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Ophthalmology

Trabectome (Ab Interno Trabeculotomy) for Glaucoma

What is Trabectome surgery?

Ab interno Trabeculotomy (AIT) with the Trabectome is a relatively new, minimally invasive surgical procedure to treat glaucoma. It aims to lower your eye pressure by increasing drainage of fluid out of your eye.) It aims to prevent your glaucoma from getting worse and does not improve your vision. In some cases, it may reduce the need of using eye drops for glaucoma.

Trabectome probe, a small device enters the eye through a tiny 1.8 millimetre incision at the edge of the cornea and is used to remove part of the trabecular meshwork (roof of drainage channel). It can be combined with Cataract, adding about 15 minutes total onto the procedure.

How is this procedure different from other glaucoma surgery?

The benefits of Trabectome Ab interno Trabeculotomy (AIT) over the traditional glaucoma surgery include:

- Internal approach instead of external creation of a external drainage channel
- It is minimally invasive due to the size of the incision for procedure and the way it works, as opposed to significant surgical trauma from some other surgical options.
- It may easily be combined with cataract surgery.

Is Trabectome suitable for everyone?

Not all patients with glaucoma are suitable for Trabectome surgery. Typically, this procedure is more effective in the early to moderate stages

of glaucoma but may be offered to suitable patients with more advanced glaucoma.

Will Trabectome surgery cure my glaucoma?

Trabectome surgery aims to prevent your glaucoma from getting worse by lowering your eye pressure.

As with all other glaucoma treatments, it cannot cure glaucoma, neither can it reverse any damage already caused by glaucoma, nor bring back any lost vision.

Trabectome surgery does not always work alone and glaucoma medications or additional glaucoma surgery may be needed.

What are the risks and complications of Trabectome?

Trabectome operation is a relatively new procedure. It has however been assessed by National Institute of Health and Care Excellence (NICE

The Trabectome procedure is designed to be less traumatic than conventional glaucoma surgery (Trabeculectomy ab externo), and therefore damage to eye structures is expected to be less than conventional surgery. The risk of complication varies with the type and stage of glaucoma, the patient's age, other health conditions and previous surgery.

Potential complications include:

Bleeding: postoperative mild transient bleeding inside the eye (hyphaema) is very common. It almost always resolves on its own within days to weeks. This can lead to delay in vision recovery after surgery. Very uncommonly bleeding in the eye may need to be washed out surgically. Bleeding very uncommonly occurs some months after surgery.

Infection: infection can happen after any eye operation. Usually the risk of severe infection causing loss of vision is considered to be about 1 in 500.

While infection is very uncommon, it may be very serious and can result in irreversible visual loss or rarely, loss of eye.

Inflammation: all eye operations lead to some inflammation. Usually this is controlled by the medications given after the operation. It can be severe and may require prolonged treatment, but this is uncommon.

High Pressure after surgery: sometimes the pressure may remain high after surgery. This is usually controlled with pressure lowering drops and additional procedures to control the pressure may need to be explored. Over time, the drainage channels may undergo scarring which may close the opening that was created, leading to increase of the eye pressure

The intraocular pressure may sometimes even increase after the procedure.

Low Pressure after surgery: more rarely the pressure may be too low after surgery. This is usually detected during clinic appointments and is often remedied by stopping any pressure-lowering eye drops and reducing steroid eye drops. Sometimes an injection of viscoelastic (a jelly like material) in the front chamber of the eye is required to raise the pressure.

Corneal Damage: corneal decompensation which is clouding of the normally clear front window of the eye may occur. This is very uncommon.

Iris damage: the procedure may very uncommonly lead to inadvertent damage to the iris tissue.

Cataract formation: if you haven't had a cataract surgery are not having one combined with Trabectome then like many eye surgeries it can enhance formation of cataract in the eye which may need to be deal surgically in future.

Cystoid macular oedema: inflammatory fluid may collect in the centre of the retina. If this occurs it is usually mild and needs a course of anti-inflammatory drops. It can be severe and may require prolonged treatment and affect vision, but this is uncommon.

Loss of vision: some degree of blurred vision is expected for a few weeks after surgery as explained above. Uncommonly complications lead to irreversible to loss of vision or rarely loss of eye.

Sympathetic Ophthalmia: the other eye may be very rarely affected, by simultaneous inflammation in the two eyes causing loss of vision.

Severe complications are uncommon and steps are taken to prevent them, but it may not be possible in all cases. **Please seek urgent advice if there is a significant sudden change in your vision at any time after your surgery.**

What are the risks of not having the?

