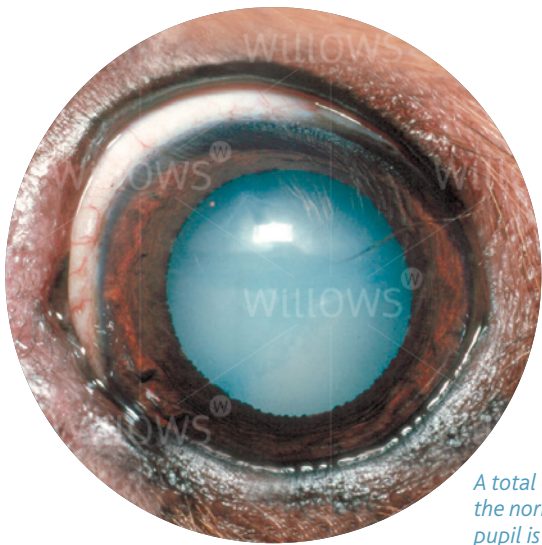


Specialist Referral Service
Willows Information Sheets

Cataract surgery





An operating microscope in use



A total cataract - the normally black pupil is bluish white

Cataract surgery

These notes do not cover every aspect of your pet's cataract.

What is cataract?

Cataract is an opacity or clouding in the lens in the eye. The opacity normally makes the lens look white.

The lens in the eye is like the lens in a camera except that, rather than being at the front as it is in a camera, the lens in the eye is deep inside it, just behind the coloured part of the eye (the iris). The lens shows up as black in the centre part of the eye (the pupil). The lens is normally crystal clear but it looks black because the darkness inside the eye shows through it. The lens is there to focus light on the sensitive tissue at the back of the eye (the retina).

Cataracts often form in both eyes and they frequently get worse. One eye is often more affected than the other, at least initially. It is not known why most cataracts develop. They are most common in older dogs and sometimes they occur due to other problems such as diabetes or disease in the back of the eye (the retina). Some cataracts are inherited.

What treatment is there for cataracts?

At the moment the only treatment for cataract is surgery. Unfortunately not every cataract is suitable for surgical treatment, and it is necessary for the eye specialist to assess each patient and decide what therapy might be possible.

Some cataracts are more complicated to treat than others, and the specialist will give guidance depending upon the circumstances in each case.

When is the best time to operate on a cataract?

The previous belief that it is best to let a cataract 'ripen' and the eye to become totally blind before removing the opaque lens (the cataract) has been proven wrong. Any cataract that is developing will cause potentially damaging inflammation in the eye due to release of lens proteins – a condition called 'lens-induced uveitis'. Lens induced uveitis can be subtle and easily missed – or, in some cases, it can be severe and associated with an obviously sore and inflamed eye.

Left untreated, even low levels of lens induced uveitis are likely to result in complications, including adhesions (sticking) between the iris and the lens, retinal detachment (where the light-sensitive tissue at the back of the eye comes away from the back of the eye and stops working) and glaucoma (increased pressure in the eye which is potentially blinding and painful). Many eyes with long-standing cataracts that have not been operated on will eventually become irreparably blind and painful, and have to be removed as a result of the effects of lens-induced uveitis.

Early cataract surgery is therefore recommended in order to avoid the detrimental effects of lens-induced uveitis, and in general surgery is carried out once a cataract starts to interfere significantly with vision. This especially applies to young and diabetic patients, where progression of cataracts can often be rapid and result in significant complications if treatment is delayed. We will endeavour to see such patients at short notice and we will also often advise the referring veterinary surgeon to start treatment with topical anti-inflammatory drugs to manage lens-induced uveitis prior to us seeing the patient.

Cataracts in older dogs or patients with very slowly progressive cataracts may be monitored, but we will often recommend the prophylactic use of anti-inflammatory drugs in such cases.

The surgery

Your dog will usually be admitted on the morning of the surgery and no breakfast should be given. Water should not be withheld overnight. Diabetic patients need special management, and this should be discussed with the vet involved. After the patient is admitted, drops are given every 15 minutes prior to surgery to prepare the eye for the operation. These drops help to dilate the pupil and reduce the effects of inflammation which always happens in dogs having cataract surgery.

Before surgery all patients have an ultrasound scan to check for problems such as retinal detachment or rupture (bursting) of the lens. These changes are more common in advanced cases. The scan is performed under sedation. Some patients may be found to be unsuitable for surgery when the ultrasound scan is carried out.

Cataract surgery is performed under a full general anaesthetic and a muscle relaxant is given so that the eye comes into the correct

position for the operation. This means that a ventilator needs to be used to inflate the chest during the procedure. We monitor your dog very carefully throughout the surgery using very modern sensitive equipment and the staff involved are specially trained in the procedure. This helps to reduce the risks of the anaesthetic to a very low level.

The operation is very delicate and involves the use of an operating microscope and tiny instruments. Two small cuts are made in the window of the eye (the cornea), near where the coloured part (the iris) joins the white part.

The lens is just behind the iris and lies in a delicate bag of tissue called the capsule. After the eye has been filled with a special gel called a viscoelastic, some of the lens capsule is taken out. The gel which is used helps to inflate the eye and protect the structures inside it from the effects of the surgery, and especially from the instruments and the ultrasound. The cataract (in other words, the lens) is then removed through the hole in the capsule using a technique called phacoemulsification – this is an ultrasound procedure using very sophisticated equipment which is exactly the same as that which would be used on a human eye. This type of surgery has been shown to give the best results in dogs' and humans' cataracts. There is currently no laser treatment for cataracts in dogs or humans.

