

Feline Heartworm—Rethinking Heartworm in Cats

Heartworm disease in cats is caused by *Dirofilaria immitis*. Cats are exposed to heartworms at any location in the country having heartworm infections in dogs. Heartworm infections have even been reported in strictly indoor cats.

There are significant differences between feline and canine heartworm infections. Clinical features in the feline include variable respiratory signs, gastrointestinal signs including vomiting, transient nonspecific signs, as well as acute death. Typically, infected cats have only one or two adult heartworms, but this low worm burden can still result in cardiopulmonary problems. This is due to the relatively small size of the feline heart and lumen of the pulmonary vessels in comparison to the size of the heartworm as well as the unique response of the cat to the heartworm. As a consequence of felines NOT being the preferred heartworm host, cats usually develop occult infections such that circulating microfilariae are rarely seen. In contrast to canine hosts, feline patients can present with extensive pulmonary inflammation from larval migration in the absence of an adult heartworm.

“When signs are evident, they usually develop during two stages of the disease: 1) arrival of heartworms in the pulmonary vasculature and 2) death of adult heartworms. The first stage coincides with the arrival of immature adult worms in the pulmonary arteries and arterioles; approximately three to four months post-infection. These early signs are due to an acute vascular and parenchymal inflammatory response to the newly arriving worms and the subsequent death of most of these same worms. This initial phase is often misdiagnosed as asthma or allergic bronchitis but in actuality is part of a syndrome now known as Heartworm Associated Respiratory Disease (HARD). Clinical signs associated with this acute phase subside as the worms mature but demonstrable histopathological lesions are evident even in those cats which clear the infection. The most notable microscopic lesion is occlusive medial hypertrophy of the small pulmonary arterioles, but other changes are also noted in the bronchi, bronchioles, alveoli, and pulmonary arteries.”
—2007 Guidelines for the Diagnosis, Treatment and Prevention of Heartworm (*Dirofilaria immitis*) Infection in Cats.²

Heska offers a heartworm antibody screening test, Solo Step FH test cassette for feline patients. The presence of heartworm antibody may indicate exposure to heartworm larvae (male or female) or adult heartworms and may be positive even if adult heartworms are not present in the heart. Since detectable heartworm antigen is produced only by adult female heartworms or a large number of dying heartworms, antigen testing is not reliable for detecting exposure or presence of disease. Felines frequently have only a few adult heartworms and may have only male heartworm present. Antibody testing, on the other hand, detects circulating antibodies made by the cat against the larvae and the adult heartworm, indicating exposure or presence of disease. As with any disease process, antibodies may not always be present because the host cat may not produce the antibodies or antibody consumption may exceed antibody production.

Clinically affected cats which are positive on a heartworm antibody test or cats with heartworm antibody test results discordant with clinical presentation and history should have other diagnostic tests performed. These additional tests include quantitative heartworm antibody and antigen testing (available through the HESKA Veterinary Diagnostic Laboratories), chest radiographs and echocardiogram. Radiographs can be helpful in determining progression and regression of feline heartworm disease. It is important to understand no single diagnostic test will detect all heartworm infections in cats. Feline heartworm disease can be elusive, but timely diagnosis affords the clinician the opportunity to modify diagnostic and preventive care plans as well as determine supportive care and prognosis for their feline patient.

As a service to clinics that integrate the use of HESKA Solo Step FH cassettes into their practice, Heska offers complimentary feline case consultations. Call 800.464.3752, option 5, to speak to Heska’s Medical and Technical Consultants.

References

- ¹ Blagbum, Byron L. Emerging Issues in Heartworm Disease. Atlantic Coast Veterinary Conference 2005.
- ² American Heartworm Society 2007 guideline for the feline; <http://www.heartwormsociety.org/article.asp?id=47>
- ³ Auburn University information on feline heartworm infections: <http://www.vetmed.auburn.edu/distance/cardio/home.html>.

The American Heartworm Society recommends annual heartworm testing for canines and felines in its 2005 Guidelines for the Diagnosis, Prevention and Management of Heartworm Infection. www.heartwormsociety.org.



For further assistance, please call Heska's Technical Support Services at 800.464.3752, option 3.
