

# The Cavalier King Charles Spaniel

## Providing Compassionate and Comprehensive Care for the Cavalier

by Kristine McComis



The Cavalier King Charles Spaniel is an affectionate, energetic, intelligent dog with the cuteness to melt anyone's heart. No wonder so many people fall in love with and adopt these small dogs, which were named for King Charles II, who ruled Great Britain from 1660-1685. However, the breed comes with its own idiosyncrasies and common medical problems. When selecting a Cavalier, as with any purebred dog, potential owners should visit a reputable breeder and check the medical history of several previous generations. Even a Cavalier with an impeccable lineage can be prone to conditions that are naturally prevalent in the breed. With proper veterinary care, these conditions can be managed or treated, and thanks to ongoing research, new therapies are being discovered to help Cavaliers lead longer and healthier lives.

The Ohio State University Veterinary Hospital has board certified veterinary specialists in areas such as dermatology and otology, internal medicine, cardiology and interventional medicine, radiology, medical and radiation oncology, ophthalmology, surgery, neurology, and neurosurgery, who have become especially knowledgeable about Cavaliers from treating them in the clinic. In addition, reproductive medicine specialists and behavioral medicine experts at the hospital may be helpful to owners and breeders of Cavaliers. Dr. Lynette Cole, associate professor of Dermatology, is a Cavalier owner herself and researches common otological ailments in the breed. She is also the Ohio coordinator for the Cavalier Rescue USA organization, which shelters, provides medical care, and adopts Cavaliers that were relinquished by previous owners. She also volunteers for Lucky Star Cavalier Rescue and is a member of the Cavalier King Charles Spaniel Club of Central Ohio (CKCSCCO).

"Since my research focus is ear disease, I was intrigued when I read the 2003 article in the *Journal of Small Animal Practice* by Stern-Bertholz titled Primary secretory otitis media [PSOM] in the Cavalier King Charles spaniel: a review of 61 cases," Dr. Cole recalled. "We began to see some Cavaliers though the dermatology service as well as neurology service with this disease, and a study proposal evaluating Cavaliers for PSOM, written by myself and my co-investigators, was funded by the American Cavalier King Charles Spaniel Club Charitable Trust and The Ohio State University Paladin Fund [see below for more information on the PSOM study]. I was not very familiar with the Cavalier breed, and was amazed at the love and dedication the owners had for these dogs. I had been 'dogless' for 12 years, and had not found the 'right' breed of dog for our family. However, after the 10th Cavalier entered my study, I absolutely knew that I had to have a Cavalier (or two, since no one can have just one). I am dedicated to the well-being of Cavaliers through my research in the clinic as well as in my personal life."



Dr. Cole adopted a handsome Ruby boy named Red Stripe. Her second Cavalier is a petite Ruby girl named Layla and her third Cavalier was a beautiful black and tan girl named Stella (she passed away).

At Ohio State, our world renowned faculty clinicians lead teams of skilled and compassionate caregivers comprised of veterinarians in advanced clinical programs (residents and interns), registered veterinary technicians, support staff, and students, who are ready to treat your Cavalier companions for anything from wellness checks and elective surgery, to on-going ailments and even emergency conditions. We offer state-of-the-art facilities and diagnostic equipment to determine the nature of your pet's issue(s) and the latest techniques in treating and improving his or her quality of life. We are open 24/7 for any emergency that may arise. Our goal is to provide medical information, awareness, and encouragement to Cavalier owners and breeders, because we are as dedicated to your pet's health care as you are. We hope the Ohio State Veterinary Hospital can be part of fostering your Cavalier's well-being.

The articles in this publication provide a glimpse of services available and investigations that are either underway or could be conducted to help improve the health of Cavaliers. We seek ways to advance knowledge and understand medical conditions afflicting Cavaliers to more effectively diagnose and treat them. To learn more about opportunities to help support the health and well-being of Cavaliers through funding investigations, new technologies or other avenues, please contact Dr. Rustin Moore, chair of the Department of Veterinary Clinical Sciences, by phone (614-292-7105) or e-mail (Rustin.Moore@cvm.osu.edu).

