

MOLTENO[®]

Glaucoma Drainage Devices

The *Molteno*[®] Glaucoma Implant ‘Piggy-Back’ procedure.

Adding extra drainage some time after insertion of a
Molteno Glaucoma Drainage Device.

When additional drainage is required after implantation of a *Molteno* glaucoma implant, one option is to add extra drainage area to the existing bleb by placing an additional implant in an adjacent quadrant of the eye. This can be done without re-entering the eye itself.

The new *Molteno* implant is positioned in a suitable adjacent quadrant, rotated so that its tube faces the original implant and the plate is attached to the eye through the (now) anterior suture holes. After tying a 5.0 braided polyglactin ligature (eg *Vicryl*) around the tube, the tube of the new implant is inserted into the centre of

the existing (original) bleb cavity through the side of the existing thick bleb wall. In this instance when the tube is trimmed to the right length, the tip of the tube is bevelled so that the bevel faces downwards.

We call this a ‘piggy-back’ procedure. It is a very safe and effective way of increasing the drainage area¹. A *Molteno3*[®] *SS* (185mm²) implant, a *Molteno3* *GS* (175mm²) implant or an original single plate *Molteno* (S1) implant would be suitable.

Vicryl is a trade mark of Ethicon Inc

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Refer to our website, www.molteno.com, for information on patents relating to our products.

Step 1.

Select a quadrant of the eye adjacent to the existing implant. Raise a large fornix based flap of conjunctiva and Tenon's tissue to expose the full width of the rectus muscles and about half of the surface of the existing bleb capsule.

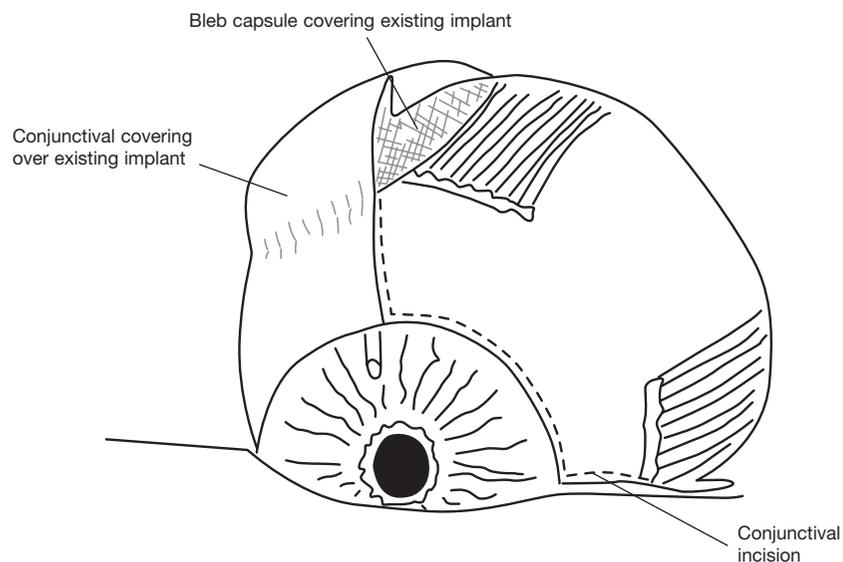


Fig. 1 The incision.

Step 2.

Slide the new implant into position (rotated so that its tube faces the bleb of the existing **Molteno** implant) between, and slightly under, the adjacent rectus muscles. Suture the plate of the new implant to the sclera using only the two, now anterior, suture holes.

Tie a 5.0 braided *Vicryl*[®] ligature around the tube of the implant where it joins the plate. Check that the tube is properly occluded by attempting to inject balanced salt solution into the free end of the tube. Drape, don't stretch, the tube over the existing bleb and cut it long, extending 2/3 of the distance across the bleb. When cutting the tube, bevel the end at 35-40° with the bevel facing down towards the surface of the existing plate.

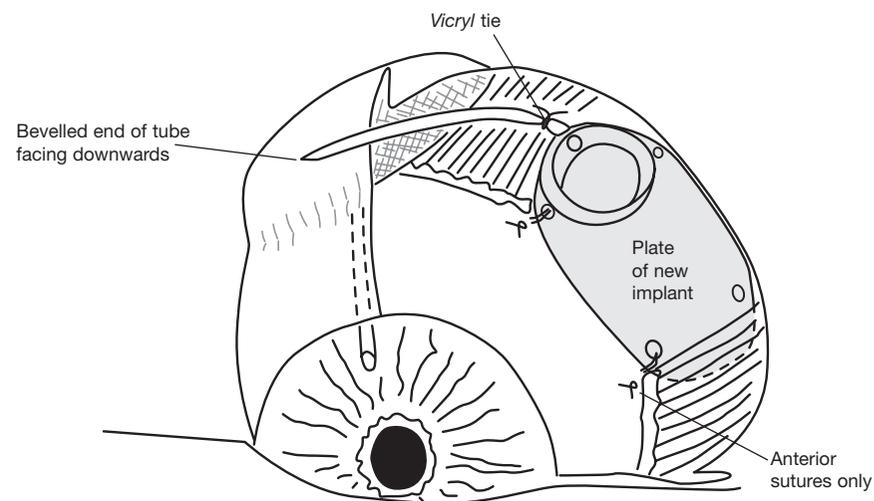


Fig. 2 Positioning the new implant in an adjacent quadrant (**Molteno3 GS** (175mm²) implant as an example)

Step 3.

Take a 22 gauge needle and bend the tip by 30° to make a micro-keratome (see **Molteno3** glaucoma drainage device surgical guide). Your aim is to make a tapered opening through the bleb capsule into the bleb cavity.

