DALK Deep Anterior Lamellar Keratoplasty

Information for patients

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What is Deep Anterior Lamellar Keratoplasty?

Deep anterior lamellar keratoplasty (DALK) treats corneal damage. It is a partial thickness corneal graft where 95% of the cornea is replaced. It is used as an alternative to a full-thickness corneal graft called a penetrating keratoplasty (PK)

The procedure is technically skilled and involves cutting the cornea to almost 95% thickness, and removing the top layer. After removing the unhealthy part of your cornea, a donated cornea is stitched into place and the sutures remain for around 12 to 18 months.

What are the benefits?

By preserving that part of the cornea that is healthy, the risks of graft surgery such as graft rejection, bleeding and infection inside the eye, are decreased.

If your inner corneal layer is normal, then it is worth preserving.

Replacing the abnormal corneal tissue with healthy donor tissue should improve the visual potential of the eye and also where the cells of the cornea are damaged (dystrophies), this will improve the comfort by decreasing occurrence of ocular surface breakdowns.
What are the risks

- The most frequent surgical complication is perforation of Descemet’s membrane. If this happens a full thickness corneal graft (Penetrating Keratoplasty) would be required.
- Infection
- Bleeding
- Loss of Vision
- Graft Rejection
- Increased pressure inside the eye
- Cataract formation
- Recurrence of the original problem
- DALK may cause clouding in the corneal layers leading to sight problems.
- As this is a new procedure we do not know how long it will be effective. However, the procedure can be repeated if necessary.

Are there any alternatives available?

In the case of keratoconus, possible alternatives are:
- To keep using contact lenses
- or semicircular plastic rings (INTACS) can be implanted inside the cornea.

In corneal dystrophies, possible alternatives are:
- laser surgery to reshape the surface of the eye and remove some of the abnormal tissue,
- conservative treatment with bandage contact lenses and eye drops is also an option.
If you have any specific concerns, you should discuss them with your surgeon before the operation.

**What will happen if I decide not to have treatment?**

Your diseased cornea may cause your vision to get worse. However, you may still have the procedure at a later date.

**Getting ready for your operation**

- You may need to be seen in the pre-operative clinic before you are admitted to hospital. Here you will have blood tests, and sometimes a heart trace or a chest x-ray. You will be assessed to see if you are fit for the anaesthetic.

- The staff will ask routine questions about your health, the medicine you take at the moment and any allergies you may have.

- You will be given instructions on eating and drinking before your operation.

- You will be able to discuss the operation with a doctor. You will be asked to sign a consent form to say that you understand the procedure, and what the operation involves.

- Please leave all cash and valuables at home. If you need to bring valuables into hospital, these can be sent to General Office for safekeeping. General Office is open between 8.30 and 4.45 Monday to Friday. If you are discharged outside these times we will not be able to return your property until General Office is open again.
Office is open. The Trust does not accept responsibility for items not handed in for safekeeping.

The day of your operation

- You will either come into hospital the day before or the day of your operation.
- You may need a repeat eye test or corneal topography examination.
- You will be asked to remove jewellery - plain band rings can be worn but they will be taped.
- If you are on regular medication, you will be told to take this if necessary.
- You will be asked to take a shower and put on a gown and disposable underwear.
- If you are having a local anaesthetic, you may have a light meal before your operation, for example toast and cereal.
- If you are having a general anaesthetic, you will have been given instructions before you come into hospital.
- A bracelet with your personal details will be attached to your wrist.
- You may be prescribed some medication to take before your operation by the anaesthetist. A member of the nursing staff will give this to you.
- A nurse and porters will take you to the operating theatre.
• Your dentures, glasses or hearing aid can stay with you on your journey to the operating theatre.

• When you arrive in the waiting area, a theatre nurse will check your details with you. You will then be asked to put on a disposable hat.

• The ward nurse will then leave you and you will then be taken to the anaesthetic room.

