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XCPT® (Accept) Software: The Future of Case-Analysis and Patient Acceptance of Treatment Planning

Patient satisfaction with dental implants should be an essential element of all practicing clinicians' diagnoses and treatment plans;^{1,2} therefore, **Nolen L. Levine, DDS**, recommends the addition of XCPT® software to implantologists' armamentaria.³ Levine defines XCPT as "a unique annotation software that digitizes analog radiographs or captures any digital radiograph, whether it be a panoramic, periapical, single periapical, or CT scan. It gives the dentist the ability to annotate the image and to place a variety of objects, crowns, Post-it-Notes, implants, abutments, and bone grafts to explain to the patient exactly what the doctor sees."

Levine describes the software as "an on-the-spot consultation tool that builds trust and saves time because the patient immediately grasps the ideas being presented." He adds, "Imagine a treatment plan clearly portrayed in a visually convincing way, built upon X-rays or even the patient's photograph." It's this kind of tool, Levine says, that can result in dramatic increases in patient acceptance of—and satisfaction with—dental implant treatment.

XCPT Software: Origins and Specifications

Steven J. Feldman, DDS, created XCPT because he wanted to help his patients have a better understanding of treatment plans he devised for them. Since he first began using the software in 1999, Feldman has witnessed how positively patients have responded to his treatment recommendations because they have a keener understanding of exactly what he is proposing. Naturally, Levine points out, as patient understanding increases, so does the trust and, consequently, acceptance of treatment.

As a result, there is a corresponding increase in productivity for the dental office. Levine says that Feldman's productivity increased by one-third since he began using the XCPT software.

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The software's acronym, in fact, is a reflection of the patients who "accept" the dentist's recommendation. Users of the software attribute greater acceptance to the fact that it produces a real-time, visually perfect analysis of the patient's condition.

Installation of the software, Levine says, is not complicated, and the product is relatively easy to learn and to use. Levine explains, "The company provides a comprehensive start-up guide, and a technical support team is available to help the dentist and office staff get started." Because XCPT easily adapts digital X-rays, no importing or exporting of digital files from other programs is necessary. The interface for the program is designed to be very user-friendly, so staff members with only beginner computer skills can apply the software's features, usually with only several mouse-clicks.

As a state-of-the-art drawing tool for dentists that supports both analog and digital X-rays, XCPT can help maximize office productivity by streamlining its processes. The sequencing of treatment planning proceeds logically, Levine explains, and the dentist can adapt the sequence, customizing it to fit his or her idiosyncratic planning methods. Because the software is expandable, the dentist or staff can add images and implant systems easily, as well as combine radiographs and color photographs into a single document. The system can share documents with any system that uses JPG image format, including word-processing programs and e-mail. Other features include the ability to magnify images and make them transparent. Finally, Levine says, the software complies completely with the Health Insurance Portability and Accountability Act.

According to the XCPT web site (www.xcpt.com), XCPT is both "hi-tech and low-maintenance." The system is menu-driven and image-

driven, and can provide live rendering of crowns, abutments, implants, and attachments.³ Not only is an object gallery provided, but users also can create, save, and manage personal objects. The software provides quick font management and in-line text editor. The system employs a patented technique for document viewing to enhance visibility, and supports single or multiple users on a network. The system requirements are not complicated: 1.6 GHz Pentium/AMD Processor (2 GHz or faster recommended), a minimum of 256 MB of RAM (512 MB or more is recommended), at least 1 GB of storage space, and a simple digital camera or flatbed scanner with color transparency adapter.³

Levine explains that Network Attached Storage (NAS) is a device that stores XCPT files on a network without interfering with other running programs. XCPT updates and new releases can be obtained by visiting the web site. Downloading and installing new versions of the software can be done while preserving patient data, treatment plans, and gallery objects.

Levine encourages dentists to visit the XCPT web site because it provides a gallery of screen shots of the XCPT Program. The gallery is Flash (animation)-driven, and features examples of program-enhanced X-rays. The site also contains Flash-driven tutorials, with movie-files covering Setup, Using a Digital Camera, Scanning, Drawing, Custom Notes, Cosmetics, and Treatment Planning.

Gauging from his staff's use of the product, Levine found that the simplest level of skill—that is, bringing the image in, drawing a little bit, and bringing in different objects—takes about an hour to learn. "Because most clinicians want more advanced skills," Levine says, "it probably takes about two or three hours to master, unless the clinician is very computer-savvy, then it

would only take about an hour." Recently, the program was shown to a chief resident at a dental school. The resident's first impression was that the system would be hard to learn, but after using it just one time, she then taught a faculty member how to use it. "So," Levine notes, "that's a pretty quick learning curve."

