



PURINA Pro Club

Cocker Spaniel Update

Vol. 7, No. 1 ■ June 2009

Breeders Should Select Against Cockers with Inherited Eye Diseases

The Cocker Spaniel's beautiful, dark eyes may be one of his most endearing features, but when a Cocker Spaniel inherits an eye disease like glaucoma, progressive retinal atrophy (PRA) or cataracts, those eyes become a source of suffering.

The good news is that there are now tools available to assist breeders in the prevention and reduction of eye diseases in their breeding programs. With careful breeding practices, breeders can potentially one day reduce the vast majority of eye diseases in Cocker Spaniels. Here is a review of those tools.

Managing Glaucoma

Glaucoma is considered one of the most painful and devastating canine eye diseases. As with humans, the canine eye maintains proper intraocular pressure by draining fluid continually produced in the eye. Cockers with glaucoma inherit a problem with the drainage channel that disperses the flow of fluid from the eye and causes fluid and pressure build-up within the eyeball.

Greg Acland, BVSc., DACVO, pro-

fessor of medical genetics at The Baker Institute for Animal Health of Cornell University, says glaucoma is especially painful in Cocker Spaniels because it tends to be severe and difficult to treat.

The condition may be primary, an inherited disease that destroys the optic nerve, or secondary, a disease that results from another disorder such as advanced cataracts, eye cancer, lens luxation, chronic retinal detachment or trauma. Primary glaucoma is subdivided into open-angle and closed-angle types.

Open-angle glaucoma, more common in humans, progresses slowly. It is characterized by increased pressure in the eye despite normal-appearing drainage angles. Closed-angle glaucoma occurs when the drainage angles are abnormally narrowed or blocked. This causes pressure to quickly build inside the eye, damaging the optic nerve and cutting off blood flow to the retina. An acute condition, closed-angle glaucoma can cause blindness within hours.

Cocker Spaniels are more prone to developing acute closed-angle glaucoma.

Signs include redness of the eyeball, cloudiness of the cornea giving the eye a bluish appearance, semi-dilated pupil, squinting, excessive tears, hanging the head down, and loss of vision.

If the pressure remains elevated for more than a few hours, permanent damage or blindness can result.

Immediate treatment by a veterinarian is critical to save the eye, however, only a small percentage of affected dogs regain vision. Because glaucoma cannot be cured, treatment is aimed at managing the condition.

"We try very hard to instill in veterinarians that if a dog from a breed susceptible to glaucoma comes in with an inflamed eye, they should first make sure it's not glaucoma.

Time is of the essence in treating a dog with glaucoma," says Samuel Vainisi, D.V.M., DACVO, a semi-retired professor of comparative ophthalmology at the University of Illinois College of Medicine in Chicago and private-practice veterinarian in Denmark, Wis.

Emergency treatment can sometimes restore vision in an affected eye. Intensive pharmaceutical therapy with eye drops and/or surgical intervention are used. "Two types of surgery are used for decreasing the fluid in the eye," Vainisi explains. "Laser surgery or cryosurgery destroys about 60 to 75 percent of the fluid-producing tissue so that the narrowed drainage angles can keep up with fluid production, reducing pressure and ultimately pain and tissue damage."

Other surgical options are used if the eye is already blind. Evisceration is a process that removes the interior of the eye but leaves intact the outer wall (cornea and sclera). The veterinary surgeon then inserts a silicone sphere into the interior of the eye to keep it from shrinking.

"The eye looks quite good and is very comfortable," says Vainisi, who prefers this method to complete eyeball removal.

Chemical ablation is less invasive and generally used for older or ill animals because it does not require general anesthesia. "We give dogs a

ASC Futurity Program Is One of First to Include Health Testing

The American Spaniel Club's (ASC) Futurity program represents a long-standing tradition of recognizing the most promising litters. In 2003, the ASC became one of the first parent clubs to require health testing for Futurity-nominated litters.

"The ASC Futurity program is a very prestigious program," says ASC president Charles Born of Los Gatos, Calif. "It has always been a breeder showcase in which Cockers with exceptional conformation are nominated. We believe, however, it's not enough to breed beautiful animals, they also should be healthy."

Thus, the new rules require health certificates for both the sire and dam of nominated litters. This means the dogs must be at least 2 years old, the minimum age to receive health clearance. The goal was to encourage breeding mature animals after their health status has been established.

In 2005, the ASC board of directors added a requirement that both the sire and dam must have had their eyes and hips certified one year before being bred. "Initially, these requirements hurt our entry somewhat," Born says. "However, we feel these requirements send a strong signal that as a club we value health as well as good conformation."

The practice will continue when the club announces the start of its Register of Merit program that will recognize top-producing sires and dams, but will also require health clearances. "Nominees must be at least 8 years old because this is the age when eyes can be permanently registered as clear without further testing," Born says.

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local anesthetic along the side of the eye and inject a drug into the eye that kills the interior part of the eye that produces the fluid and causes pain. The eye becomes soft and comfortable again, but may shrink a little in size," Vainisi says.

Eyeball removal doesn't bother a dog in considerable pain, but owners sometimes object. "My philosophy is that if the eye is blind and painful, it's better out," says Acland, who prefers this method. "We aren't very good at assessing chronic pain in dogs, but what is observed routinely is that after the eye is removed, a dog acts younger because the pain is gone and he feels better."

Glaucoma in one eye is almost always followed just weeks or months later by glaucoma in the other eye. To help prevent glaucoma, a precautionary prophylactic treatment is performed in the good eye. "Research at the University of Wisconsin demonstrated that dogs on prophylactic treatment versus dogs not on treatment went considerably longer before a second attack of glaucoma in the other eye," says Vainisi.

