Steps for placing a PTFE barrier membrane over a socket without primary closure.

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- If only open 2-3 mm, collagen (such as compressed Colla-Plug) may suffice.
- This technique description is for when the facial plate is intact.
- Prescribe an antibiotic to start pre-op. Example: Amoxicillin 500 mg, 2 preop and then 1 tid for five days.
- The CDT code for a socket bone graft placed the same day as the extraction is 7953.

1. Before insertion of the bone graft into the socket, reflect full-thickness muco-periosteal flaps on the facial and lingual.
   a. They should extend slightly more than how far the membrane is intended to go. Since the membrane should be at least 4 mm under the flaps, the reflection (depth of the “pouch” with bone on one side and periosteum on the other) should be at least 5 mm. This allows the membrane to cinch snugly over the bone graft without “buckling” or “folding” on the top as the sutures are placed. This would cause leakage under the membrane and likely failure of the graft.
   b. Flaps should include papillae on mesial and distal.

Buccal and lingual flap reflection – space into which the membrane will go.
NOTE: You want the flaps cover as much of the occlusal socket opening as possible. Oral surgeons, periodontists, and some general dentists have been taught to do a “periosteal release” that can “advance” the facial side of the flap to cover more of the socket opening. Using the strong PTFE membrane lessens the need for the periosteal release.

Case #1 On left, no periosteal release or buccal flap advancement. Cases 2 and 3 did have advancement.

In the author’s experience, thin collagen membranes, even if they cost over $100, will not protect any bone graft material for the required 3-4 weeks over a “wide open” socket of 10-11 mm. They will be weakened and disrupted by acidic foods and mechanical forces and many of them will be lost within a short time. Thick collagen membranes such as AlloDerm are better suited to protecting the graft over a wide molar socket for this long as are PTFE membranes as show in Case #1 above.

2. Trim the membrane:
   a. Slightly wider (M-D) than the width of the socket but slightly short of touching each of the adjacent teeth.
   b. Long enough to cover the socket and extend 4 mm under the periosteum and against bone on both the facial and lingual.
   c. Corners can be rounded if necessary to make insertion easier.
3. Place the membrane under the flap on the **lingual side** first - before placing bone graft in the socket.
   a. This prevents so much manipulation of the membrane with the bone in the socket - which could inadvertently lead to some bone being pushed out of the socket.
   b. The membrane can be inserted into the “pouch” with a cotton plier or Adson-Brown 43 or other tissue pickup. It can then be advanced further with a surgical spoon curette (such as a Lucas 86 or 87) or a periosteal elevator.
   c. The membrane should not be allowed to fold on itself.
   d. If using the TXT-200 white PTFE membrane (Osteogenics), the “dot” or “indentations” should always be towards the top or coronal. The smooth side goes toward the bone graft.
      i. Indentations increase surface area to help keep the membrane in place for the required 3-4 weeks.

Picture from Dr. Barry Bartee.
4. Insert bone graft into the socket.
   a. If particulate material, it should be hydrated with saline or mixed with the patient’s blood (if available).
   b. If hydrated with saline, the particulate graft material can be taken to the socket in small increments and mixed and saturated with blood in the socket.
      i. Instruments to transfer bone graft to the socket include:
         1. Wide end of a periosteal elevator.
         2. Surgical spoon curette
         3. Empty plastic syringe made for this purpose and available from Dentsply.
         4. Special cupping instruments sold by Salvin, ACE, and others.
         5. Metal syringe with funnel on one end and plunger to push the graft into the socket.
   c. Do not **pack** bone graft in the socket. Lightly “tamp” it with the wide end of a periosteal elevator or other similar instrument.
   d. Place bone graft to the crestal bone height.
   e. Bone graft in the socket should not be flat but arching or convex from facial to lingual.
   f. A small amount of Ancef (cephalosporin antibiotic) may be added to the bone graft material – such as about 1/40 of a vial containing 1000mg (used for IV administration).
Top cases 1 and 2: Bone graft hydrated with saline. As placed in the socket incrementally, the bone graft is saturated with blood in the socket.

Far right top: Bone putty.

Right: Bone grafted with blood from the socket (IV source).

Below: Items used to place bone in the socket: Spoon from Salvin, empty syringe from Dentsply, and periosteal elevator.

Bottom right: Gently tamping bone graft into the socket.
5. With bone in place, insert 1-2 layers of Colla-Tape over the bone graft to better seal and protect the graft and serve as “insurance” - - helping prevent contamination and failure.
   a. More expensive collagen such as BioMend Extend, Mem-Lok, or other similar materials may also be used.
   b. This collagen does not need to extend as far (4 mm) under the flap – rather just on top of the bone graft.

NOTE: This technique description is for when the facial plate is intact. If part of the facial plate is missing, then:
   A. The PTFE would have to be longer on the facial to extend as deep as the bone loss.
   B. It would be desirable to use the PTFE with a built-in titanium strip to give structure to the facial side of the socket.
   C. Tacks would be optional depending on the stability of the membrane.
6. Now bring the facial end of the PTFE membrane over the top of the Colla-Tape and bone graft to tuck under the periosteum (and against bone) on the facial side.

7. Suture with a non-resorbable suture or Vicryl-type:
   a. Cross-suture as described in the course with one or more interrupted sutures. OR
   b. Multiple interrupted sutures. OR
   c. Horizontal mattress with interrupted sutures.

Above: Cross-suture (covering the membrane four times) along with one interrupted suture in the middle. Cross suture starts and ends where the arrow is.

Right: Horizontal mattress with several interrupted sutures near the top.

9. **Optional:** Apply PeriAcryl (dental super glue).
   a. Dry the area and flow on a layer of the liquid. Allow 20 seconds to dry.
   b. Apply once or twice more as desired.
   c. It only lasts for approximately 7-10 days.

10. When the PTFE membrane is removed, the appearance should be of pink, immature bone that will epithelialize over the following two weeks.
11. Postoperative instructions include:
   a. Do not chew in that area for the next week. Try to avoid chewing there until six weeks post-op.
   b. Peridex rinses (or simply apply to that location) for 30 seconds morning and night for six weeks.
   c. Take the antibiotic as directed
   d. Come in at two weeks and four weeks for the dentist to evaluate healing.
      i. It is possible additional sutures may need to be placed at two weeks.
   e. The membrane should be removed at four weeks.
      (Only PTFE is removed, not the Colla-Tape collagen.)
   f. Continue the Peridex until two weeks after the membrane is removed.