Because the cost of XCPT is about one-fifth the cost of buying a digital system, Levine says "digitizing" of the analog dentist by using XCPT is easier. Dentists can also use the system to file clients' insurance claims electronically.

The XCPT Consultation Process

As a diagnostic and treatment planning tool, XCPT allows both the dentist and patient the opportunity to discover and discuss the best solution and treatment options. "By using periapical, Panorex, or a CT scan," Levine explains, "the software gives patients a wide variety of options to see what the dentist sees. Because this works equally as well with both analog and digital X-rays," Levine adds, "the software can help digitize the nearly 85% of dentists who are still analog."

The software uses digitization technology to convert X-rays and digital photographs to a file with no compromising of image quality. Once converted, the images can have graphic changes added to show where crowns and implants will go, as well as how cosmetic work can enhance aesthetics. Notes describing the plan and treatment outcome can be added to the image also. The patient and dentist can work together to create a treatment plan based on images taken from the patient himself. Because the patient's own anatomy is the source of images and their graphic manipulation, the patient can quickly assess the efficacy of the plan.³

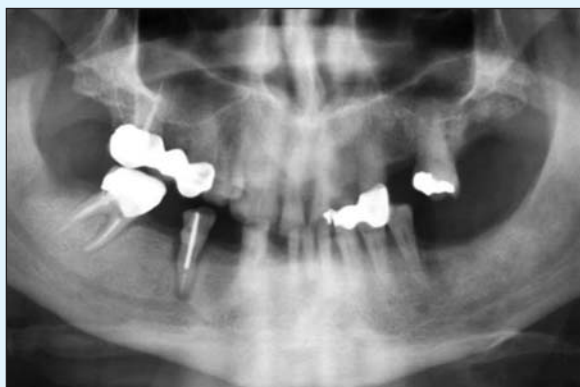


Figure 1: XCPT before treatment plan.

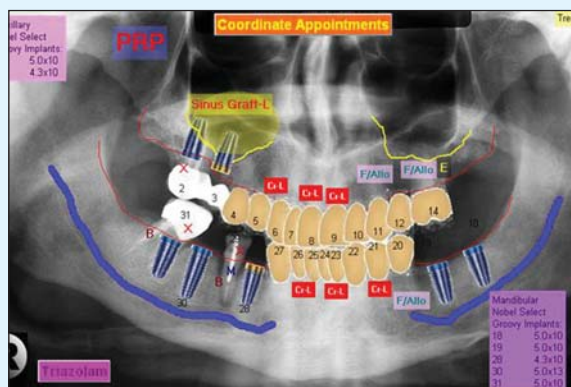


Figure 2: XCPT after treatment plan.

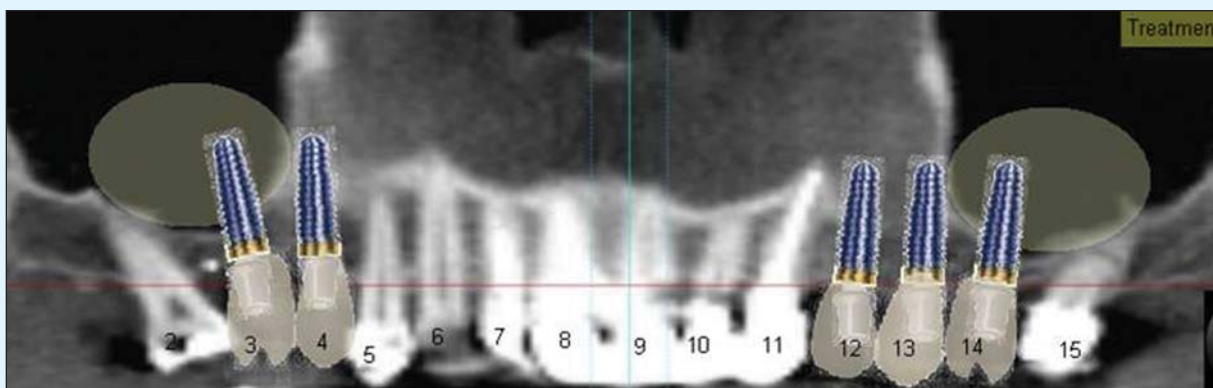


Figure 3: CT scan modified using XCPT.