**Veterinary Hospital**  
601 Vernon L. Tharp St.  
Columbus, OH 43210  
614-292-3551 Companion Animal  
[vet.osu.edu/hospital.htm](http://vet.osu.edu/hospital.htm)



## Primary Secretory Otitis Media (PSOM) in the Cavalier King Charles Spaniel

by Dr. Lynette Cole, DVM, MS, DACVD, Associate Professor, Dermatology

PSOM is a form of otitis media (inflammation of the middle ear) that seems to affect the Cavalier King Charles Spaniel (CKCs) in particular. Due to the mucoid nature of the disease and the fact that it is uncommonly associated with disease of the external ear canal, the condition has been referred to as PSOM or “glue ear.”

The presenting signs of PSOM may include pain localized to the head and neck, balance problems, drooping of the ear or lip, drooling saliva, inability to blink the eye, involuntary rapid movement of the eyeball, head tilt and/or hearing loss. However, these signs are also symptoms of syringomyelia, while hearing loss alone may be due to progressive hereditary deafness, both of which are diseases identified in the CKCs.

The best tests for diagnosis of PSOM include CT scans, MRI and radiographs, which inform us if there is fluid, mucus, pus, or a mass in the middle ear. To identify the material seen on the CT scan or MRI, a myringotomy (incision into the ear drum) must be performed, if the ear drum is intact. The best treatment option for PSOM is to flush the mucus out of the middle ear once the myringotomy has been performed.

There is an ongoing study at the Veterinary Hospital on PSOM, conducted by Dr. Lynette Cole. If your Cavalier is experiencing any of the aforementioned signs, and you are interested in enrolling your Cavalier in the study, contact her at [cole.143@osu.edu](mailto:cole.143@osu.edu) or 614-292-3551, to learn whether your Cavalier qualifies for the study.

## Patellar Luxation

by Bianca Hettlich, DVM, DACVS, Assistant Professor, Small Animal Surgery

Patellar luxation, or dislocation of the kneecap, is a condition typically affecting young small and toy breed dogs such as the Cavalier, and can also be found in large breed dogs and cats. While patellar luxation can be caused by trauma, it is usually due to conformational deformities of the rear limbs that affect muscle pull and alignment, leading to ‘slippage’ of the kneecap out of the centered groove of the femur. This luxation can occur in different severity grades (one through four) with the mildest form only ‘slipping’ out of position when forced, and the most severe form being permanently fixed in a luxated position. The higher the grade, the more obvious the clinical signs become.

Most dogs will show intermittent lameness with skipping of steps, holding a rear limb at an abnormal angle or ‘locking’ up the knee joint before returning to a normal gait. Patellar luxation often occurs bilaterally and signs may be seen in both legs. If cartilage becomes abraded from constant rubbing, lameness and pain will be more severe. With grade three and four luxations, dogs may also experience a mechanical lameness due to alteration of their muscle-pulley mechanism.

Treatment can be conservative for low grade patellar luxations, especially if dogs are not showing persistent lameness. For more severe grades, surgical correction is usually recommended. The goal of surgery is to realign the ‘patella-mechanism’ and allow the kneecap and its main muscles to track in the centered groove. Surgery may involve deepening the groove to “capture” the patella, moving the muscle attachment of the patella into better alignment, and adjusting joint capsule tension. If severe deformation of the bone is present, correction of angulation may have to be performed. The good news is that with proper surgery, most dogs have a good to excellent prognosis for return to normal function. The orthopedic surgeons at Ohio State perform several of these surgeries each week in a variety of dogs. More information about our surgery service can be found at [vet.osu.edu/774.htm](http://vet.osu.edu/774.htm).



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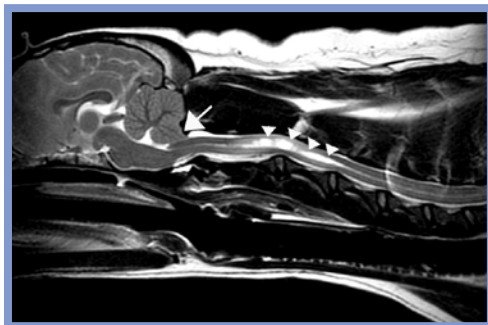
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## Chiari-like Malformation and Syringomyelia

by Ronaldo da Costa, DVM, MSc, PhD, DACVIM, Assistant Professor, Neurology and Neurosurgery  
Valerie Samii, DVM, DACVR, Associate Professor, Radiology and Diagnostic Imaging

Chiari-like Malformation and Syringomyelia (CM/SM) is a neurologic condition that commonly occurs in Cavalier King Charles Spaniels. It is characterized by an accumulation of spinal fluid within the spinal cord (syrinx) in the neck region. The cause for the syrinx formation is believed to be a malformation of the brain and skull. Essentially, the brain may be too big for the skull, and the back of skull cannot accommodate the brain. This leads to shifting of the back part of the brain (cerebellar herniation) which then interferes with the movement of spinal fluid, resulting in accumulation of spinal fluid within the spinal cord. This fluid accumulation leads to clinical signs of the disease. Interestingly, the brain and skull malformation are also present in many asymptomatic dogs. It is unknown why some dogs develop clinical signs of the disease and others do not.



