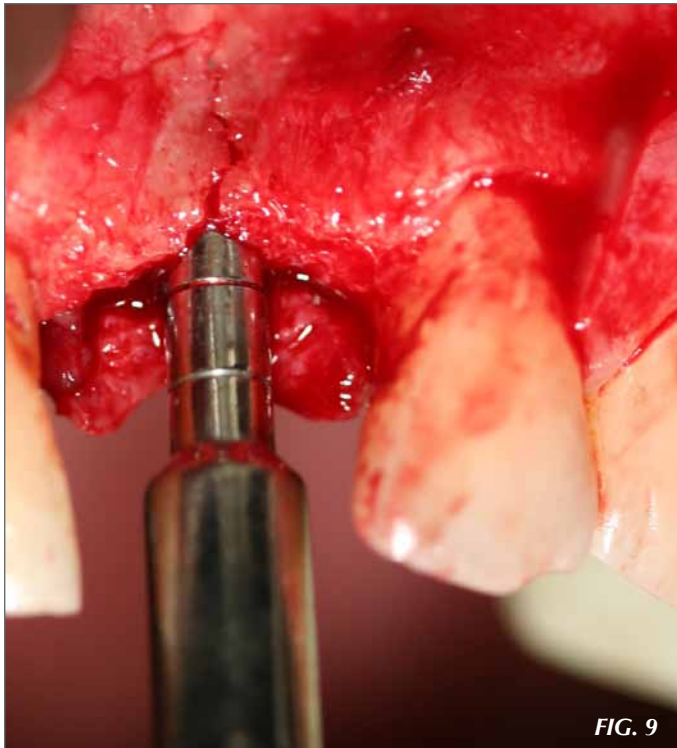


FIG. 9

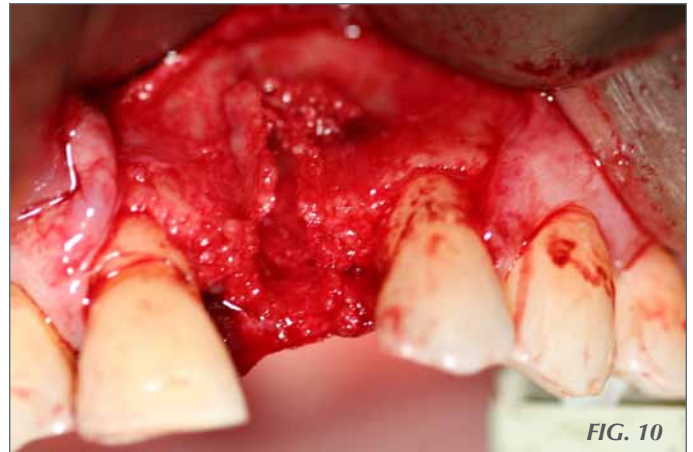


FIG. 10

InVivo 5 library of implant systems. A 4.0 mm diameter by 11 mm long with a 4.8 mm platform was selected. From the library a virtual tooth was selected, sized and placed (Figs. 6 & 7) to visualize how it would fit with the

