PATIENT INFORMATION SERIES

REDUCING UNCERTAINTY

The Ex-press Shunt

A Glaucoma Filtration Device

Indications for Glaucoma Surgery

In surgery for glaucoma, the objective is to reduce eye pressure to levels that will no longer cause damage to the optic nerve, which is the currently held mechanism for the progressive loss of vision in this dreaded, blinding disease.

The eye pressure comes from the aqueous fluid produced continuously inside the eye that is supposed to drain through the trabecular meshwork, a sieve-like structure near the base of the iris.

When glaucoma medications fail to reduce the eye pressure by reducing production of aqueous or by increasing drainage, or, both, filtering surgery is usually recommended. Traditionally, a hole is punched or cut in the area of the trabecular meshwork so that the aqueous can flow out into the space between the scleral layer and the conjunctiva, the transparent skin-like membrane covering the front of the eyeball, where it is eventually absorbed.

Problems with Filtering Surgery

Aqueous cannot be allowed to flow out freely through the filter because the eye pressure will become too low (<10 mmHg), which will cause other sight-threatening problems. One of the measures used to prevent aqueous to flow out too freely is making only a partial thickness hole through the sclera so that an external layer of sclera covers the hole, like a trapdoor, providing some resistance to the exit of fluid (Figure 1).

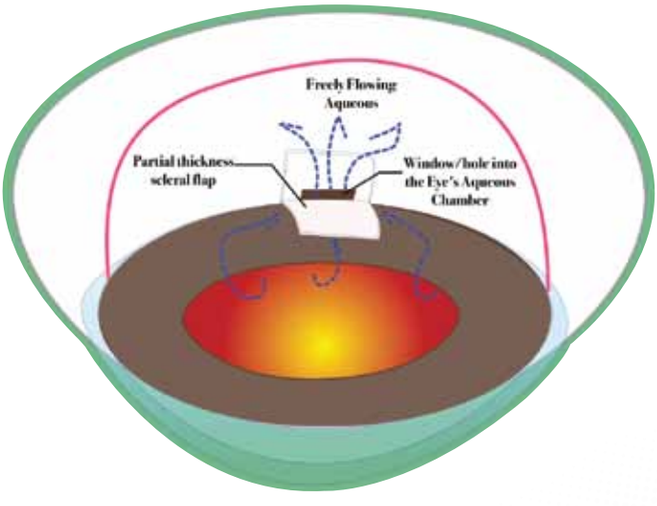

Figure 1. Traditional Filtering Surgery

PATIENT INFORMATION SERIES

REDUCING UNCERTAINTY

The Ex-press Shunt

A Glaucoma Filtration Device

Indications for Glaucoma Surgery

In surgery for glaucoma, the objective is to reduce eye pressure to levels that will no longer cause damage to the optic nerve, which is the currently held mechanism for the progressive loss of vision in this dreaded, blinding disease.

The eye pressure comes from the aqueous fluid produced continuously inside the eye that is supposed to drain through the trabecular meshwork, a sieve-like structure near the base of the iris.

When glaucoma medications fail to reduce the eye pressure by reducing production of aqueous or by increasing drainage, or, both, filtering surgery is usually recommended. Traditionally, a hole is punched or cut in the area of the trabecular meshwork so that the aqueous can flow out into the space between the scleral layer and the conjunctiva, the transparent skin-like membrane covering the front of the eyeball, where it is eventually absorbed.

Problems with Filtering Surgery

Aqueous cannot be allowed to flow out freely through the filter because the eye pressure will become too low (<10 mmHg), which will cause other sight-threatening problems. One of the measures used to prevent aqueous to flow out too freely is making only a partial thickness hole through the sclera so that an external layer of sclera covers the hole, like a trapdoor, providing some resistance to the exit of fluid (Figure 1).

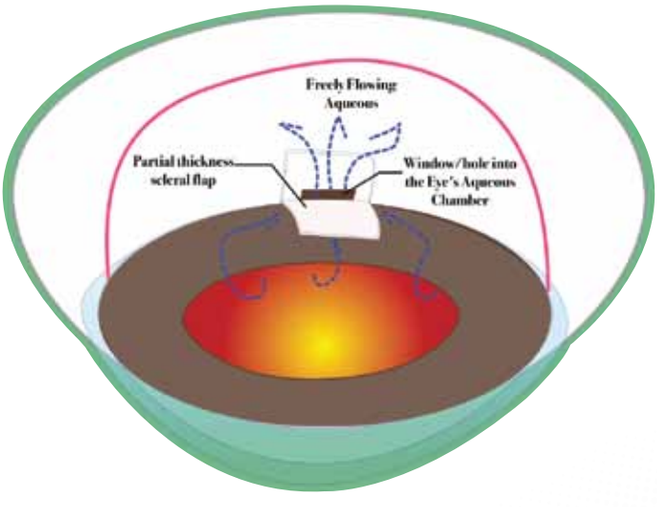

Figure 1. Traditional Filtering Surgery