

ALVEOLAR RIDGE PRESERVATION USING THE BIOACTIVE OSTEOGEN® BONE GRAFTING PLUG WITHOUT A MEMBRANE

OSTEOGEN® PLUG DELIVERY CASE REPORT FOR DOCTORS INFORMATION

Doctors: Please ask your patients if they are allergic to collagen. *Advise patients to avoid alcohol, mouthwash or chlorhexidine for two weeks **as this has been shown to be toxic to fibroblasts** and may retard healing and crestal bridging of soft tissue.*

Fig. 1: Extraction and Debridement

Following anesthesia, extract tooth using standard atraumatic flapless protocol. After tooth removal, thoroughly remove the pathologic periodontal ligament. Remove all soft tissue debris using USDiamond KitSM by Impladent Ltd. or #6 carbide bur which is included in the USD Kit ¹⁻³



Fig. 2: Generate Bleeding to Establish the RAP

After degranulation and removal of the Periodontal Ligament, flush socket and debride twice with normal saline. Remove the Lamina Dura and make lingual or palatal holes lower half of socket **where trabecular bone is available** to procure medullary blood from the Alveolar Process containing osteoclast cells (220 µm) and osteoblasts to trigger the Regional Acceleratory Phenomenon (RAP).⁴ **Profuse bleeding will be absorbed by the hydrophilic OsteoGen® Plug and will help prevent dry socket. Do not hydrate the Plug prior to delivery.**^{5,6}



Fig. 3: Delivery and Initial Compression

Antibiotics with low pH are not conducive to rapid bone formation. **Metronidazole** pH 6.5 and above (concentration: 5mg/mL) is biologically preferred injected into the socket, and mesio-distally at the crest of interdental septum.⁷ Hold the OsteoGen® Plug with sterile tweezers, taper plug apically and deliver into the socket. Compact the plug aggressively. The Plug should be large enough, initially with an excess of 3.0mm-5.0mm on average above occlusal plane, so that it can be compressed into and fill the entire socket to the Soft Tissue superior level. **Do not place plug to the crestal bone height!**



Fig. 4: Final Compression: "Making a Membrane"

Plug compression is achieved by using a **Plugger Instrument to align and compact the bone grafting crystals closer together creating a bioactive membrane barrier which controls migration of connective tissue.**⁸⁻¹⁰ Must use more than one Plug if necessary for multiple roots. Fill and unite the Plug roots superiorly at the root trunk to the level of the soft tissue crest. Leave the top of the Plug intact so it can be compressed into the socket uniformly.



Fig. 5: Suturing; Radiolucent to Radiopaque

Passively crisscross suture over Plug, not through the Plug. Do not use Resorbable sutures. Membrane Not Required. Tissue should bridge across in 9-14 days.* The non-ceramic OsteoGen® crystals are a low-density graft material. The site will show radiolucent day of placement. Plug resorbs continuously in 3-5 months and are replaced by host bone at a rate depending on the site placed and the patient's age and metabolism. The site will become radiopaque and ready for implant placement. OsteoGen® crystals may be used to reinforce the implant osteotomy prior to implant installation.¹¹⁻¹² After implant installation, place healing screw, place additional crystals crestally to prevent downward migration of epithelium to achieve primary closure.⁸⁻¹⁰



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