In most patients it is possible to put in a special artificial lens where the old lens was. Plastic lenses make vision in the eye similar to the way it used to be before the cataract developed. The lenses used in our patients are made especially for dogs as they are bigger and more powerful than human lenses. They are permanent and buried deep inside the eye. The complication rate of lenses is very low indeed. For technical reasons it is not possible to implant an artificial lens in some eyes. Not having a lens implanted does not make the difference between being blind and having sight – it is similar to someone who wears glasses not putting them on.

At the end of the surgery the wounds in the eye are closed with tiny dissolving stitches. These are absorbed over the next few weeks, leaving only very small scars.

Some dogs can have both eyes operated on at the same time. The main reason for doing this is that it makes it more likely that the patient will have vision after the surgery – if something goes wrong with one eye, hopefully it will not also go wrong in the other one. However, a dog with one good eye will have overall vision which is almost as good as that in a dog with two good eyes, and so it is not essential to have both eyes operated on.

Most patients stay in over night after their operation and are discharged the following day, provided that progress is satisfactory. Most dogs can see something on the day after surgery, but it frequently takes a few weeks for vision to settle down as the eye adjusts to the effect of surgery and the presence of a plastic lens implant. In addition, there is often some clouding inside the eye which takes time to clear.

Aftercare

The aftercare following cataract surgery is intensive. All patients develop inflammation inside their eyes after surgery. This happens more in dogs than in humans. Usually there are several types of drops used. The most frequently applied drops are used six times daily initially. The number of applications gradually decreases over the next two months or so. There are also tablets to be given for a few weeks after the surgery.

Your dog will need to be kept as quiet as possible for a few weeks after the surgery, although this can obviously be difficult with many of our patients! You can only do your best in this regard. Pulling on a lead should be avoided for several weeks after surgery, as this puts up the pressure inside the eye and can encourage bleeding. Avoiding pulling around the neck is best achieved by using a harness, and it is a good idea to obtain one before the operation – it can be fitted at the time that your dog goes home. A plastic Elizabethan collar also has to be worn for about a week after the operation.

There will need to be at least four or five re-examinations after surgery. These are mostly within the first two to three months after the operation. Some patients, especially those with complicated cataracts, may need longer term treatment and more check-ups than average. These checks are all done at Willows, as the close monitoring of cases is very important in obtaining the best possible long-term result.

Risks and complications

The success rate of cataract surgery in dogs is about 90 to 95% initially. This means that 5 to 10% of patients cannot see in the operated eye after surgery. There are various reasons why not all patients have a successful outcome or may have a less straightforward recovery than normal. These include:

Inflammation

Every patient gets inflammation after surgery, no matter how smoothly the surgery goes. This is usually well controlled by the medications which are given. The occasional dog gets more inflammation than average, and this can lead to changes in the eye. These may not be of any great significance, but sometimes they can cause reduced vision. Occasionally an injection into the eye is needed to dissolve inflammatory clot material. Inflammation is the main problem in dogs after surgery, and is the major reason why frequent medications and regular post-operative check-ups are required.

Infection

This can be very serious, but is extremely rare. Antibiotics in the form of tablets and ointment are used before and after the surgery to help to prevent this.

Wound breakdown

This means that the wound gives way. Again this is an uncommon complication, but if it occurs another general anaesthetic will be required to re-stitch the wound.

Bleeding

A very small amount of bleeding at the time of surgery is not unusual and this is not a major problem. Very occasionally a larger haemorrhage can develop and this can affect vision.

Increased pressure

The pressure in the eye can occasionally go up in the first few days after surgery, but eye drops will usually settle this down very quickly. Rarely a more severe increase in pressure may develop (glaucoma). If this problem develops it will involve additional medication and possibly surgery. It can lead to blindness and even loss of the eye in severe cases which don't respond to treatment.

Ulcers

Occasionally the surface layer of the window at the front of the eye (the cornea) can partly come away after surgery. This is usually a very minor problem which normally resolves within about a week.

Corneal oedema (water-logging)

The window at the front of the eye (the cornea) can very occasionally go blue after surgery due to disturbance of its inner layer. Careful surgery and the use of viscoelastic gel (as previously mentioned) help to reduce the chances of oedema developing.

Retinal detachment

This is an uncommon complication, but if the sensitive tissue at the back of the eye detaches it can lead to loss of sight. A routine ultrasound scan before the surgery helps to identify at-risk patients.

Poor vision

Some dogs have problems inside their eyes (for example with their retina) which cannot always be detected before the surgery, and this may then mean that the surgery is not successful, or that the vision given by the surgery is not as good as it once was. Some suspect cases may have an electrical test (an electroretinogram) performed on the eyes to look for retinal problems before surgery, but this may well require sedation or even general anaesthesia and is not necessary or recommended for every case.

'After-cataract'

A small percentage of dogs that see well immediately after their surgery may not continue to do so for the rest of their lives. This later deterioration may happen for many reasons (such as some of the complications mentioned). However, one such problem is known

as after-cataract, in which a white membrane can grow across the pupil inside the eye. In most patients the amount of after-cataract which forms is not significant, but it can very occasionally affect vision in the long-term. Having a plastic lens implant has been shown to help to prevent the membrane growing across the pupil.

If after-cataract becomes very severe it can be removed surgically, although this is very rarely necessary.

Conclusion

The success rate of cataract surgery in dogs is high, and the great majority of patients do very well after their operation. It is undoubtedly a major undertaking, but the procedure is one which is commonly performed at Willows. We will be pleased to give as much help and support as possible if you decide to give your pet the opportunity of better vision.

If you have any queries or concerns, please do not hesitate to [contact us](#).

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