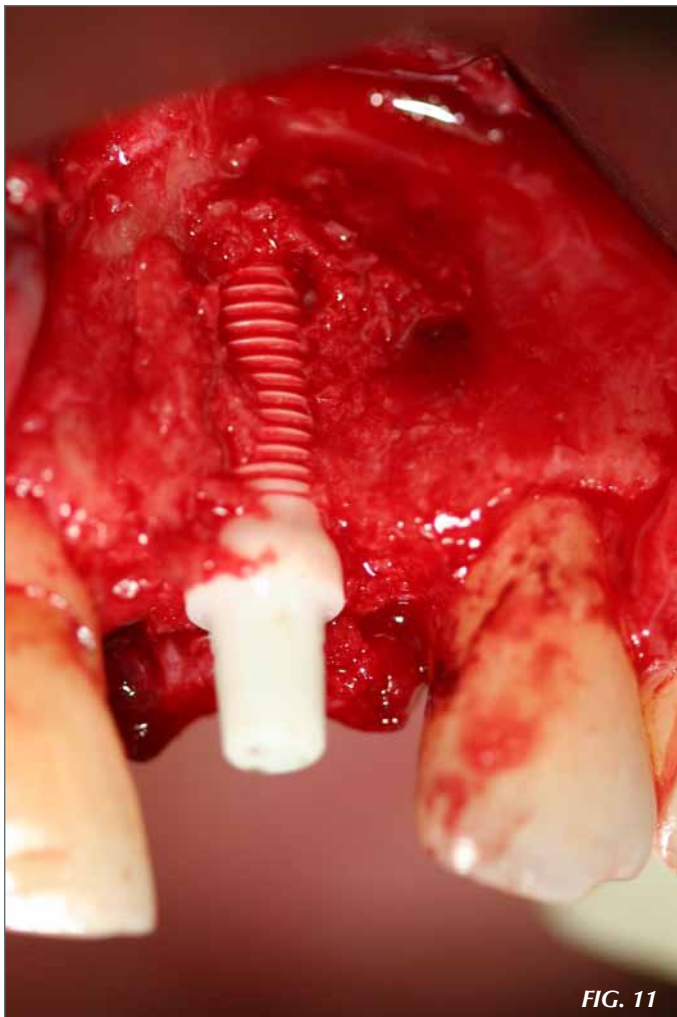


FIG. 11

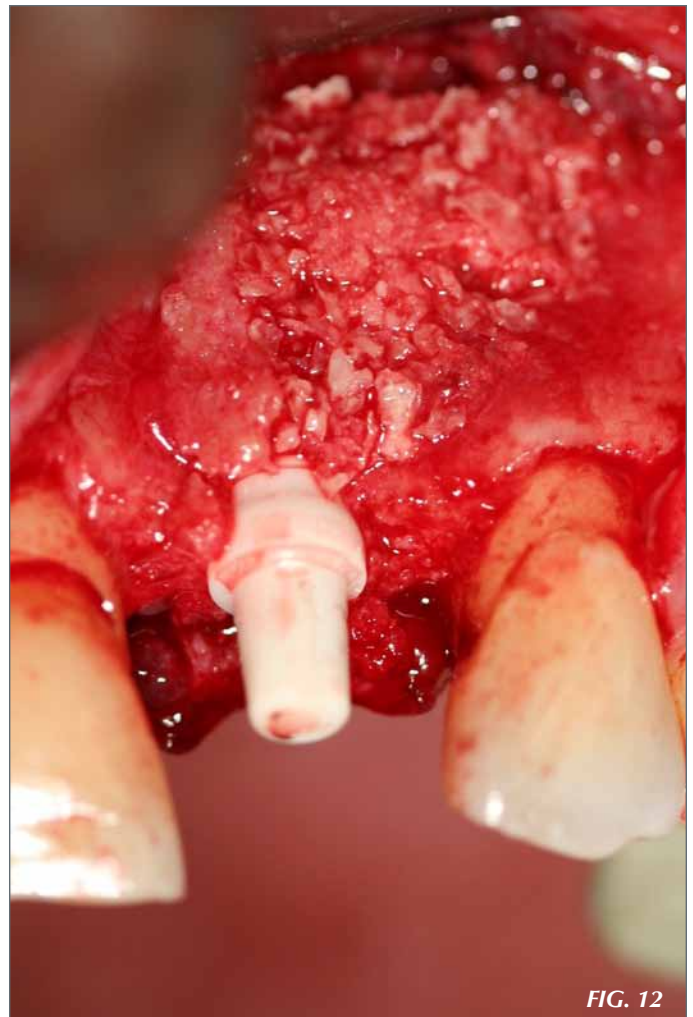


FIG. 12



FIG. 13

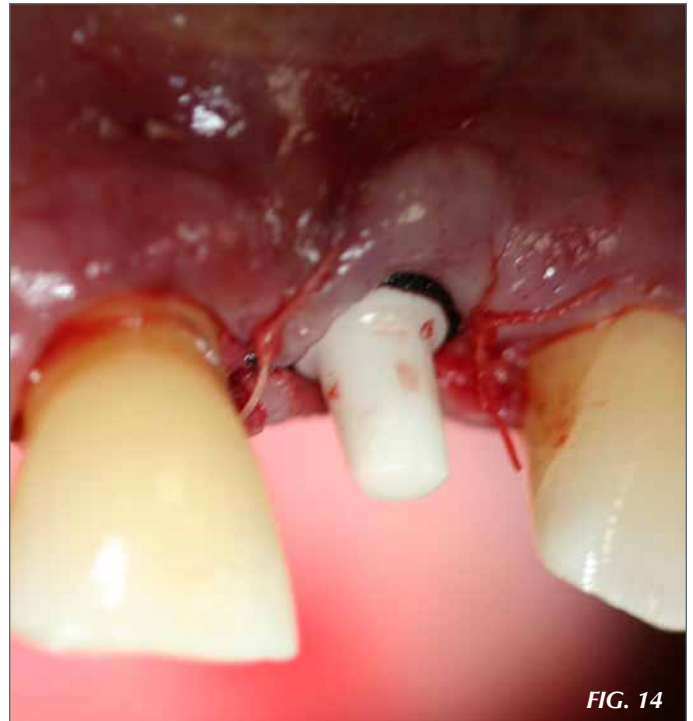


FIG. 14

implant platform and create a virtual visualization of the projected implant and temporary restoration.

