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## CATARACTS IN ANIMALS

### **What is a cataract?**

The lens is normally transparent, and a cataract occurs when all or part of the lens develops an opacity, or becomes cloudy. Very small cataracts can be present which do not appreciably affect vision. However cataracts can develop further and when larger they do obscure vision by preventing light pass through them. They are the most common cause of blindness in dogs, and can also affect people or any species of animal.

### **What causes cataracts?**

There are several possible causes of cataracts, and your vet may be able to find out the cause after examining the eyes. Cataracts in dogs most commonly form because they are inherited, in response to trauma (for example a cat claw injury), due to diabetes mellitus, or they may be age-related cataracts. Occasionally they may occur due to a retinal condition called Progressive Retinal Atrophy. The cause is not found in every case.

### **What treatment is available?**

There is currently no medical treatment that has been proven effective in reducing cataracts. Anecdotally, some eye drops containing the anti-oxidant N-acetyl-carnosine, may prevent cataracts from developing in normal lenses, but there is no scientific proof to back this up.

Fortunately there is a very successful surgical procedure whereby the cataractous lens can be removed using a procedure called phacoemulsification. A synthetic lens implant can then be placed in most cases. It is important to appreciate that not every eye is suitable for cataract surgery.

### **How successful is cataract surgery?**

There is approximately a 90% success rate for visual and comfortable eyes. During the initial assessments, any complicating factors found which could reduce the success rate would be pointed out to you.

### **When should cataract surgery be done?**

Success rates with cataract surgery are much higher in cataracts which are operated on sooner rather than later. The older or actively developing cataract can cause inflammation and adhesions within the eye which would complicate surgery. The cataracts also get harder with time, whereas they are generally softer when they first occur. Harder lenses require a lot more ultrasound energy to break them up, therefore surgery times are prolonged and complications are more likely.

### **How soon can it be done?**

After an initial assessment, surgery is generally carried out within a couple of weeks. Your animal may require a pre-anaesthetic blood test (this can be done by us or at your own vets) to ensure that he or she is healthy enough for the procedure. Gonioscopy is a test done to check that the drainage angle is normal, in other words that fluid can drain freely from the eye, making glaucoma after surgery less likely. An ultrasound is carried out on the eyes to measure



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the lenses and to assess for retinal detachment or vitreal abnormalities. An electroretinogram is performed which is a test of retinal function, to ensure that the retina which cannot be seen is capable of seeing after surgery. It is possible to have surgery on both eyes under the same general anaesthetic. Surgery for one eye takes approximately 45 minutes to an hour, and for both eyes takes approximately one and a half to two hours.

### **What is involved in cataract surgery?**

The animal is admitted and may be hospitalised for a few days after the procedure, depending on the individual case. The surgery requires a general anaesthetic and neuromuscular blockade in order for the eye to be completely relaxed. Two very small incisions are made in the eye at the outer edge of the clear cornea. Specialised phacoemulsification equipment is used to ultrasonically fragment and remove the defective lens material. In most cases, an artificial intraocular lens is implanted to replace the opaque lens. This allows a very good quality of vision to be restored to the pet. Occasionally this is not possible, and in this case the animal will still have vision restored, although he or she will be long-sighted. The incisions are closed with very fine dissolvable suture material which does not need to be later removed.

### **What are the risks of surgery?**

Cataract surgery using the phacoemulsification is a very successful procedure, and the majority of them do very well. However there are inherent risks involved with any anaesthesia or surgical procedure. These are outlined below:

- There is a risk to every animal, no matter how healthy, when they are administered a general anaesthetic. With new developments in anaesthetic drugs and monitoring equipment, this risk is small. However an animal can die during or after general anaesthesia.
- Surgery can cause an increase in the pressure inside the eye (intraocular pressure) and can result in glaucoma. Glaucoma is a painful and blinding condition. In approximately 20% of cases, the pressure does increase after surgery, but with intensive monitoring and treatment this is most often successfully controlled. These cases may require glaucoma drops for a few days to reduce the likelihood of this happening again. Glaucoma may occur weeks or months after surgery also, and in the worst cases which will not respond to medical treatment, removal of the eye may have to be done in rare cases.
- Inflammation inside the eye (termed 'uveitis') is inevitable after surgery, which is why your animal will need eye drops and oral medication after surgery. This uveitis is usually controllable, but it can result in an inflammatory product called fibrin accumulating in the eye. This is usually controllable with eye drops, but sometimes a procedure is required to dissolve it. Under sedation, a substance called Tissue Plasminogen Activator may be injected inside the eye, which rapidly reduces the fibrin.
- Retinal detachment can occur days to weeks after surgery. This usually results in blindness although occasionally the retina will reattach. Retinal detachment is not painful.
- Intraocular infection is a rare but serious complication, which could result in your pet losing the affected eye.
- Capsular opacification, or "secondary cataract," refers to the cloudiness of the bag surrounding the prosthetic lens. Young animals in particular may have some microscopic lens cells left behind that may re-grow, causing ocular discomfort. This opacity uncommonly occurs to such an extent whereby it causes visual problems. A second irrigation / aspiration procedure under general anaesthesia may sometimes be required to correct this complication.



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### **How much is surgery?**

The cost depends on several factors, such as how long the animal will be hospitalised, the weight of the animal, whether or not an intraocular lens is placed, and whether post-operative complications, such as a high pressure within the eye after surgery, develop. The anticipated cost will be discussed clearly with you once the initial assessment has been made.

### **What aftercare is involved?**

Each case is treated individually, and therefore the aftercare does vary. In general, the following guidelines should be considered:

- The animal usually stays the night of surgery and is examined the morning after surgery. Some cases are hospitalised for a few days.
- A buster collar will be fitted in order to prevent the animal from traumatising the eyes. This needs to be left on 24 hours a day for the first two weeks after surgery.
- Exercise needs to be very restricted, with lead walks only. The animal should not be encouraged to jump up on things or play with toys (especially toys that involve the animal shaking the head).
- A harness should be used for attaching to the lead rather than a collar, as this avoids any pressure on the neck.
- Medication is essential after surgery to ensure that the eyes have the best chance of a good result. Oral antibiotics and anti-inflammatories are prescribed in all cases, and should be given as directed. Eye drops are also needed four times daily for approximately four weeks after surgery, and then three times daily for the next month, twice daily for the next month and then once daily for another three months. However, each case is assessed on an individual basis and the frequency of administration may be adjusted in response to the appearance of the eye.
- Re-examination visits are required usually one week, one month, three months, six months and one year after surgery, with annual checks recommended. However, extra visits may be needed should your animal experience eye discomfort, and it is important that the animal would be presented as soon as possible after changes causing concern are noted.

### **What if surgery is not done?**

Cataract surgery is an elective procedure and will only be carried out if the animal is healthy enough and is likely to benefit from the procedure by having sight restored. Cataracts tend to cause some inflammation inside the eye, termed 'lens-induced uveitis'. This may be low-grade and require no treatment or will more likely require daily eye drops. However it may be severe and cause pain, retinal detachment or glaucoma. Lens-induced uveitis may render the eye unsuitable for surgery at a later date. Regular check-ups would be advised in order to ensure that your animal is as comfortable as possible. Blindness does initially reduce an animal's quality of life but they are remarkably adaptable and can lead a very happy life with no vision. Blindness alone is not usually an indication for euthanasia. Please ask for further information on coping with a blind pet if required.