

## **Trabeculectomy**

### **Indications**

Trabeculectomy is a commonly used operation for the treatment of glaucoma. For some patients it may be recommended as the first line of treatment for their glaucoma, but more often it is required when treatment with eye drops has proved inadequate to control the intra-ocular pressure.

### **The operative procedure**

Ultimately many patients requiring trabeculectomy will need operations to both eyes, but the surgery is almost always done to only one eye at a time. The operation can readily be performed under a local anaesthetic, although a general anaesthetic may occasionally be requested by the patient.

The operation involves the creation of a new channel for the aqueous fluid to flow out of the eye. Normally aqueous drains through the trabecular meshwork which is in the angle between the cornea and the iris. In trabeculectomy, a small section of trabecular tissue is removed, and at the same time, a small hole is made in the iris (peripheral iridectomy), to stop the iris tissue from obstructing the new drainage channel.

### **Adjunctive treatments**

In some patients who are particularly at risk of the surgery failing, treatment of the tissue in the surgical area by drugs to control the wound healing is often carried out. The commonly used adjunctive agents are 5-fluorouracil (5FU), and Mitomycin-C (MMC).

### **Effects of trabeculectomy**

For the large majority of patients, a trabeculectomy will successfully control the intra-ocular pressure – often at a better level than could have been obtained by medical treatment. A functioning trabeculectomy will generally continue to work for many years, but regular follow-up will still be required to ensure that it maintains the intra-ocular pressure at a satisfactory level. In some patients, the trabeculectomy will partially reduce the pressure, but they may still require additional medication to achieve an adequate level of pressure reduction. In a small percentage of patients, trabeculectomy surgery may fail to reduce the pressure, and in this situation it may be necessary to repeat or revise the procedure.

### **Early post-operative period**

For the first week or two after trabeculectomy surgery the eye is often, red, irritable and watery. The vision may be blurred, and the eye sensitive to light. These symptoms are to be expected, and improve as the eye settles down. Sometimes if the intra-ocular pressure is very low, the vision may be particularly blurry in the early days after surgery. A more common problem is that the wound healing response of the eye closes off the newly created drainage channel, and that the pressure goes up again. In this situation, further treatment may be required, ranging

from massage of the eye, 'needling' of the drainage bleb, or injections of 5-FU into the conjunctiva. Very rarely in patients who already have extensive visual damage from glaucoma, the trabeculectomy surgery itself may cause further visual damage at the time of surgery, and wipe out of the remaining field of vision.

It is generally recommended to avoid physical exertion for the first couple of weeks following trabeculectomy surgery, but most patients should be able to return to work after two or three weeks. Normally any pressure reducing drops that were being used before surgery are discontinued in the eye having surgery at the time of the operation. Following the surgery patients typically use dilating drops for a couple of weeks, and steroid drops for a couple of months, until the eye is completely settled.

### **Late complications**

A trabeculectomy operation does seem to accelerate the development of cataract, and for this reason it is often recommended that patients who have both glaucoma and early cataract, have a combined operation of cataract extraction, intra-ocular lens implantation, and trabeculectomy. If a patient who has had a trabeculectomy develops a cataract, this can be treated in the normal way by cataract extraction, and the trabeculectomy generally continues to function without interruption.

Very rarely if a patient gets conjunctivitis, they may develop infection of the drainage bleb. This is a serious problem, since the infection can rapidly spread into the eye, and requires intensive antibiotic treatment.

Whilst the risk of complications following trabeculectomy surgery is not negligible, the risk needs to be set against the risk of problems that would arise if the surgery were not to be carried out. For most patients with glaucoma that is uncontrolled by medical treatment, the vision in an eye will be irreversibly lost over the course of time, resulting in blindness. Although sometimes there may be visual deterioration following trabeculectomy surgery due to cataract formation, the visual loss due to cataract can potentially be corrected by surgery. However, any progressive visual loss from glaucoma cannot be restored, and is irreversibly lost.

The purpose of trabeculectomy surgery is to slow down or stop the visual deterioration from glaucoma. The trabeculectomy procedure does not correct or restore any visual damage that has already occurred, and at the best can only prevent further glaucoma damage from occurring. It is however generally successful in helping to achieve that goal.