With 3D imaging you can create sagittal cuts that show the long axis of the bone and where the implant will be placed. In addition to planning, the above work is used to create a CAD/CAM surgical guide as illustrated in Fig.8. Invivo5 software

processed the Prexion data and the virtual implant and prosthetic files created with the Invivo5 were used to produce the guide by means of stereolithography.

Due to the challenging implantation site, it was decided to use a graduated bone expansion technique (Fig. 9) using osteotomes in order to minimize drilling and

further compromise the residual bone, especially at the mid-buccal level. Bone expansion allows the implant to go in much tighter and allows for primary stability.

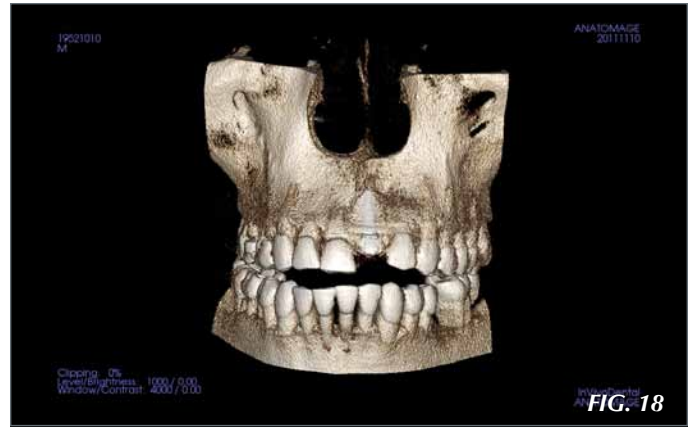
The expansion resulted in a “green stick” fracture of the bucal plate (Fig.10) which is not of much concern because healing of such fractures is very favorable. The



FIG. 15



FIG. 16



Zirconia Z-Look Evo implant was inserted at a speed of 20 rpm and torque value of 40 N/cm (Fig. 11) with excellent primary stability but leaving the buccal threads exposed as anticipated in the planning stage (Fig. 5).

Puros mineralized cancellous bone allograft (Fig. 12) was placed on the exposed buccal threads and

a resorbable collagen membrane was placed over the graft area (Fig. 13). The surgical site was closed with vicryl sutures and in order to reline the temporary crown to the abutment and implant platform, a size #2 retraction cord was packed around the implant to expose the margins (Fig. 14). Figs. 15 and 16 show the successful temporization of the implant; the temporary

crown was taken out of occlusion in extrusive and protrusive jaw movements as well as minor enameloplasty of tooth #23 and #24. Fig. 17 and Fig. 18 shows a 3D CBCT scan eight weeks post-op. Neither implant nor bone graft integration can be assessed at this time but both the implant and temporary were clinically stable. ◇

## ABOUT DR. NOUMBISSI



Sammy S. Noubissi DDS, MS obtained his Doctorate in Dental Surgery from Howard University College of Dentistry in Washington DC. After obtaining his DDS, he received formal training in implant dentistry and implant surgery while attending the three-year Graduate Dental Implantology Residency program at Loma Linda University earning

a certificate in Dental Implantology and a Master's of Science degree in Implant Surgery.

For the past 12 years he has limited his private practice to dental implant therapy and in the last five years has integrated three-dimensional dental imaging and metal free implantology. He is currently a lecturer at Wichita State University program in Advanced General Dentistry, founder of Miles of Smiles Institute for Dental Implantology, member of the editorial board of the Journal of Implant and Clinical Dentistry, and founding president of the International Academy of Ceramic implantology.

He has always been active in research and continues to be so in areas that furthers the science of Implant Dentistry. As a dental student he received a research grant from the National Institute of Health (NIH)/University of Texas Dental Branch and an award from the

American Association of Oral Biologist for his contribution to oral science.

His applied area of research is focused in the fields of hard and soft tissue reconstruction and implant integration to bone. His clinical research emphasizes the applications and benefits of zirconia dental implants and biomechanics in full mouth reconstruction with dental implants. He has published abstracts and articles in peer reviewed dental journals such as the Journal of Dental Research and the Journal of Oral Implantology and the Journal of Implant and Clinical Dentistry.