An MRI of a two-year-old male Cavalier King Charles Spaniel with Chiari-like Malformation and Syringomyelia, indicated by arrow.

A common clinical sign in the affected dogs is discomfort or pain in the neck region. The pain is often manifested by scratching on one side, many times without making skin contact. This symptom is the reason the disease is also referred to as “neck scratcher’s disease.” Facial pain can also be seen, which can be confused with ear pain. The pain can be severely debilitating. Neurological signs can also include front limb weakness, pelvic limb ataxia, sensory receptor deficits, facial nerve paralysis, deafness, seizures, balance deficits, vision deficits, and head tremors. The age of onset of the signs is usually between five months and three years, but in more severe cases, the onset is usually by two years of age.

The only way to conclusively diagnose CM/SM is by performing an MRI of the brain and neck. CM/SM is an inherited disease, so affected dogs should not be used for breeding. Unfortunately, the exact mode of inheritance is still unknown. Treatment of CM/SM can be provided either medically or surgically. There are several drugs that can be used to control the pain of dogs with CM/SM. Surgical treatment is usually indicated after a dog fails to improve with medical management.

Radiologists at the Veterinary Hospital are currently conducting studies regarding this condition. We are evaluating skull shape by measuring various aspects of the caudal braincase in the Cavalier with computed tomography (CT) and also comparing the skull shape in dogs with and without clinical symptoms consistent with CM/SM. Computed tomography is excellent for imaging bone and preferred over the MRI for this purpose. Our goal is to determine if there are significant differences in dimensional measurements of the caudal skull in clinically normal and abnormal dogs based on neurological examinations. The more studies we can conduct, the better chance we have to discover better treatments and preventive measures for this disease.

If you suspect your dog may be experiencing symptoms of CM/SM, you or your veterinarian can make an appointment with our neurology service, staffed by Dr. Ronaldo da Costa and Dr. Sarah Moore. For more information visit: [vet.osu.edu/787.htm](http://vet.osu.edu/787.htm).



## Ocular Problems in the Cavalier King Charles Spaniel

By Anne Gemensky Metzler, DVM, MS, DACVO, Associate Professor, Ophthalmology

The beautiful soft brown eyes of a Cavalier win over many people (myself included). However, they can have some inherited and acquired ophthalmic problems. One of the most common inherited disorders is corneal dystrophy, bilateral, round to oval fatty deposits in or near the central cornea. It affects up to eight percent of breeding dogs. The deposits usually appear between two and five years of age. They are not painful and typically small, and therefore don't impair vision and are usually non-progressive. No treatment is necessary; however, in some cases, a low-fat diet can result in decreased size and/or opacity of the deposits.

Another common inherited problem is retinal dysplasia, which is abnormal development of the retina. Three forms exist: retinal folds (small linear folds in the retina),

geographic retinal dysplasia (larger round, oval or curvilinear areas of retinal folding and subretinal fluid) and retinal non-attachment. Retinal folds are the most common form seen in Cavaliers, observed in approximately 10 percent of breeding dogs. Retinal folds do not significantly impair vision and do not progress.

Congenital or juvenile onset cataracts are diagnosed in about three percent of Cavaliers. Onset is often before one year of age. These cataracts may significantly impair vision and require cataract surgery. Non-progressive types of cataracts that do not significantly impair vision are also seen.

Distichia (abnormal hairs growing from the eyelid margin), corneal ulcers and keratoconjunctivitis sicca (KCS or dry eye)

are also commonly seen in Cavaliers. Distichia do not typically cause irritation or secondary problems and usually do not require treatment. Signs of KCS include conjunctival redness, mucoid discharge, squinting and corneal ulcers or opacity. If diagnosed early, KCS has a good response to treatment with topical medications and tear supplements.

