

GLAUCOMA LASER SURGERY

Glaucoma is a condition of raised pressure within the eye. If left untreated in dogs, this can rapidly cause permanent blindness in only a few hours, and unfortunately glaucoma may not be identified until the eye is irreversibly blind. If glaucoma has developed in one eye, the other eye may be at a high risk of developing the same disease, although this might not occur for a number of months or even years. If glaucoma does develop, urgent medication is usually necessary to prevent blindness, but ultimately the pressure may prove uncontrollable with medical treatment alone.

The surgical option that offers the greatest success in long-term control of the intraocular pressure, involves application of a laser. Targeting the cells within the eye that produce the aqueous humour, can reduce fluid production, and the intraocular pressure can be lowered. There are two types of laser surgery which may be considered, and suitability will be determined on individual factors.

Trans-scleral cyclophotocoagulation (TSCP) - is non-invasive laser surgery in which the tissue is targeted through the wall of the eye.

Endoscopic cyclophotocoagulation (ECP) - allows for direct visualisation of the target tissue which is positioned behind the iris and it may be necessary to remove the lens to gain access. In the majority of cases it is possible to insert an artificial lens following the lasering, but occasionally this is not feasible. Without a lens the eye can still see, but vision is not as sharp.

There are significant risks to the eye from the laser surgery. Inflammation in the eye following surgery can result in retinal detachment, and if the pressure has been previously raised in the eye, it may increase further after surgery for a period. Either of these events could result in permanent blindness of the eye.

The long-term success rate of laser surgery for glaucoma is 50-60% and there is a significant failure rate where either the eye becomes blind immediately after surgery, or the pressure is not fully controlled and continues to increase over a period. However, the success rate appears to be higher for those cases where the pressure has only just started to increase. Once the pressure cannot be controlled with medication the success rate with laser surgery is significantly reduced. The anti-glaucoma medication has to be stopped to enable the surgery to be carried out, and the laser surgery may take a few weeks to take effect, during which time increased pressure may result in blindness.

Since there is a significant failure rate following surgery we do not advise laser surgery for an eye which does not yet have raised pressure. You will be supplied with medication to be administered as a matter of urgency if there are signs of glaucoma (ie loss of vision of that eye) and we normally recommend that the pressure of the eye should be checked every 3 months. If glaucoma does start to develop, we would recommend laser surgery at that stage. Delaying surgery at that time is of little benefit and may reduce the chance of long-term success.

Prior to surgery

Once surgery has been arranged, drops and sometimes tablets will be prescribed, usually for the five days immediately prior to the surgery, to ensure that there is no inflammation or infection in the eye. The patient can be fed up to and including the evening before the surgery, and water can be left down for them to drink overnight prior to their operation. Water must be withdrawn on the morning of the operation and the patient must not be fed.

The day of the operation

Do not give any medication on the morning of the surgery. We normally ask for patients to be presented to the surgery at 9.00 a.m., on the day of the operation and we aim to operate later in the morning or early in the afternoon. In the majority of cases we will keep patients hospitalised until the following day, so that the eye can be re-assessed. If we are happy with their progress and we can see that the eye is responding well, they can then return home the day following the operation, but if we have any concerns patients may be hospitalised for longer.

Post-operative care

It is necessary to apply topical medication to the eye five to six times daily post-surgery, and to administer oral tablets once or twice daily, and for dogs to wear a protective shield ('Elizabethan collar'). Patients are re-examined 4-7 days post-operatively and if making good progress the topical medication will be gradually reduced, but some will need to be continued indefinitely.

In the long-term a check-up every three months is necessary. The topical medication can be supplied by post in the interim period if necessary, or it may be possible for your own veterinary surgeon to supply you with medication.