He lectures extensively all over the world on topics relating to diagnosis and treatment planning, the interrelation between implant surgery and prosthodontics, hard and soft tissue regeneration, and immediate temporization of dental implants.

# MARKETING YOUR PREXION3D

*Keith Bateman • Director Marketing, PreXion*

Historically, dentists have been opposed to “marketing” their practices. In the “old days” many state dental organizations imposed restrictions and/or prohibitions against advertising. There are still limitations by some state dental associations, but many of these have been and will continue to be legally challenged and altered or completely removed.

What dentists didn’t realize in the “old days” was that even though they were not advertising in newspapers, TV and radio, they were still marketing. They were marketing by having a good location, by trying to perform the best dentistry possible, taking care

of their patients and by providing clean, professional offices. And even by having a small brass name plate on their building or door (Fig. 1).

In today’s world, it is important, and I would even suggest critical,

to actively market your practice. During the recession over the past few years, the practices that have thrived are those that provide their customers with services and treatments they want and need and also those that are letting their community know about what makes their practice unique and attracting the type of patients that best fit their practice goals and objectives.

In a professional survey of dental practices I commissioned a few years ago, virtually all dentists questioned believed they were doing a good job of differentiating



Fig. 1



Fig. 2

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Fig. 3

their practices. The problem was the majority of them were differentiating their practices in exactly the same way, i.e. by having good patient relationships. But what is the effect of this differentiation if everyone was doing the same thing? I regularly receive mailings from dentists in my area and all of them are promoting the same things, i.e. reduced or free exams or whitening.

The bottom-line is that you need to be marketing your practice and you don't need to be afraid, marketing is not dangerous nor for "experts only" (Fig. 2).

When marketing your practice and specifically the PreXion3D, there are some basic guidelines to follow that I have learned over two decades of marketing

experience and helping dentists grow their businesses.

The following are some key steps for you to follow:

- 1) Planning
- 2) Consistency
- 3) Consistency
- 4) Keep doing it!
- 5) Don't Stop
- 6) If what you are doing isn't working, change it
- 7) Be brave
- 8) Invest

You have proven you are a progressive dentist that cares deeply about your patients with your PreXion3D, advanced training and also with your other state-of-the-



Fig. 4

art technologies and services. Make sure all of your current patients are aware of the investments you have made to provide them with the best care possible. You can accomplish this by providing your patients with informational brochures, mailings, newsletters, etc (all included in your PreXion360 Marketing Guide) and most importantly by making your PreXion3D as visible as possible to everyone that comes in your office. Use the PreXion3D on as many patients as clinically responsible and make sure you spend some time sharing the clinical importance and advantages of the images with them. The most consistent comment I hear from PreXion customers is the wow factor when patients see the high quality 3D images, and they are telling their friends about this. You may also want to consider printing out some images for your patients to take home and it is certain they will show them to others.

It is also critical to educate all of your staff on the many benefits of your cone beam system, everyone in your office should be scanned. They need to understand "Why 3D" and share their excitement with the patients they work with every day. I recommend you regularly include updates about the benefits of your PreXion3D in your staff training sessions to keep them up-to-date and build their CBCT knowledge.

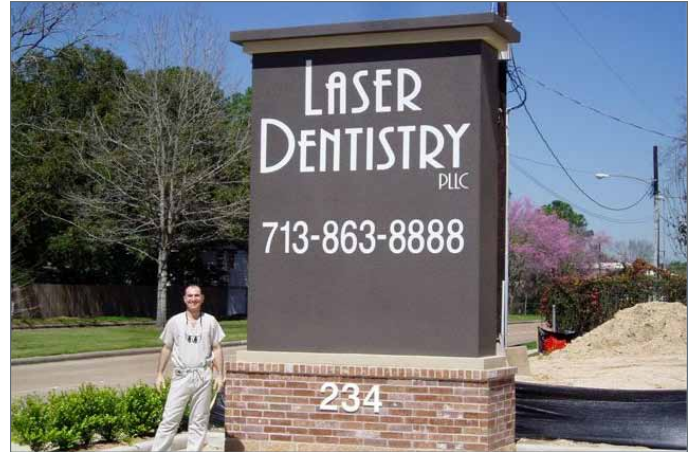


Fig. 5

One of the most aggressive marketers in dentistry today is the ClearChoice Dental Implant Centers. They use a broad range of TV, radio, print, web and other advertising venues and they ALWAYS talk about their "3D Dental CAT Scan" in all of their advertisements (Fig. 3). ClearChoice has obviously spent millions on marketing and research, so I'd suggest you try to emulate elements of their marketing that are appropriate for your individual goals and objectives.