Take a close look the next time your Cavalier gives you a loving gaze and contact your local veterinarian or the ophthalmologists at the Ohio State Veterinary Hospital if you have questions or concerns. More information about the high-quality veterinary care the Ohio State Comparative Ophthalmology service can provide is available at [vet.osu.edu/584.htm](http://vet.osu.edu/584.htm).



## Cardiovascular Disease in the Cavalier King Charles Spaniel

by Brian Scansen, DVM, MS, DACVIM  
Assistant Professor, Cardiology and Interventional Medicine

Heart disease is an unfortunately prevalent condition in the Cavalier King Charles Spaniel. Epidemiologic studies have shown that 20 to 40 percent of adult Cavaliers have heart murmurs. With age, the percentage increases; 100 percent of Cavaliers over age 10 have heart disease of varying severity. A survey by the United Kingdom Kennel Club found that heart disease was the most common cause of mortality, accounting for over 42 percent of the deaths reported in the breed.

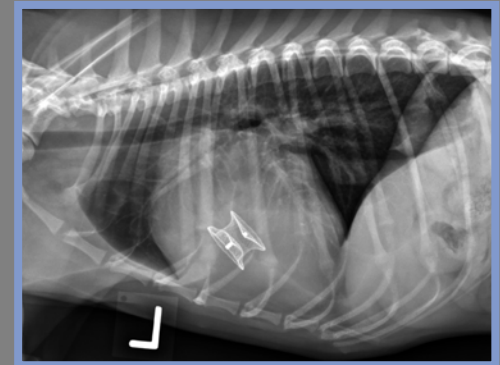
The most common heart disease of the Cavalier is myxomatous mitral valve degeneration (MMVD), in which one or two heart valves become thickened with age, resulting in leakage across the valve. Dogs afflicted with MMVD display signs of exercise intolerance, cough, respiratory distress, and rarely, sudden death. Medications can control the complications of MMVD and cardiologists at Ohio State have successfully treated dogs in heart failure for several years. Unfortunately the disease is progressive and no cure is currently available. We have contributed to research on this devastating disease with recent studies that utilize ultrasound to predict the development of heart failure as well as serving on the national consensus panel for the treatment of MMVD in dogs. Currently we are collaborating with physicians and industry to develop novel devices to repair these leaky

valves as well as helping to evaluate medications being tested for this disease.

Not always restricted to older dogs, heart disease also afflicts Cavalier puppies. Congenital heart defects are frequently seen in Cavaliers as a result of abnormal development in utero. The more common congenital heart diseases of the Cavalier include pulmonic stenosis, patent ductus arteriosus, and ventricular septal defect.

Ventricular septal defect is a hole between the two lower chambers of the heart. Previously, open-heart surgery was the only option to close this hole, and was associated with high cost and substantial complications. We recently performed the first percutaneous closure of a ventricular septal defect in a young Cavalier named Sparky using a device delivered via a minimally invasive approach. With the help of pediatric interventional cardiologists and cardiothoracic surgeons, the hole was closed with an umbrella-like device delivered with catheters, avoiding open-heart surgery. Read more about Sparky's surgery at [vet.osu.edu/5614.htm](http://vet.osu.edu/5614.htm).

Although heart disease is common in the Cavalier, we continue to develop new techniques and to test new medications to treat and, in some cases, cure cardiac diseases in this breed. With your support, much more can be done to help these little dogs with big hearts live longer and healthier lives.



Sparky, the Cavalier was born with a ventricular septal defect that was closed with a novel device.



Drs. Rick Cober and Brian Scansen with Sparky.

## Reproductive Medicine



The Theriogenology and Reproductive Medicine service at the Ohio State Veterinary Hospital provides several reproductive services to dog owners and breeders. In addition to providing assistance with breeding management and artificial insemination, the service also utilizes advanced reproductive ultrasonography and endoscopy to assist in the diagnosis of conditions leading to reproductive disorders and infertility. Semen freezing is currently available for all dogs, including breeds registered with the American Kennel Club. Dystocia (difficult birth), pyometra (uterine infection), and other conditions of the reproductive tract are managed by the Veterinary Hospital clinicians and staff. For more information, contact Drs. Carlos Pinto or Marco da Silva at 614-292-6661 or visit the reproductive services web page at [vet.osu.edu/654.htm](http://vet.osu.edu/654.htm).