Basic information on the insertion of miniscrews

Preparing for insertion

The insertion of a miniscrew is a very simple and rapid therapeutic measure. Although there are several methods that will yield good results, successful insertion requires adherence to a few important steps.

A procedure using stem cells may provide a more thorough regeneration of periodontal tissue around dental implants, according to a new report published in the Journal of Oral Implantology.

Dental implants closely resemble natural teeth, but an implant’s ability to react to patient growth, pressure from chewing and future orthodontic work is diminished if it is not surrounded by sufficient periodontal tissue. In this study, the authors engineered this periodontal tissue in a fresh socket of a goat animal model.

Each of five goats was fitted with two titanium implants immediately after tooth removal. A polyDL-Lactide-co-Glycolides scaffold was fitted around each implant, but the control received only the scaffolding. The experimental implant received scaffolding seeded with bone marrow–derived mesenchymal stem cells (BMSCs). All implant sites showed some level of tissue development at 10 days after the operation. At one month after, the control side showed no signs of tissue development, whereas the experimental side had developed cementum, bone and periodontal ligament, the three tissues required for regeneration of periodontal tissue.

Past studies have demonstrated positive results with BMSCs in periodontal defects around natural teeth. Others have shown promising results without BMSCs, using pro-

Stem cells may improve the adaptability of dental implants

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ICOI headed to Vancouver

The International Congress of Oral Implantologists will host its World Congress XXVI from Aug. 20-22 at the Vancouver Convention Centre in Vancouver, Canada.

Here is just a small sampling of speakers and topics to be featured at this event:

• Dr. Lyndon Cooper: “Dental Implant Function and Occlusion – Risk and Benefit”

• Dr. Scott D. Ganz: “The Impact of Digital Dentistry on Prosthetic Paradigms”

• Dr. Jack Krauser: “Guided Implant Surgery – The Good, The Bad and The Ugly”

• Dr. Edwin A. McGlumphy: “How Fast Can We Go? Ohio State Implant Clinical Trials: What We Have Learned About Early and Immediate Loading”

For more information about the event, see www.icoi.org, where you can register online and learn more information about schedule and hotels.

(Source: ICOI)

Avoiding the pitfalls of implants with 3-D imaging

By Terry Myers DDS

Once only a solution for the rich and famous, dental implants have become a popular option for people across all economic categories. Along with the popularization of this procedure, while implants were usually delegated to specialists, technology, such as in-office cone-beam scans and digital imaging allow general practitioners to offer this type of service while also avoiding the pitfalls that result from a lack of precise information.

Research illustrates both the growing popularity of implants and the increasing desire of general den-

INDUSTRY TRENDS

By Terry Myers DDS

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Research illustrates both the growing popularity of implants and the increasing desire of general den-
tists to provide their patients with this procedure. A recent survey cites that 19 percent of general dentists have placed implants for three years or less. Many practitioners want to add this procedure as a response to requests from their patients. The study also showed that 77 percent of general practitioners said the number of patient inquiries about implants in their practice has increased during the last three years.

For the general dentist, the proper technology can reduce stress and expand the comfort zone, as well as increase the safety and comfort of the patient during implant planning and surgery.

A successful implant surgery is dependent upon many details, a majority of which are hidden beneath the gingiva. A 2-D X-ray or pan cannot discern certain anatomical conditions of the dentition that may determine the direction and scope of the treatment plan. Without a 3-D scan, the dentist needs to devise several “just-in-case” options, to provide for the various possible scenarios taking place under the gum tissue. While this may seem to you like “covering all bases,” it may decrease the patient’s confidence in your diagnostic ability.

A comfortable and positive experience will determine whether you retain a loyal patient or get bad press among his/her friends.

Beginning an implant without a 3-D scan is like trying to navigate through a dark room without a flashlight. You are sure to bump into something that will stop your progress. A 2-D pan alone cannot clearly establish the dimensional shape of the bone. Without the exact measurements of the width and height of the bone provided by the cone-beam image, it is likely that you may flap back the tissue only to find insufficient bone to support an implant. The patient ends up with pain, stitches, and an additional appointment to complete the next stage.

Besides the amount of bone, the 3-D scan avoids other possible obstacles to a successful implant. The ability to view abnormalities of the roots, the tooth’s proximity to adjacent teeth, supernumerary teeth and the proximity to the nerves and sinus provides valuable insight, avoiding surprises once the surgery is underway.

The cone-beam scan improves patient communication, avoiding misunderstandings and improving patient acceptance. Back to the survey scene, more than 98 percent of those surveyed were involved in patient education on implants. Education is easy with a 3-D image. The dentist can point out the possible trouble spots on the 3-D model, slicing, rotating, enlarging and exploring the patient’s dental anatomy from all angles.

Whether you are a general dentist or a specialist, no one wants the stress of a possible failed implant, or a disappointed patient.

In conjunction with 5-D imaging, many surgical guides are available that provide even more direction during the surgery, and 2-D digital images taken during the surgery can offer a quick check of drill lengths and placements.

While success in any surgical endeavor cannot be totally guaranteed, having all of the facts before hand does stack the odds in your favor. With cone-beam technology, general dentists can keep their existing patients in-house, attract new patients and expand their dental horizons. There’s no need to do surgery in the dark because 3-D imaging is available to shed light on all the pertinent facts.

Severe buccal destruction easily detected on a 1-D cross-section, from Cone Beam (GXCB-300), and successful implant placement verified by a digital X-ray (DEXIS).

The undercut mandible as seen in 3-D prior to surgery.

3-D reveals narrow ridges and provides precise measurements for safer placement.