



BONE GRAFTING WITH STEM CELLS

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Placement of Dental Implants

The placement of dental implants into the appropriate position relies on the adequacy of the underlying bone structure. As we know, the final restoration dictates

the implant placement but often we are faced with situations where the bone quantity is deficient. The days of the mentality "we put the implant where the bone is" are (thankfully) behind us. As we examine patients as potential implant candidates, one of the many factors we consider is the underlying bone volume.

This can be measured clinically and radiographically, but most accurately with Cone Beam CT Scanning. Patients who had significant underlying infections or who have been missing teeth for a sustained period often are lacking bone volume. It's quite common for

us to see bony defects in pontic areas of long standing bridges, and congenitally missing teeth as well as teeth that have had destructive periapical and radicular infections.

Bone Defects No longer Affect Placement

At **Falls Oral Surgery**, we have been able to reconstruct many of these bone defects with the aid of the newest regenerative techniques. Most recently we began using a stem cell based regenerative graft in combination with Plasma Rich in Growth Factors (PRGF) / Platelet Rich Plasma (PRP). By using the stem cell based product called OsteoCel, we are able to spare the patient a second surgical site (donor site). These donor sites had previously included the anterior iliac crest, proximal tibia, mandibular ramus and symphysis. Each of these sites carried with them significant postoperative morbidity.



OsteoCel Safety Profile

- Aseptic tissue processing
- Antimicrobial treatment of tissue
- Sterility cultures performed on every lot
- Selective immunodepletion process
- No evidence of ectopic tissue formation or inflammatory cellular response



What is OsteoCel bone grafting material?

OsteoCel is an allograft cellular bone matrix that retains natural stem cell and osteoprogenitor cells. This material is both osteoinductive and osteoconductive and closely mimics a natural autograft. In order to maintain its viability, it is maintained at -80 degrees C in a specialized freezer we have in our office. The safety of OsteoCel is well documented with regards to disease transmission, and sterility.



What is PRGF/PRP?

PRGF is used to stimulate a patients healing through autogenous blood donation and isolation of growth factors which encourage tissue healing. It's procured by obtaining a small sample of the patients' own blood and spinning it down in a centrifuge. We are then able to isolate the platelet rich layer which houses most of the growth factors responsible for wound healing. This layer is then mixed with our grafting material at the time of surgery.

Results of Osteocell and PRGF

Case Study:

A middle aged otherwise healthy female was sent to our office for removal of her failing bridge. She was interested in replacing her existing, failing bridge with dental implants and was strongly opposed to long-term removable options. The bridge was removed, the failing teeth were extracted, and the area was allowed to heal prior to setup for dental implants. Upon her return visit, our Cone Beam CT Scan verified her significant alveolar atrophy.



She was treatment planned for an implant supported bridge following grafting of her alveolar defect.

Her grafting was done using PRGF, OsteoCel bone grafting and a slowly resorbing membrane to prevent epithelialization of the graft.



After 5 months of healing, the site was re-entered and 2 implants were placed according to her restorative plan. These implants integrated without complication and her bridge was later cemented by her restoring dentist.

Some Final Thoughts....

Previously, patients who were not candidates for implant surgery due to bone defects are now better served with new regenerative techniques. These techniques are less invasive, less morbid and require less surgery time than the more traditional approaches. Unfortunately, there are still some defects that are just not amendable to predictable reconstruction. Thankfully these are few and far between, but usually involve large amounts of vertical regeneration.

"The days of the mentality "we put the Implant where the bone is" are (thankfully) behind us."

As Always, if we can be of any service to you or your patients, please don't hesitate to call on us.

Warmly,

The Doctors and Staff at Falls Oral Surgery

