

Single-Use
Instruments

#17209D800 Muraine Punch*

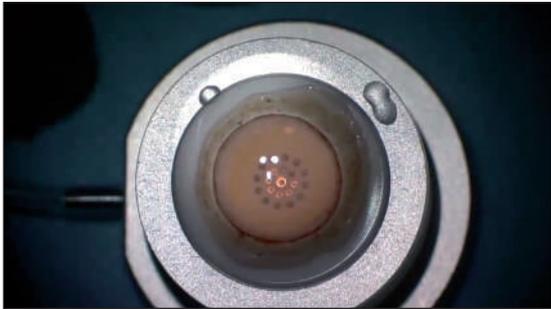


My Technique

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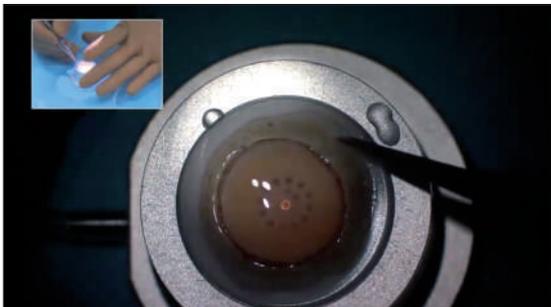
DMEK GRAFT PREPARATION TECHNIQUE - INVERTED TECHNIQUE



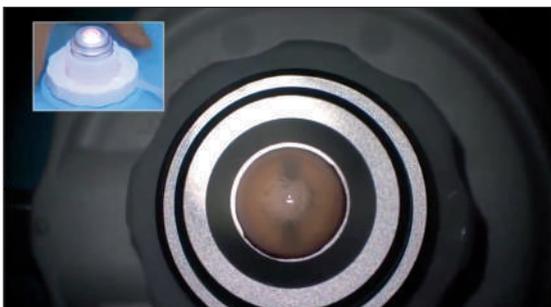
1) Center the donor button on the Muraine Punch¹, endothelium up. Place a few drops of storage medium or BSS on the surface.



2) Apply suction and punch the donor cornea. The Muraine Punch will leave two opposite "hinge" areas intact. Do not rotate during punching.



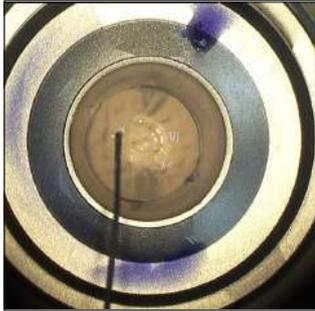
3) Lift the thephine blade, transfer the donor cornea using forceps and place it on an artificial chamber², endothelial side up.



4) Make sure it is carefully centered on the chamber prior to placing the cover over the cornea to seal the chamber. Inflate the chamber with an air syringe to reverse the cornea, then close the valve to stabilize the chamber. Do not over-pressurize.



5) Remove excess storage medium with a sponge. Place a few drops of Trypan Blue to stain the area of the punch. Dry excess stain with a spear. Place cohesive viscoelastic material (or preferably methylcellulose) on the center of the graft area for protection.



6) Make sure the trephination edges are properly stained blue. If necessary, finish trephination with a 15° knife. Also confirm that there is no tearing of the Descemet's membrane within trephination zone.



7) Use a curved Troutman tying forceps³ or a Bonn forceps⁴, to peel the peripheral Descemet's membrane (outside of the punch area). The Descemet's membrane can be separated from this non trephined area, except on two opposite hinges. It is important to isolate these two small flaps on both sides because it will facilitate the manual dissection afterwards.



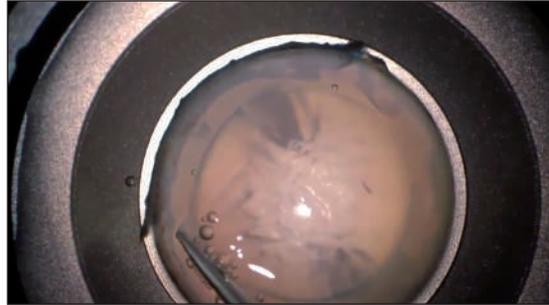
8) Use the curved Troutman tying forceps to begin the manual dissection underneath the hinge. Manually dissect under the hinge and extend for 1 mm to 2 mm into the graft area in order to initiate a delamination plane.



9) Use a 27 G cannula⁵ mounted on a 5cc syringe filled with corneal storage medium or BSS, and then inject the liquid in order to delaminate by hydrodissection the periphery of the graft, sliding to the right and left, then turn the chamber at 180° and repeat the action.



Grasp the hinge and lift it up more than half.

