Information for Corneal Transplant patients (Penetrating and Deep Anterior Lamellar keratoplasty)

What is a corneal transplant?

The cornea is the transparent window at the front of the eye, and it can become scarred by injury or turn cloudy due to disease, when the rest of the eye remains quite healthy. Just like the front lens of camera becoming cloudy, the vision is then blurred. A corneal transplant (also called a corneal graft or keratoplasty), is an operation to replace this cloudy cornea with a clear one.

Why do I need a corneal transplant?

The exact diagnosis will be explained by the doctor, but the usual reason for this operation is to improve your vision. For some people however, the operation may be advised to treat chronic pain in the eye, even if there is little chance of gaining improvement in sight. Rarely, the operation is necessary to save the eye, for example in severe ulceration of the cornea. It is important that you understand the reason the operation is recommended in your case, and what it is expected to achieve.

Where does my new cornea come from?

Your cornea will have come from someone who has expressed a wish that their corneas be used to help someone else to see, after their death. People who offer their organs in this way are called *donors*, and transplant operations would be impossible without their generosity. The donor cornea will have been thoroughly tested and kept in an Eye Bank for a period, before being sent to the hospital where the operation is carried out. The Eye Bank ensures that the cornea is in good condition, and checks are performed to ensure that it is free of transmissible infection.

Types of graft

There are 3 types of graft.

1. Full thickness (Penetrating) graft - when the whole of the cornea needs replacing
2. Partial thickness grafts replacing the front of the cornea (Deep Lamellar) - to treat superficial damage to the cornea
3. Partial thickness grafts replacing the back of the cornea (endothelial Lamellar) - to treat conditions affecting the innermost cornea or endothelium

The operation itself

The operation is usually performed under general anaesthetic, but is sometimes done under local anaesthetic. The procedure itself takes between 1 - 2 hours. During the operation the surgeon removes a circular piece of your cornea and replaces it with a matching piece of clear donor cornea. This is secured in place with fine stitches (called sutures). In some cases the operation is combined with other procedures such as cataract extraction, in which case it may take a little longer.

Usually performed as a day case but rarely you may need to stay in hospital for a few days afterwards. You can usually come into hospital on the day of surgery, but need to be seen about a week beforehand for a pre-operative check.

What will it feel like after the operation?

Immediately after the operation, your eye will be covered with a protective pad and shield. This is removed the following day. There may be some soreness in the eye, but it is seldom severe, and can be expected to settle quite quickly.
You will need to use eye drops several times a day for the first few weeks, and these will gradually be reduced over the next few months. **NEVER** stop your eye drops without first consulting your ophthalmologist - **this is very important**.
You will normally be able to return to work within a month, but this will depend on the work you do, and should be discussed with your consultant.

What will my sight be like after the operation?

Your vision will be quite blurred initially. The quality of the vision usually improves within weeks of the surgery, but improvement is rather slow. It is important to understand that your vision will go on improving over a period of many months after the surgery. This is because the cornea takes a long time to heal.

Regaining good vision

It is unlikely that your vision will be ‘stable’ (i.e. able to get new glasses or contact lenses) for at least 9 months, and it can take over a year for your vision to stabilise. You are most unlikely to see clearly without some assistance in the form of glasses or sometimes contact lenses. This is because all patients with corneal transplants have some degree of distortion of the cornea (astigmatism), and/or are short or long-sighted.

A small proportion of patients have more marked distortion (astigmatism) requiring a further operation on the cornea to get the best level of vision. This may take the form of incisions in the cornea, further sutures (stitches), or laser.

Stitches (sutures)

Your new cornea is secured in place with very fine stitches, called *sutures*. These are non-dissolving, and remain in place permanently, unless removed. The sutures affect the shape of the cornea, and occasionally, in some patients may need to be adjusted to reduce distortion (astigmatism).

The sutures are usually removed eventually, but the timing of this varies greatly between individuals. Sutures are not normally removed until at least 12 months after the operation. Sutures can occasionally break spontaneously. If you notice a persistent feeling of ‘something in the eye’, you should contact the eye department and be seen with 24 - 48 hours. If a suture has broken, it needs to be removed to avoid the risk of infection and graft rejection (see below).

Work and activity after a corneal transplant
After a corneal transplant your eye is initially vulnerable to any contact with the eye, and the effects of straining (e.g. bending, pushing or lifting). For the first month after the operation you should not take any exercise beyond a brisk walk. You should avoid heavy lifting and if you have to bend down, you should do so from the knees, keeping your head up. You should wear an eye shield at night for the first few weeks, which will be provided, and try to avoid sleeping on the side of operated eye. It’s a good idea to wear glasses or sunglasses simply for protection during the day, even if they don’t help the vision. **Above all, do not poke or rub your eye**.