Though the mode of inheritance of glaucoma is not known, breeders are encouraged to have a gonioscopy performed before breeding Cocker Spaniels. "We know glaucoma is genetic," Vainisi says. "Gonioscopy performed before the onset of signs and before breeding a dog can help to predict whether an animal is likely to develop glaucoma later."

During a gonioscopy, the veterinary ophthalmologist using a special lens looks inside the eye and determines the condition of the drainage angles. Though the test is not part of the Canine Eye Registration Foundation (CERF) examination, it is recommended for breeds prone to glaucoma.

"This test can help breeders decide which dogs to include in their breeding programs," says Vainisi. "Any dog showing signs of developing glaucoma should not be bred."

Testing for the prcd Form of PRA

Progressive retinal atrophy, or PRA, is a genetic disorder that refers to a large group of eye diseases affecting many breeds of dog and involving gradual deterioration of the retina, eventually leading to blindness. The retina, located at the back of the eye, takes the light gathered and focused by the other eye structures and converts it into electrical nerve signals to send it to the optic nerve and then the brain for interpretation.

"Cocker Spaniels tend to develop a type of PRA rare in humans but common in many dog breeds known as progressive rod-cone degeneration (prcd)," says Acland, whose research, funded in part by the American Spaniel Club Foundation, maps the genes that cause hereditary retinal disorders.

In Cockers, PRA has a variable age of onset, from 18 months to 7 years. PRA is not painful, and the outward appearance of the eye is often normal. Because of the disease's gradual progression, early signs are frequently overlooked. An animal with PRA first experiences night blindness because rod cells inside the eye that help them see in low light tend to degenerate first.

"Dogs may have trouble, especially going from a lit to dark situation," Acland says. "They may stumble on stairs, especially in unfamiliar surroundings. Tunnel vision comes next. It is most obvious in dogs that need their peripheral vision, such as agility competitors. Other dogs can usually compensate."

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An ophthalmologist can screen for PRA before signs become obvious. "In a Cocker Spaniel, those changes may not be apparent until the dog is 5 years old, but if an ophthalmologist is suspicious, he can perform an ERG (electroretinogram), which picks up evidence of the disease long before the onset of signs," says Acland.

Secondary cataracts associated with advanced PRA are sometimes mistaken as the cause of blindness in older dogs. "When that happens, it's often the cataract that knocks out vision," Acland says. "The owner may believe the cataract caused the blindness. Not until the ophthalmologist looks carefully or does an ERG is PRA diagnosed as the underlying problem."

There is no treatment or cure to slow the progression of PRA. However, the gene that causes the prcd form of PRA has been identified, and a DNA test is available from OptiGen to determine whether a dog is affected, a carrier or clear. For information, visit www.optigen.com.

The test enables breeders to reduce disease incidence. For example, breeding carriers to clear dogs will produce litters in which half the dogs are carriers and half are clear. Breeding affected dogs to clear dogs will produce all carriers. Through proper selection, the disease can eventually be eliminated.

Recognizing Signs of Cataracts

Cataracts are a condition in which the clear lens of the eye, used for focusing, develops cloudy spots that gradually inhibit light from reaching the retina. Cataracts at first may only affect a small part of the lens and not impair vision. As they mature, cataracts may cover the entire lens and cause loss of functional vision. Believed to be an inherited condition, cataracts may develop in one or both eyes

quickly over several weeks or slowly over several years.

"Cockers can develop cataracts for a host of reasons," says Acland. "Some are primary, and others are secondary to conditions like progressive retinal atrophy or diabetes mellitus."

Veterinary ophthalmologists classify cataracts according to their position in the eye, age of onset and progression. "Cataracts don't always progress, and some juvenile cataracts can be small, permanent and stationary, whereas those that occur in the equator of the lens, where the lens is metabolically active or growing, can and usually do progress causing severe visual deficit," Acland says.

Though not painful, cataracts can result in blindness and associated trauma. "An eye with good vision protects itself by blinking," Acland explains. "A blind eye is prone to injury from twigs, dust, dirt and wind. Sometimes a mature cataract can even leak protein into the eye and provoke inflammation that could lead to secondary glaucoma."

Surgery to remove cataracts in dogs is almost identical to cataract surgery in humans. Advances in microsurgery make the procedure appropriate for younger, healthier dogs, resulting in more retained vision and greater success.

"Ophthalmologists who specialize in this surgery can take the lens out of the eye and replace it with an artificial lens, restoring vision effectively," says Acland. "The surgery is a major part of many veterinary ophthalmology practices. Postoperative anti-inflammatory medications help dogs recover quickly."

Prevention is preferred to surgery, but no genetic test identifies carriers or dogs likely to develop cataracts. However, veterinary ophthalmologists can recognize signs of cataracts in dogs as young as 1 year of age.

"This is one of the reasons why CERF exams are so important," Vainisi says. "Recognizing early signs of cataracts allows breeders to not breed these dogs. Breeder vigilance in not breeding affected dogs is definitely helping to reduce cataracts."

Breeders and owners both wish for healthy dogs that retain their vision throughout their lives. This is why annual CERF examinations, as well as gonioscopy and prcd-PRA tests, are recommended for Cocker Spaniels being considered for breeding, starting at 1 year of age. The potential of producing healthy, bright-eyed Cocker Spaniel puppies is the reward. ■

Purina appreciates the support of the American Spaniel Club and particularly Bobbie Kolehouse, director of the grants committee and member of the scientific research committee of the ASC Foundation, in helping to identify topics for the *Purina Pro Club Cocker Spaniel Update* newsletter.