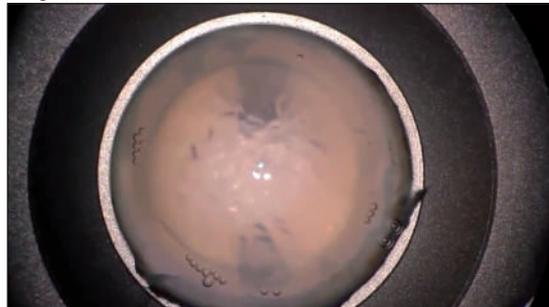


Hinge now lifted off.

10) Once the whole periphery of the graft is delaminated, grasp the hinge with Troutman forceps and peel up just over half and reposition the membrane. During the procedure, regularly irrigate the center of the graft. Turn the chamber at 180° to grab the graft to the other side and peel off completely the membrane. Reposition the flap.



Turn the chamber and grasp the contralateral hinge to completely take it off.



The membrane is now completely peeled off and repositioned.



Graft with both lateral flaps.



Grasp first lateral flap.

11) Once the Descemet's membrane is completely isolated, place a few drops of Trypan Blue from the backside. The two visible hinges are cut at this stage. Place a small amount of methylcellulose on the surface. Fold the graft from the periphery to the center. The membrane is then folded in a "burrito" shape similar to a DSAEK graft with the endothelium on the inside of the burrito. Only touch the Descemet's side during this operation. The graft can be marked at this stage in order to avoid injecting the graft in the wrong direction.



Fold the first half.

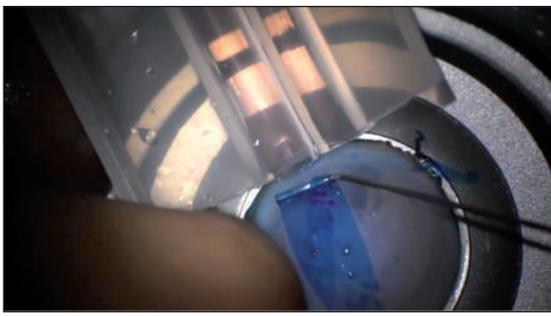


Fold the second half.



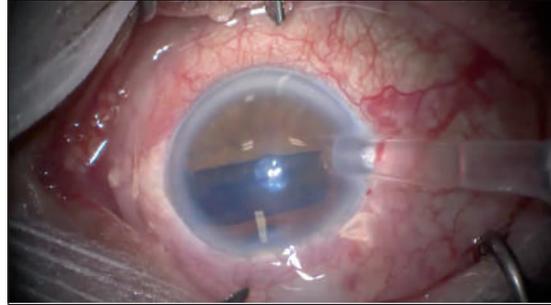
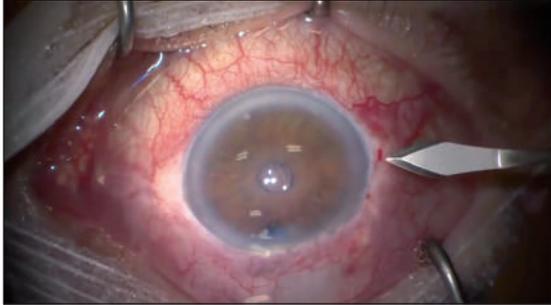
Graft folded in a "burrito" shape.

The graft can be marked at this stage in order to avoid injecting the graft in the wrong direction.

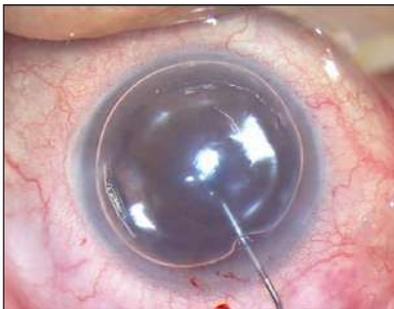


12) Fill the IOL cartridge with corneal storage medium and place it next to the folded graft. Use the tip of the cannula to slide the graft from the leading edge onto the cartridge. Avoid the presence of bubbles. Use corneal storage

medium to help the tissue slide easily and prevent tearing of the membrane.



13) Enlarge incision to 2.4 mm and inject the graft by rotating the syringe into the anterior chamber, endothelium facing the iris. Make sure the anterior chamber is hypotonic so that graft does not go away when removing the IOL cartridge. Graft can be easily unfolded by injecting BSS.



14) Once the graft is centered, inject an air bubble to maintain it in position.

Pearls:

Make sure:

- endothelium is always protected by storage medium or viscoelastic or methylcellulose during the whole procedure,
- donor graft does not slide on the artificial chamber once fully delaminated: it must always stay in touch with stromal support underneath.

*Patent : FR 12 56559 and US 13/714 063.

- 1 - Mucaine Punch, Moria: #17209D800
- 2 - Anterior artificial chamber, Moria: #19182 (single-use) or #19161 (reusable)
- 3 - Curved Troutman forceps, Moria: #17225 (single-use) or #9605 (reusable)
- 4 - Bonn forceps, Moria: #17221 (single-use) or #7850A (reusable)
- 5 - 27G Rycroft cannula, Moria: #7504