Introduction:

There are many ways to graft a socket. I’ve tried quite a few of them and, in my hands, the below technique is the most predictable. It’s certainly not the easiest or fastest, but it’s not that difficult either.

**Debride the socket.** Don’t leave any granulomatous tissue in the socket. Spoons work well and a large round #8 diamond on slow speed works well, too.

Elevate a small envelope flap (or tunnel) on the buccal and lingual which takes some patience but gets easy after a few tries.

Small envelope flap on lingual.

I get this from Salvin. Order 12 and you should be able to get three free. Makes it about $50 each.

I order this from Osteogenics. I order the 10 to a box which makes them about $35 each.

Note the Fusion Bone Binder on the bottom. I get these from Woodlandhillspharmacy.com. Throw away the red mixing tip. Do not hydrate the bone.

Note the 1cc syringe. I order these off Amazon. Box of 100 for about $8. Cut the tip off and they work great to carry the bone. You can also just use an amalgam carrier but it takes longer.
Mix the powder (the calcium sulfate) with the bone dry.

Gradually add about 1/2 of the liquid (the gentamicin). If for some reason the patient is allergic to gentamicin (very rare), use saline. Do not add too much liquid. It should be a pretty dry mix.

Pack the bone into the syringe.

Syringe the graft into the socket.

Measure the distance so you can trim your membrane.

Trim the membrane. Try it in. The dimples go up so the tissue can “grab” it. The smooth side goes down. I trimmed it twice more after this and also had to release a bit more on the lingual flap.

Tuck the membrane in. I use cotton pliers in one hand and a periosteal in the other. Gently hold back the flap and slide in the membrane. Be patient. If it doesn’t go, remove it and release the flap and/or trim the membrane. This may be the most important step of the procedure. Remember that tissue grows faster than bone and the membrane keeps the tissue from invading the socket. Some say only a membrane may be needed but I prefer both...a membrane and graft material.

I was out of the PTFE sutures (which are much better) so had to use silk. I like a figure 8.
And then one more interrupted in the middle. These will come out in one week because they harbor bacteria. If you use the PTFE sutures, they can stay in two weeks or even longer. The membrane will come out in three to four weeks. No anesthetic is needed...just pinch it with cotton pliers and pull.

I expect to have lots of bone in about four months and, equally important, excess keratinized tissue which I will move over with a lingualized incision.

Do you reuse the bone and membrane for other patients? Or single use only?

Single use only.

If you get the time, read through this published Compendium paper and let me know your thoughts. I’ve been grafting for several years in a similar fashion to that presented on this thread, but the information and thought process on this link is impressive.

Steinerbio.com/wp-content/uploads/2014/06/The_Healing_Socket.pdf
Thanks in advance for any replies, I’m just looking to further the discussion of socket grafting, and learn more myself in the process.

Cytoplast is made to be exposed. It needs to come out in 3-4 weeks if left exposed, though. If buried, it can stay in as long as you want. Leaving it exposed results in more keratinized tissue.

1. How long do you wait to remove the membrane and does it usually require anesthetic? Three to four weeks usually.
2. How long do you wait before placing the implant in the grafted site? About four months usually.
3. How long to let the implant integrate in the grafted site? About 3 months usually.

Why use non-resorbable vs. resorbable? Just better results in my hands. I do both but cytoplast gives me better results. When I use resorbable, it’s thicker and takes up some of the space that I could pack bone.

Can you explain why you are using mineralized cortical vs. any other?

In my opinion, the others resorb too fast. I have used a combo min/demin that I like but not sure clinically if it makes a difference. Been using mineralized mixed with CaSO₄ for years with consistent results.

Can anybody comment on their opinion on the difference between fusion and Garg’s Bone Binder? Seems like Woodland Hills Pharmacy in California carries both now.
Immediate implants can be the easiest you’ll place. I haven’t done an immediate molar yet, but with premolars, it’s the way to go. If you can place an implant you can do an immediate. As far as the second procedure to remove the membrane, it’s just a touch of topical and pull. Not much of an issue. Also I like to see healing. I will use any excuse to monitor a site.

Excellent documentation with a simple protocol. I’m a big fan of socket preservation especially in the posterior regions where immediates may not be indicated. I wrote an article for Dentaltown a few years ago titled: “Extract and Graft, or Extract and Dismiss?” Unfortunately too many dentists will extract a tooth without ever informing the patient of the valuable benefits of socket preservation, usually out of lack of knowledge and/or because insurance doesn’t pick up the cost.