Levine describes the typical process: "The patient comes in and radiographs and photographs are ordered. The system will take the photographs and also take a Panorex or a CT scan if ordered. Once the package of materials is assembled, the images are brought into XCPT within seconds and files are produced. Individual files are made out of all those items, or parts of those pictures can be taken and pasted in a collage on one file." From those images, any number of things can be done. For example, directly on the photograph a clip can be cut or removed, and a smile can be redesigned, then these items can be glued or embedded into the

images.

The software also employs a number of timesaving features, including the ability to incorporate business cards, addresses, and e-mail information directly on the image.³ Insurance carriers who require copies of radiographs can be sent the information electronically. Additionally, the software can be used to reference later appointments and schedules. Because the image can be imbedded with so much diverse patient information, other charts and paperwork can be eliminated.³

Levine notes, "When the patients come in and we take a Panorex, periapical, or CT scan, the assistant

takes about 25 seconds to add the patient's name to the file." The assistant then annotates the teeth. At this point, Levine says, the patient is almost immediately captivated because this work is being done on the patient's own X-rays.

All other software programs designed for patient consultation use an artificial mock-up or cartoon to represent the patient, but the XCPT software uses the patient's own X-rays. Levine notes, "Patients are not interested in being educated in terms of dentistry as much as they want to be educated on precisely their own needs, so the consultation on their own X-rays is very compelling."

Levine adds, "The capacity for annotating problems and solutions is tremendous. The patient gets to see the doctor's wisdom and problem-solving skills."

XCPT Results

Levine says that the patient consultation becomes a process of co-discovery. He says, "We all went to dental school and learned how to read X-rays. By using the software format, we digitize the analog X-ray or transfer a digital X-ray so that the patient can see the same thing we see. In this way, the patient becomes very interested in the problem, and the solution to that problem." The patient, Levine insists, wants to know what is wrong and that the dentist knows how to fix it. The patient no longer has to take a leap of faith since he or she actually sees what the dentist sees. This shared vision creates trust. As a result, the patient becomes more relaxed and much more comfortable about decision making. The dentist sees the patient anxiety reduced.

Levine notes, "My case acceptance rate prior to using XCPT was probably 75%-80%; now, it's probably in the high 90s. More importantly, people tend to do more work because we don't have to focus on the one chief complaint." He explains, "Before I used the software, a lot of people would accept treatment because something hurt them or was broken, and that complaint was a foot in the door. Now I go over everything and show them on the X-rays and photograph what they don't feel." Patients quickly realize, he says, that sometimes what they don't feel is worse than what they can feel.

According to a colleague who uses the software, patients frequently say, "Nobody ever showed me this before." The reality is that dentists have been showing or at least trying to show patients the problems and solutions, but often failed at this twin task. "With the

XCPT software," Levine says, "we allow the patients to actually see the conditions for themselves through the process of co-discovery. Additionally, I feel that patients are more enlightened and more relaxed if they know what we are doing and why we are doing it. The software really does allow us to get our message across because the patients are more engaged in the whole process." One of Levine's colleagues jokingly says that he knows he has had a good day at the office when he sees patients' fingerprints all over the computer screen because they kept pointing at the figures and annotations.

The software plays an important role in the dynamics of the dental team approach as well. Levine notes, "I don't think my referring dentists could do without the software anymore either. Most of them are using it now and, more importantly, if I didn't use it I don't think we could communicate as well." He adds, "Once I create the consultation images and consult with the patient, I immediately refer to the consultation images in the letter I e-mail to my colleagues. E-mailing is easy; there is an address book inside the program, and it works on a database inside the program with Microsoft Outlook Express."

Conclusion

Levine emphasizes the importance of XCPT software by referring to a medical study showing that patients who don't receive visual imagery during the presentation of a treatment plan retain only about 14% of what they were told after leaving the office.⁴ However, doctors that use a compelling visual aid enable patients to retain about 80% of what they were told, regardless of how fearful they were.

XCPT software provides a method of diagnosis and treatment planning that uses the patient's own X-rays and photographs to create a visual experience that builds patient

trust while saving time for both the patient and dentist. Its image annotation and X-ray digitization technology provides a simple, visual method for case analysis and treatment planning.³ According to Levine, using the XCPT software reduces anxiety, builds trust, and creates awareness; in addition, results are legible, reproducible, and transmittable. The software also fulfills informed consent requirements.

Levine concludes, "Dramatic results for a case—growing soft tissue and bone, placing implants, and literally reconstructing a patient—cannot even begin unless we have the patient at a point where he or she says 'yes.' What XCPT does is to allow the patient to see his or her problem and watch the dentist solve that problem, to see the wisdom of his work and his knowledge."

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