HEARTWORM DISEASE IN CATS

BASICS

OVERVIEW
• Disease caused by infection with heartworms
• *Dirofilaria immitis* is the scientific name for the heartworm
• Heartworms are spread through the bite of mosquitoes carrying infective heartworm larvae; the life cycle of the heartworm in the dog will be used to help with understanding the disease in cats, since many of the findings in cats are compared to dogs—the heartworm larvae migrate in the dog's body and reach the heart and blood vessels of the lungs in approximately 6 months; adult heartworms grow to about 12 inches long; adult heartworms reproduce and may release immature heartworms (known as "microfilaria") into the blood of the dog; when a mosquito bites an infected dog, it takes in the microfilaria with its blood meal; the microfilaria undergo development in the mosquito and become infective heartworm larvae, and the life cycle continues
• Presence of immature heartworms (microfilaria) in the blood (known as "microfilaremia") is uncommon in cats (seen in less than 20% of infected cats)
• Number of cases of heartworm disease in cats is one-tenth that of dogs in a particular geographic location
• Most cats have only a few heartworms present
• Heartworms are physically smaller and have a shorter life span in cats than heartworms in dogs

SIGNALMENT/DESCRIPTION of ANIMAL

Species
• Cats

Predominant Sex
• Male cats more commonly infected than are female cats

SIGNS/OBSERVED CHANGES in the ANIMAL
• Coughing
• Difficulty breathing (known as "dyspnea")
• Vomiting
• Blood clots to the lungs (known as "pulmonary thromboembolism") frequently result in sudden (acute) breathing failure and death
• Vomiting and breathing abnormalities predominate in long-term (chronic) heartworm disease in cats
• Physical examination usually normal
• May hear increased lung sounds when listening to the chest with a stethoscope

CAUSES
• Infection with the heartworm, *Dirofilaria immitis*

RISK FACTORS
• Outdoor cats at increased risk (2:1) of infection
• Feline leukemia virus (FeLV) infection is not a risk factor for heartworm infection in cats

TREATMENT

HEALTH CARE
• Currently no medical treatment to kill the adult heartworms in cats is approved or recommended
• Cats with clinical signs of heartworm disease should be stabilized prior to consideration of worm extraction
• Spontaneous "cure" is probably much more common in cats than dogs (probably due to the shorter heartworm life span in cats as compared to dogs)

SURGERY
• Surgical removal of heartworms or catheter-based extraction of heartworms

MEDICATIONS
Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

• Medical treatment to kill the adult heartworms in cats is not approved or recommended

Initial Stabilization
- Supplemental oxygen
- Theophylline (sustained release formulation)
- Prednisolone
- Doxycycline therapy; may reduce severity of lung inflammation secondary to worm death
- Cautiously administer balanced fluids, if indicated

Blood Clots to the Lungs (Pulmonary Thromboembolism)
- Supportive care for blood clots to the lungs (same as initial stabilization)

FOLLOW-UP CARE

PATIENT MONITORING
- Serial evaluation of clinical response
- Chest X-rays
- Heartworm antigen and antibody blood tests are most informative

PREVENTIONS AND AVOIDANCE
- Ivermectin (Heartgard® for Cats)—administered by mouth every 30 days
- Milbemycin oxime (Interceptor®)—administered by mouth every 30 days
- Selamectin (Revolution®)—applied to the skin every 30 days

POSSIBLE COMPLICATIONS
- Blood clots to the lungs (pulmonary thromboembolism)
- Sudden (acute) breathing failure and death

KEY POINTS
- Number of cases of heartworm disease in cats is one-tenth that of dogs in a particular geographic location
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