Find the edge of the earlier episcleral plate through the capsule using a blunt instrument. Then insert the bent tip of the micro-keratome part way through the side of the capsule wall and just into the bleb cavity. Insert the bevelled end of the tube into the bleb cavity. The V shaped incision of the micro-keratome will form a tight fit around the tube.

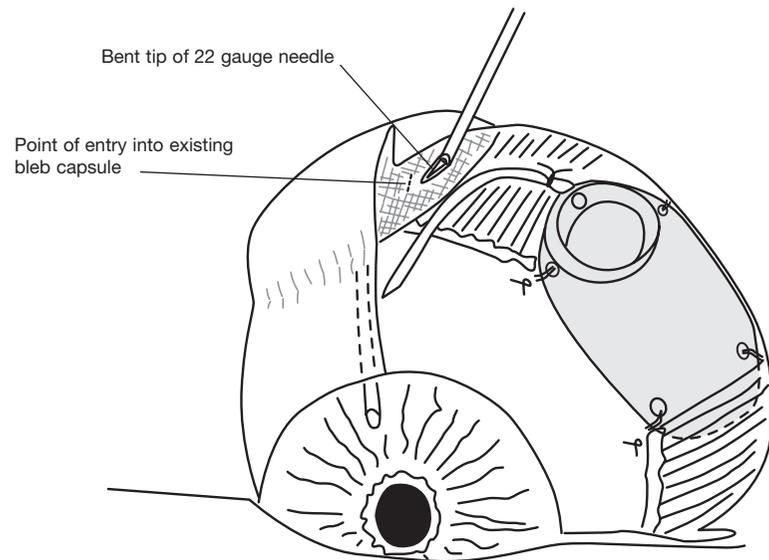


Fig. 3.1 Making a tapered opening through the existing bleb capsule into the bleb cavity.

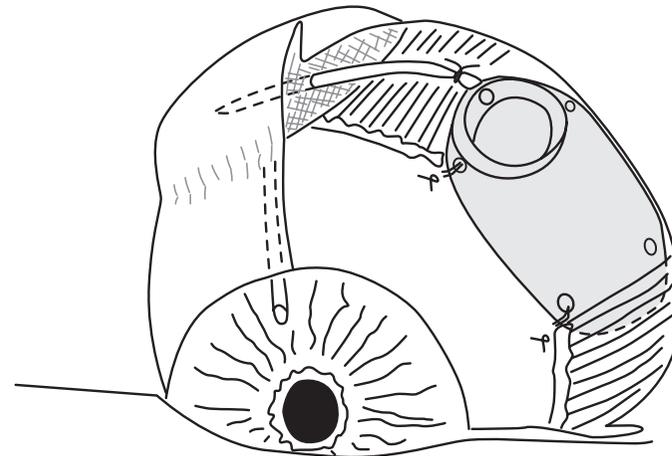


Fig. 3.2 Showing the tube of the new implant inserted into the existing bleb cavity.

Step 4.

Close the conjunctival flap.

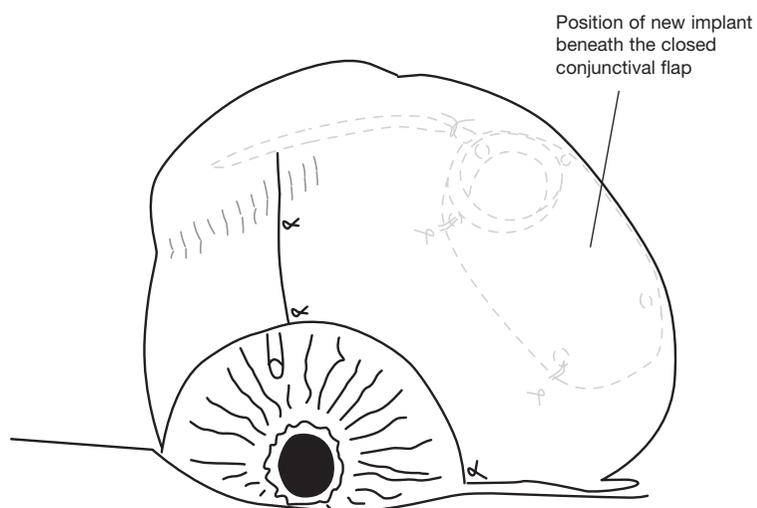


Fig. 4 Closure of the conjunctival flap.

Postoperative management.

Continue hypotensive medication as needed until the *Vicryl*[®] dissolves at 3-6 weeks. When the new bleb becomes distended with aqueous, immediately stop any miotics and prostaglandin analogues that are being used*. If necessary give acetazolamide, topical beta-blockers and topical epinephrine 1-2% or equivalent adrenergic drops. The target IOP for the next four weeks is 15-25mmHg.

Caution: Topical steroids used for more than a few weeks may cause an increase in IOP despite the presence of a draining bleb and should therefore be used with caution.

Three months after operation adjust the hypotensive medication again, aiming for an IOP of 8-12mmHg long term.

**Miotics and prostaglandin analogues frequently cause an increase in episcleral venous pressure in the presence of a draining bleb, which may lead to increased bleb fibrosis and bleb failure.*

References

1. Välimäki J. Insertion of sequential glaucoma drainage implant in a piggyback manner. *Eye*. 2015;29(10):1329-34.

Additional resources are available at www.molteno.com.

To order **Molteno3[®] SS** (185mm²) implants: order code SS-185

To order **Molteno3[®] GS** (175mm²) implants: order code GS-175

To order the original **Molteno[®] Single Plate** (133mm²) implants: order code S1