If the eye pressure remains elevated despite medical therapy then there is a risk that your vision will deteriorate. Vision loss from glaucoma is irreversible and permanent. The rate at which vision may deteriorate varies vastly between different patients.

Are there any alternatives to this procedure?

There are many ways to treat glaucoma, such as eye drops, conventional surgery like Trabeculectomy, laser Trabeculoplasty, and other micro-invasive procedures like iStent implantation Your surgeon recommends options for your glaucoma treatment after assessing a number of specific characteristics including: the eye pressure, stage and type of disease, state of your eye tissues, other eye conditions your general health and relative risks of different procedures.

Your doctor will be able to discuss this further.

What happens before your operation?

Before the operation you will be asked to attend a pre-operative assessment appointment to check that you are fit for the procedure and anaesthetic.

Please bring an up-to-date list of your medications and a brief summary of your medical history with you to this appointment; if you are unsure of anything, please, check with your GP. During this visit your general health and suitability for anaesthetic will be assessed. Any investigations e.g. blood tests will also be undertaken as appropriate.

If you use blood thinning medications such as Aspirin, Warfarin and Clopidogrel or new blood thinning medications such as Rivaroxaban or Debigratan then please do advise your eye surgeon during the consultation and the nurse at preoperative assessment. Some of these medications **will need to be stopped temporarily** to decrease the risk of bleeding with surgery. The safety and duration of this will be done in

discussion with your doctor/ haematology team, and you will be advised accordingly. Patients who are taking Warfarin are advised to have their level (e.g. INR) checked at one week and at three days before surgery to ensure it is within the correct therapeutic range.

You should continue using any eye drops and tablets for your glaucoma as directed by your ophthalmologist until your operation. In some cases you may be asked to stop the drops for a certain period before the operation to reduce the risk of eye pressure going too low immediately after the operation.

What happens during the operation?

The operation is usually performed under a local anaesthetic, which means that you will be awake, but your eye will be numbed so you will not feel any pain during the operation. The eye will be anaesthetised first with eye drops and then an injection of anaesthetic will be administered around the eye. The anaesthetic injection itself may cause some discomfort; a slight sensation of pressure as the anaesthetic is delivered. The injection prevents pain and excessive eye movement during surgery. For many hours you may either see nothing out of the eye or have very blurred vision. Your anaesthetist will discuss this with you before the surgery.

During surgery your face will be covered by a sterile sheet, or drape, which keeps the operation site sterile and also prevents you from seeing any of the surgery. You will be aware of the surgeon working around the eye, but should not feel pain.

Somebody will usually be holding your hand during surgery and in the event of any pain or discomfort, you should squeeze their hand. This will alert the surgeon so that they can stop the surgery and top-up the anaesthetic if needed. You are also likely to hear the surgeon speaking to the scrub nurse and other members of the surgical team.

Sometimes general anaesthetic may be considered to put you to sleep during the operation if local anaesthetic is not considered suitable for you or if you specifically choose so.

What happens after the operation?

After the operation, your eye will be covered by a protective plastic shield and an eye pad which stays in place overnight. An appointment will be arranged to review you on the following day.

Usually you will be able to go home after a few hours. In some circumstances you may need to stay in overnight like if you had a general anaesthetic.

Your eye may begin to feel sore once the anaesthetic starts to wear off. The pain is not usually too bad and you can take a pain killer tablet which you are used to, such as paracetamol or ibuprofen, to help. Your eye is likely to look red and have some bruising around it.

You will be advised to start drops eye drops on the same evening after cleaning the eye.

Patients are advised to ask a friend or relative to accompany them home after surgery.

What should I expect to feel after the operation?

It is normal for the vision to be blurred and the eye to be uncomfortable and red after surgery. The period of blurring is variable, usually lasting 3 - 14 days. Patients may also observe that their vision is worse in the morning and gets better upon rising which results from shifting blood in the eye due to gravity.

Your eye may be watery and sore for some time after surgery, usually for a few a days. It can take 2-4 weeks for the eye to feel normal and the vision to stabilise after surgery.

Will I have to use eye drops after surgery?

Special postoperative drops are given to every patient and are to be used regularly

1. An antibiotic (e.g. Chloramphenicol)
2. An anti-inflammatory steroid (e.g. Dexamethasone) for few weeks.
3. Drops to keep the pupil small (e.g. pilocarpine) for 3-4 weeks.
4. Glaucoma medications will need to continue and may be reduced in some cases.