Desk jobs can usually be resumed after 2 weeks, but if your work is more strenuous, you will need to be away from work for at least a month. It is recommended that you do not drive until you get accustomed to your new vision. This takes at least a month, provided the vision in your other eye remains satisfactory.

You should not resume sports until you are told it is safe to do so and when you do resume sports, it is essential that **eye protection must be worn at all times whilst participating in sports** after a corneal transplant. Various types of sports eye protection are available in sports shops and opticians. If you swim, you should wear goggles for protection, and avoid diving in. **You are strongly advised against major contact sports** (eg. rugby, martial arts etc) at any time.

In time, a corneal graft is able to withstand the rigours of normal life, but the eye is never as strong as a normal eye. A severe blow, such as a punch, can cause a rupture of the transplant. Such an injury can cause blindness.

Treatment and follow-up
Initially you will be seen frequently in the eye clinic. Most patients can expect to visit the Eye Clinic between 8 and 10 times in the first year, with gradually increasing gaps between appointments. It is very important to keep these appointments.

All patients are given steroid eye drops (Dexamethasone) after a corneal transplant. These are the most important protection against graft rejection. **It is essential that your drops are not stopped**. You will be given instructions on how to use your drops, and it is important you understand these clearly.

Steroid eye drops can have side effects, which must be watched for. They can cause a rise in eye pressure, which is one of the reasons it is important for you to return to the eye clinic for regular check-ups.

If you experience any problems with your eye in between your regular scheduled appointments, it is very important that you are **seen promptly** in the Eye Clinic. Please contact the Eye Department to arrange an urgent appointment.

Complications of the operation

Every operation carries risks, either from the surgery itself or the anaesthetic. The risks of corneal transplant surgery include:

- Minor complications. These occur from time to time, but do not affect the result. These include short periods of high eye pressure, or small fluid leaks between the stitches. These generally settle within a few days of the operation, but occasionally an extra stitch is required.

- Major complications. These are rare, but when they occur can threaten sight, or even loss of the eye. Causes include severe bleeding, or infection within the eye. Further surgery may be necessary if they occur.

- Graft rejection. This is a reaction of your body against the transplanted cornea. It causes the eye to become red and sore, and the vision to become blurred. The risk is highest in the first year, but it can occur even many years later. If it is treated early, vision can be restored, so it is very important to attend the eye department **urgently** if you have ***any*** new symptoms in the eye after surgery.

- Astigmatism. This is blurring of vision caused by an irregular shape of the front of the eye. Small amounts of astigmatism are common, and can be corrected with glasses or contact lenses. Occasionally, more severe irregularities in shape, require further surgery.

- Cataract. The lens in your eye can sometimes become cloudy (a cataract) after a few years, earlier than would have occurred naturally. This can be treated with a cataract operation.

- Glaucoma. The pressure in your eye can rise, which sometimes needs to be treated with eye drops. Rarely, surgery is needed to treat this.

- Infection of the eye. This is very rare, but can cause loss of vision.

- Transmitted infection. All donors of corneal tissue are screened for blood-borne diseases including Hepatitis, Syphilus and HIV, so that transmission of such infection from the donor is extremely rare. There is no test available for Creutzfeld-Jakob disease (CJD), but donors are screened to exclude anyone at high risk of this condition.

- Recurrence of the original condition. Occasionally the original disease can recur. This is more common with certain genetic diseases (corneal dystrophies), and viral infections.

- Graft failure. A failed corneal transplant is cloudy making the vision blurred. This can occur after an episode of graft rejection, infection, recurrence of the original disease, or simply from the transplant cells wearing out over time.

After you have had a corneal transplant operation, it is important that you:

- **Never stop your drops without first consulting your ophthalmologist. Steroid eye drops will usually be tapered slowly over a period of 9 - 12 months.**

- **Dexamethasone steroid eye drops will be prescribed initially in single use (minims) for frequent use. Once this runs out your doctor will prescribe Maxidex (which is the preserved version).**

- Always report back **urgently** to the eye clinic if you have any concern about the eye at any time in the future.

Emergency contact numbers
If you experience any problems with your eye between your regular scheduled appointments, it is very important that you are seen promptly in the Eye Clinic. Please contact the Eye Department to arrange an urgent appointment on:

01332 787003 Monday to Friday, 8.30am to 5pm

01332 787154 (Ward 307 who will contact the on call eye doctor) evenings and weekends

November 2014 – M Anandan
Private appointments:
Sue Da Silva, Tel. 07900210191