I bill the membrane and graft as separate codes. I also use a non-resolvable PTFE membrane when primary closure cannot be obtained within a few mm—I get better results using that technique. Interested in what everyone tells their patients in regard to how long they have to place the implant after using an allograft? I’ve read in the literature that it is generally one year before resorption starts to occur. Personally, I’ve experienced much longer times before resorption starts to occur using an allograft, not an alloplast or xenograft. Ideally, the implant placement would be completed around 3-4 months after the graft, but sometimes patients don’t have the funds. So I offer them a small discount off the implant-placement fee if they complete it within six months, as a motivator to doing the non-insurance-covered socket-preservation procedure.

In my opinion, if you are going to physically enucleate the lesion and remove it from the socket then the contaminant source is eliminated, thus has no role to play in the bone remodeling process. Usually at this point you would prescribe an antibiotic as well.

My question: Do prescription antibiotics in any way interfere with bone grafting?

There are many variables in a socket preservation, such as the remaining bony walls, and the width of the gap after the flaps are sutured. I am afraid that the various questions are not taking these into consideration so the answers may be misleading because they are addressing a different set of clinical variables than the questioner has in mind. It’s somewhat similar to talking about how to prepare a molar for a crown or how to get an accurate impression.

Exactly how I do it too, Paul. Nothing else has given me nearly as good a result and I’ve tried it all. It also happens to the most cost-effective as these membranes are only $35 when bought on monthly special. I’m using Maxxeus 50:50 min/demin.

For those thinking this is overly invasive, you should try it. These membranes are removed with no anesthesia. They prevent particle loss and give you more KG as no primary closure is obtained and it all granulates in.

How much bone binder with 0.5cc of cortical bone? Thank you for posting. I read your previous posts few months ago and ordered the products. I am waiting for a good case. Only one thing is that the expiration days on bone binder is six months. I guess it’s because it’s a compounded product, right? Do you store them in room temperature?
Do you have cases where the buccal plate or lingual plate is totally blown? What material and technique do you use that is stiff enough to hold the shape of the wall and hold the graft in?

Resorbable certainly is easier, but my results aren't as good. I use it when I'm feeling lazy. When I use resorbable, I've been using the Impladent collagen plugs, which resorb in 4-6 weeks instead of 4-6 days like the others.

I like immediates in certain cases but felt the buccal wall was pretty thin and it was on an attorney. If in doubt, I prefer staging it for more predictable results. Some of my best cases have been immediates but so have some of my worst. Staging gives me predictability and, in my opinion, is what "newbies" should be doing.

For years I used the Colla-plug with a figure 8 over my bone graft, and fairly commonly I would have bad bone at the coronal aspect of the socket. I switched to Cytoplast over every graft about a year ago and have had fewer problems. They still happen, but with less frequency. I just checked and I did 107 socket grafts in 2014. It is a PITA b/c you have to raise a little bit of a flap on both sides.

Funny thing is that when I see the patient back one month post-op, they rarely know that they have anything over the socket. And when you pull the thing out, they don't feel it, at all. Weird. It does sometimes cause funny tissue-healing patterns. Keratinized gingiva heals under the membrane and sometimes forms some redundant little "ears" of tissue. Usually in lower molar sites. I use gut sutures and see the patients back one month after the ext, and not before. Works for me.

I typically schedule four months out. I used to do three months out but had a few cases where I wish I'd waited longer. Six months is probably more ideal but four months has worked fine for me.

I see them at suture removal (7-14 days) and membrane removal (3-4 weeks). I've never had to numb to remove the membrane. It's faster than removing the sutures.

The graft is more likely to become infected if a loose membrane is left in too long. If the membrane gets loose and gets food packed under it, it needs to come out. If in doubt, it should be removed. If asymptomatic, healthy tissue, etc., it can be left in longer.

One of the most common errors is not trimming the membrane enough. If the membrane is too wide (needs to be about a mm away from adjacent teeth), the papilla may not reform. If the membrane is too long, it won't lay flat, gets wrinkled, gets food under it, infected, etc.

Most common complication of any grafting procedure is infection. I pre-op antibiotics, use local and systemic antibiotics. It's pretty rare, but if you get an infection, don't be afraid to clean it all out and start over. Normal signs of infection tell you if it's infected (rubor, calor, tumor, dolor).

Check the literature out...several studies show that chlorhexidine inhibits fibroblast migration. Not a great idea to use where there will be some secondary soft-tissue healing.