The postoperative eye drops will normally need to be taken for many weeks. Each time you attend the outpatient clinic any changes to your eye drops will be discussed with you. If you are running out of the drops you will need to get a repeat prescription for them from your GP before you run out.

The drops should not be stopped or the dosage changed without consulting your eye surgeon.

It is important that any eye drops for the other eye are continued as before unless advised otherwise.

What happens to the eye pressure after surgery?

The pressure is expected to drop in the majority of the cases but this will not cause any special effect on your vision or how your eye feels. Each patient is different and the exact eye pressure result will vary between patients. Uncommonly pressure may increase after surgery.

How often will I need to be seen after surgery?

After the first review on the day after surgery, all patients are seen a week later and then after 3-4 weeks following the operation. In individual cases it may be necessary to see you more often.

It is very important that you attend all your clinic appointments and use your eye drops as prescribed.

What can I usually do after the operation?

- Most normal non-strenuous daily activities
- Walking (Be careful on the stairs)
- Watching television
- Reading
- Move around the house and bend carefully
- Wear sunglasses outside in windy weather and/or bright sunlight
- Sexual relations should be limited to a kiss and a cuddle until the eye is healed

What should I avoid after the operation?

For at least four weeks after the operation please avoid:

- Rubbing your eye.
- Any vigorous activity including contact sports, squash, badminton, swimming, gardening, vacuum cleaning, hot tub, whirlpool.

- No Pilates or similar exercises that include inversion.
- High-resistance wind instruments, weightlifting and breath holding;
- Driving for a four weeks after the operation or until the eye has settled, whichever is later. Before starting to drive please confirm with the surgeon that your eye pressure has stabilised. You should be able to read the new style car number plate at 20 metres and your eye should be comfortable.
- Eye make-up.
- Splashing water into the eye (please shower from the neck down. Back-wash your hair for the first week; this is to avoid getting soap or shampoo in the eye.).
- Dusty atmospheres.

When can I go back to work?

Typically someone working in an office environment would require 2 weeks off, if the postoperative course is smooth. Someone whose occupation involves heavy manual work or work in a dusty environment may require four weeks or more (e.g. construction workers, farmers). This will depend on number of factors and patients are advised individually.

Fitting new glasses

A new prescription for glasses should only be determined once pilocarpine drops have been discontinued for at least 14 days.

Usually not much prescription change is seen in patients who already had cataract surgery prior to Trabectome.

Can I travel abroad after the operation?

Going on an aircraft after a few weeks is safe. It would be preferable not to travel abroad until things have stabilised, in case leads to a complication. This period depends on how your eye recovers after the operation and advice is given individually. Please ensure you are available for regular follow up for at least 6 weeks after the surgery.

Can I wear contact lens wear after surgery?

It may be possible to restart contact lens wear around6weeks after surgery. Not everyone can continue to wear contact lenses after Trabectome surgery, so this is something to consider before having the operation.

When do I need to contact the hospital?

Contact the hospital or eye casualty urgently if:

- Your eye becomes more painful or red than on the day you went home.
- Your eye develops a sticky discharge.
- Your lids start to swell.
- Your vision begins to deteriorate.

Useful Contact details in case of urgent clinical need

Michelle Donnelly/Jayne Owen: 02476966502

Samantha Wade**:** 02476 966527

Eye Casualty at University Hospital Coventry and Warwickshire:

Telephone: 024 7696 6627

Open from: Monday to Thursday 08.30am – 4.30pm
Friday 08.30am – 4.00pm
Saturday 08.30am – 12.00am

Outside these opening times please attend the Main Accident and Emergency Department at UHCW.

Useful Contact details for further information

National Institute for Health and Care Excellence
10 Spring Gardens, London, SW1A 2BU

Telephone: (0)300 323 0140

Email: nice@nice.org.uk

Web link: https://www.nice.org.uk/guidance/ipg397/informationforpublic

Please refer to NICE Publication: Understanding NICE guidance: Treating open angle glaucoma by removing a small strip of tissue to reduce pressure within the eye

International Glaucoma Association

Woodcote House,15 Highpoint Business Village, Ashford, Kent, TN24 8DH

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Important Disclaimer

The information provided in this information booklet is designed as an adjunct to, and not a substitute for, professional healthcare advice by a qualified eye surgeon, doctor or other healthcare professional, which will be tailored to a patient's individual circumstances. While every step has been taken to compile accurate information and to keep it up to date, its correctness and completeness cannot be guaranteed.

Patients are encouraged to seek further information and or opinion, as they feel necessary, in making decision about their surgery and not rely solely on the information in this booklet.

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