Whenever possible you should also consider integrating important clinical services into your practice name, signage and even the building itself. Figures 4-7 are examples of practices around the country that have creatively used unique signage to differentiate their practices.

Following are some additional ideas to consider raise the visibility of your practice:

- Mailings, health shows, speaking engagements about PreXion3D Dentistry
- Sponsoring movie premiers that would attract your ideal patient
- Become the local implant/3D CBCT dentistry expert and speak at functions such as Chamber of Commerce, club meetings, schools, etc



Fig. 6



Fig. 7

- Radio programs
- Hire a PR expert – you can often do this on a per placement basis
- Local Media, newspapers, magazines, radio – do an open house and/or provide treatments or free 3D scans for your local media/reporters
- Articles and/or advertisements in Regional Media, newspapers, magazines, radio, & TV news coverage
- National Media, newspapers, magazines, radio & TV news coverage

In summary, marketing is an integral part of our world and PreXion is committed to helping you grow your practice. Your PreXion3D system is not only an important diagnostic and clinical tool, but can be a powerful marketing advantage. Make use of your PreXion360 Marketing Guide and tools and let us know how we can continue to improve. ◇

# PREXTIPS

'T' for text tool for labels on images...

A quick tool to add a label/annotation to an image is via the 'Text' method.

First click the letter 'T' on the keyboard. Next move the I-cursor to

any selected area on the screen. Left click and key in the label and then press the Enter key. The label itself can be dragged to any location or right click to Edit font size and color. Also to capture to the Output tab at the

upper right press the letter 'C' on the keyboard to load to Output. Select any option available at the Output tab to save, print or e-mail if setup. ◊



Fig. 1

If you need additional assistance with this procedure, call us toll free at 1-855-PreXion.

# INTERVIEWS

*Seth Murphy, DDS • Anchorage, Alaska*

## **Dr. Murphy, can you tell us about your practice and your interest in 3D CBCT Imaging?**

I practice in Anchorage with my father George, who has practiced in Alaska for 40 years, and my brother Shane, in Murphy Family Dental. We run a progressive general practice and offer a comprehensive menu of clinical services including periodontal procedures, extractions, endodontics, crown and bridge, CEREC and over the past several years we have been growing our dental implant business.



## **How did you get into the implant business?**

Shane worked for an oral surgeon during dental school, did an implant preceptorship under Dr. Daniel Cullum in Coeur d'Alene, Idaho and does lots of surgical procedures. I completed a Fellowship with the International Congress of Oral Implantologists ICOI and studied under Roland M. Meffert, DDS at The University of Texas

Health Science Center at San Antonio Dental School. Dr. Meffert was a great mentor and served as Director of the Postdoctoral Program in Periodontics and as Chairman of the Department of Periodontics at Louisiana State University and recently passed away last March.



## **Tell us about your 3D CBCT evaluation process**

We spent over a year researching various CBCT systems and determined that we wanted a system that provided high quality images, had powerful software, was user friendly and also provided a chair so patients could be seated. We had no need for a separate panoramic system since we planned on keeping the system we had

in our practice that we share with some pediatric dentists.

In October Shane met with a PreXion Regional Sales Manager (RSM) at the ADA meeting in Las Vegas. We also talked with some current PreXion3D owners including Dr. Spencer Wirig in Coeur d'Alene and Dr. Jay Marley in Homer, Alaska and both gave very positive reviews of the PreXion3D. Our system was installed in late October and we were trained in early November and have started implementing the system into our practice.

## **How do envision 3D CBCT will impact your practice?**

It has already improved our diagnostic capabilities and treatment planning for abscesses, root canals, perio and of course implants. It will increase our rate of case acceptance and will help us stay ahead of the other practices in our market. It will also help us feel more comfortable doing more difficult and complex implant cases that would have been referred out in the past. We have placed the high tech looking scanner in a glass room in the front of our practice so it is very visible to our patients. It will definitely have a positive economic impact on the bottom-line of our practice. ♦

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## ***ABOUT DR. MURPHY***

*Seth Murphy practices in Anchorage, Alaska with his father George and his brother Shane. Dr. Murphy obtained his Doctor of Dental Surgery in 2007 from the University of Texas Health Science Center, San Antonio Dental School. He is a member of the American Dental Association, Alaska Dental Association, the Academy of General Dentistry and has his Fellowship from the International Congress of Oral Implantologists.*