Your operation

The operation usually takes about an hour, but this will depend on your individual case or when more than one procedure on the eye is needed - for example if the transplant is combined with cataract surgery.

What should I expect after my operation?

• After your operation you will be kept in the theatre recovery room before being taken back to the ward.

• A nurse will check your pulse, blood pressure, breathing rate and eye wound regularly.

• A protective shield will cover your eye.

• The pain is usually slight. However, painkillers will be prescribed for you if it becomes unpleasant.

• You will experience some feeling of grittiness from the sutures. This will gradually settle.

• Your vision will remain blurred and hazy. This will continue to change over the next few weeks and months after your operation.
• The first time you get out of bed, please make sure you ask a nurse for assistance. This is in case you feel dizzy.

**The first day after your operation**

The nursing staff will examine your eye after they remove the covering shield. If your eye is satisfactory and you have recovered from the effects of the anaesthetic, the ophthalmologist will then examine your eyes. Drop and other medications will then be prescribed, and will be given by the nursing staff.

**Going Home**

If all is well and depending on your home situation, you may be able to go home after your operation or stay in overnight to posture.

**Discharge Information**

**Pain relief and medication**

The nursing staff will advise you about painkillers before you leave the hospital.

You will need frequent drops for the first few weeks, including a steroid drop to help prevent rejection of the transplant. The nursing staff will show you how to put in the drops. If you think you will have a problem putting in your drops, please discuss this with the nursing staff before you are discharged so that district nurse visits can be arranged. The steroid drops will need to be used for a long time after your operation.
Important

It is important that you use your medication to reduce the chances of infection or rejection of your transplant. Although very uncommon, it will show as increased pain, redness and a reduction in vision.

In the weeks or months following surgery, if these symptoms should happen or if there is a sticky discharge from your eye, you should ring the contact number given at the end of this leaflet. It is important that you contact the department so that arrangements can be made for you to be seen in the clinic.

Getting back to normal

- Have a quiet and restful lifestyle for the first few weeks after your operation. You must avoid activities, which involve heavy lifting (i.e. shopping bags) or bending for long periods.

- Until advised otherwise by your ophthalmologist, you must avoid contact sports or other activity which can directly damage the eye.

- A plastic shield must be worn when asleep for the first week to protect the corneal transplant from accidental damage. During the day you can wear your usual glasses and these will provide more protection to your eye.

- Please do not rub your eye. If your eyelids become matted, they can be cleaned with cooled boiled water using a piece of cotton wool.
• You may notice an immediate improvement in your sight. However, improvement in your sight usually takes several months. Vision following corneal transplantation usually improves to a fairly good level. If however, you also have other problems with your eye or the transplant was performed for an inflammatory eye condition, your vision may not reach such a high level.

Driving
You can drive as soon as your eyesight allows.

Returning to work
You can self-certify for the first seven days of sickness. Before you are discharged, a medical certificate (sick note) may be issued by your hospital doctor to cover the expected time off you will need.

Further Appointments
You will need sight testing by the optometrists. It is likely that you will still need some kind of spectacle lens to achieve your best sight, though it is also hoped that your unaided sight (without glasses or contact lenses) will be improved.

Macclesfield District General Hospital 01625 421000
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Ophthalmic Nurse Practitioner contacted via switchboard.

References
NHS Prodigy:
http://prodigy.clarity.co.uk/patient_information_leaflet/cornea_transplant/view_as_a_leaflet
Title: Corneal transplantation using the Descemet's stripping endothelial keratoplasty technique  Author(s) Kharod BV, Carlson AN
Citation: Expert Review of Pharmacoeconomics & Outcomes Research, April 2007, vol./is. 7/2; (137-42)
Source: Medline

Available in fulltext at ProQuest

Title: Long-term graft survival in deep anterior lamellar keratoplasty  Author(s) Sarnicola V, Toro P, Sarnicola C, Sarnicola E, Ruggiero A
Citation: Cornea, June 2012, vol./is. 31/6; (621-6)
Source: Medline

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