

## New opportunities for general dentists

# Using synthetic bone for hard tissue replacement

*Immediately place fixed prosthesis after ridge augmentation*

By: Ronald E. Groba, DDS



The introduction of synthetic bone for hard tissue replacement has opened many new opportunities to the general dentist. You don't have to be an oral surgeon or periodontist to utilize these materials in your daily practice. Specialists are using these materials daily with much success in regard to lost bone around perio defects. They are used with or without bio resorbable materials. They are used to augment ridges and to fill in defects after root amputation (apicoectomies). We have used these materials successfully for over 15 years.

Currently we are using two materials—Bioplant HTR, a slowly absorbable micro porous synthetic bone material and Osteograft N-300, a bovine derivative. Bioplant HTR is a multi-layered granule, the inner most layer of polymethacrylate and a middle layer of polyhydroxyethylmethacrylate with an layer of barium sulfate for radiopacity, and an outer layer of calcium carbonate. Osteograft N-300 (Ceramed-Dentsply) is an inorganic bone matrix material derived from cows. It is also described as a micro porous resorbable hydroxyapatite that is similar to human cancellous bone. Osteograft N-300 has been shown to be an effective substitute in sinus lifts and in conjunction with implants.<sup>(1, 2)</sup>

Bioplant Inc. introduced Bioplant HTR in 1992. Bioplant HTR is slowly absorbable and promotes bone and rapid soft tissue healing. It does not require a barrier membrane. It has been used successfully to repair periodontal defects, in apicoectomies, ridge augmentation, around implants or for post extraction socket grafting.<sup>(3, 4)</sup> It is this latter use that primarily concerns the general dentist. I know of one dentist that considers it malpractice to extract most teeth without socket grafting and augmenting the ridge. If the patient declines this procedure, he will usually refer them out! He says that he can't morally live with leaving huge defects in the alveolar structure. Bioplant HTR has a very nice PowerPoint presentation showing you how to augment ridges, etc. on their website at [www.bioplantht.com](http://www.bioplantht.com). Download for a step-by-step presentation and suggested fees.

My office explains the benefits of socket grafting and augmentation after extraction and leave it up to the patient. We get almost 100% case acceptance. We simply explain how preserving the ridge benefits the patient such as greatly reduced bone shrinkage, great esthetics, almost no post-op pain, dry sockets or bleeding. We show them models and x-rays of how the jaw shrinks after extracting the teeth.

This procedure is especially useful in augmenting the ridge almost completely after third molar extractions especially in the mandible. Bone fills in very nicely around the remaining second molars. It is also very beneficial around anteriors to preserve ridge height for cosmetics or around posterior sites that you are going to place a fixed prosthesis. Gum shrinkage around pontics is practically eliminated and gum and perio pockets are reduced significantly.

Recently, we have been performing an extremely beneficial service for our patients who need a fixed



Before extraction

Two weeks after extraction

bridge after extraction. The following is a step-by-step procedure the general dentist can easily perform. We have been performing this procedure once or twice every month. Just recently, a patient of mine had a hopelessly involved first molar-perio. He needed the molar extracted and wanted a permanent fixed replacement. We discussed socket grafting and ridge augmentation with immediate replacement and he accepted the treatment. After anesthetic, we removed the diseased molar, curetted the socket, placed

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Bioplant HTR into the socket after wetting the Bioplant with blood from the socket. We pressed it firmly in place. The new Biotip at the end of the syringe makes this easy. We placed Biofoil Oral Bandage over the sutured area for added protection.<sup>(5)</sup> We covered the socket with Surgicel (Johnson & Johnson) and cross-stitched with silk sutures. After a few minutes to allow clotting, we prepped the abutment teeth. We had previously taken an Impregum 3M impression to fabricate the provisional bridge and for the Laminar Impression Technique.<sup>(6)</sup> After prepping the abutment teeth, we fabricated the temporary bridge. We then packed cord and took the final impression. We covered the extraction site with Biofoil and a little bit of Vaseline to prevent opening of the sutures and the pulling out of the Surgicel. The final impression was taken utilizing the Laminar Impression method. The final bridge was cemented into place two weeks later. We had the lab technician deepen the extraction site approximately 1.5mm to allow for a small amount of shrinkage. If you don't get much shrinkage, you can adjust the pontic prior to seating. If you get abnormal shrinkage, you can have additional porcelain added to the pontic. This becomes less of a problem as you gain experience, as very little shrinkage takes place after using Bioplant HTR.

The benefits of this technique are numerous—no long period of healing without a tooth. No temporary thumb plates! You can have fixed temporaries and permanent replacement in about two weeks. Not to mention the added revenue and the benefit to the patient. Currently practitioners are charging for extraction and grafting of the socket 500 or more per site and charging less for multiple sites. The entire procedure can be accomplished in less than one and one half hours and can generate revenues of up to \$3,000 for a three-unit case. This is a win-win procedure for all concerned. **DT**

Dr. Ron Groba has lectured internationally on all aspects of smile makeovers from bleaching to full cosmetic veneers. He is a member of the Houston District Dental Society, the American Dental Association, the Academy of General Dentistry, and the Academy of Cosmetic Dentistry and has lectured at the University of Texas Dental School in Houston. If you have any questions, please call Dr. Groba at 281-482-9040 or fax me at 281-482-1432.

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