

RISKY BUSINESS.

Heartworm preventive administration lapses are a fact of life in veterinary practice—some clients don't understand the urgency for protection or the risk of heartworm disease.

HEARTWORM HOTLINE

Practical Advice About Heartworm Preventive Lapses

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The **Heartworm Hotline** column is presented in partnership between *Today's Veterinary Practice* and the **American Heartworm Society** (heartwormsociety.org). The goal of the column is to communicate practical and timely information on prevention, diagnosis, and treatment of heartworm disease, as well as highlight current topics related to heartworm research and findings in veterinary medicine.

While heartworm preventives are highly effective in protecting against heartworm infections, success can be impaired by owners' inability to administer these medications in a timely and consistent manner. Not every lapse in preventive adherence, however, carries the same level of exposure risk, nor do the same set of diagnostic recommendations or client communication considerations apply to every situation. The following case examples represent real-world scenarios and offer guidance on heartworm diagnostics, management, client education, and prevention.

CASE #1: BITSEY

Patient history

Mr. A., a senior citizen who was widowed 6 months ago, has brought in 10-year-old Bitsey, a female West Highland terrier, for her annual checkup. Previously, you have only met Mrs. A., who managed Bitsey's day-to-day care until her recent death. While Mrs. A. was diligent about giving Bitsey her oral heartworm

preventive every month, upon questioning, you realize the dog has not received a dose since Mrs. A. passed away.

Bitsey's last heartworm test, which was negative, was 1 year ago. Bitsey, a sedentary dog who spends most of her life indoors, is asymptomatic for heartworm.

Diagnostic testing

- Immediately test Bitsey for heartworms, using antigen (AG) and microfilaria (MF) tests.
- If tests reveal "no antigen detected" (NAD), retest Bitsey in 6 months.

Testing rationale

- AG and MF tests can be conducted at the same time.
- While Bitsey may have become infected in the past 6 months, she is unlikely to test positive on an AG test today because adult heartworms usually don't trigger a positive result until 6 to 7 months' post-infection. For this reason, she should be retested in 6 months.



Client communication

- Mr. A. is still learning to manage Bitsey's health care, so focus on the basics about heartworm disease and its prevention. Send him home with a downloadable educational resource, like heartwormsociety.org/veterinary-resource, which will allow him to learn about prevention in the quiet of his home environment.
- Discuss the importance of on-time monthly administration of Bitsey's oral preventives; ask Mr. A. to write medication reminders on his kitchen calendar.
- Make a note in the record to discuss compliance again in 6 months when Mr. A. brings Bitsey back for her heartworm retest. If his difficulties remembering her monthly heartworm pill appear to be continuing, discuss other preventive modalities.

CASE #2: SHADOW

Patient history

Mrs. B., a busy mother of 3, recently moved to your community when her husband's job change led to a relocation. This is the first visit at your practice for Shadow, a 5-year-old male English bulldog who has been on a seasonal heartworm prevention program that entailed giving a topical monthly preventive from March through September.

Shadow's last heartworm test was 1 year ago. A normally active and healthy dog, Shadow is presenting today with a cough. His owner also mentions that he has been fatigued for several months.

Diagnostic testing

- Immediately test Shadow for heartworms, using AG and MF tests.
- If AG test is NAD but MF test is positive OR both tests are negative, send a sample to a reference lab for heat pretreatment.
- If the heat-treated sample is negative, retest Shadow in 6 months.

Testing rationale

- Because of Shadow's history of "seasonal" preventive administration, he has experienced windows of potential heartworm exposure.
- Shadow is demonstrating clinical signs that could indicate a heartworm infection from either the previous fall or an older infection that wasn't mature enough to show up on the previous year's antigen test.

- If Shadow tests NAD but has either a positive or negative MF test in the presence of clinical signs that suggest an adult heartworm infection, it is possible that an immune complex (formed when soluble antigen is bound to endogenous antibodies) has blocked the antigen from detection. Heat pretreatment of the sample can free the antigen, making it available for detection.

Client education

- Recommend that Mrs. B. switch Shadow to year-round prevention, staying with the same broad-spectrum preventive.
- Discuss the importance of protecting Shadow from heartworm, as well as the importance of protecting both Shadow and Mrs. B.'s family from potentially zoonotic intestinal parasites.
- Explain that heartworm preventives work retroactively by killing heartworms that had infected the dog for the previous 30 days—and that stopping Shadow's preventive in the fall puts him at risk from heartworms he could have acquired earlier.
- Emphasize the difficulty of predicting "safe" months and explain that year-round prevention will make it easier for Mrs. B. to remember.

CASE #3: CALLIE

Patient history

Ms. C., a first-time dog owner, recently adopted Callie, a female mixed-breed rescue dog approximately 9 months old that was brought to the local humane society from Mississippi. Ms. C. is bringing Callie to your office for her recommended post-adoption checkup.

Callie underwent AG testing when she was brought to the humane society 3 months earlier. At that time, she tested NAD. Callie appears to be asymptomatic for heartworms and has been on a monthly oral preventive since arriving at the humane society.

Diagnostic testing

- Do not test Callie for heartworms today, but recommend she come back to the office in 3 months for AG and MF retesting.
- If Callie tests NAD and MF negative at the 3-month mark, retest her in another 6 months.

Testing rationale

- Because she is a rescue dog, Callie's health history prior to arriving at the shelter is unknown; therefore, it should be assumed she was not on a preventive until the past 3 months.
- The odds of previous infection are increased by the fact that Callie's previous home was in a highly endemic heartworm area.
- Although Callie tested NAD 3 months ago, she could be infected with heartworms that were not yet mature enough to produce a positive result on the AG test. In cases of possible infection, testing dogs at 6-month intervals is advised.

Client education

- Reassure Ms. C. that Callie appears to be a healthy dog, but explain that her previously unknown health history and the fact that she came from a high-incidence state like Mississippi means that Callie needs to be tested again in 3 months to be sure she doesn't have heartworms.
- Discuss the basics of heartworm and prevention. After confirming that Ms. C. is comfortable keeping Callie on the same preventive that was started at the humane society, send her home with a brochure that thoroughly explains how to administer the preventive and how it works.
- Reinforce the importance of year-round prevention and annual testing following the 3-month retest.

CASE #4: BEAR

Patient history

Mrs. D. has brought 3-year-old Bear, an indoor/outdoor Maine coon cat, because of a chronic cough, vomiting, and appetite loss. Mrs. D. admits she

stopped giving Bear his topical heartworm preventive a year earlier because she thought it was "too expensive."

Bear has never been tested for heartworms.

Diagnostic testing

- Immediately perform both AG and antibody (AB) tests for heartworm.
- If the AG test is negative but the AB test is positive, repeat the AG test in 1 to 2 months. If the AG test remains negative, send a blood sample to a reference lab for heat pre-treatment.
- Consider radiography and echocardiography as second-tier tests.

Testing rationale

- The clinical signs Bear is exhibiting, coupled with his owner's history of noncompliance, suggest that he could have an adult heartworm infection.
- Both heartworm AG and AB tests are recommended for cats with suspected heartworm infection.
- Cats typically have very low heartworm burdens, and often have immature infections and male-only infections which may be undetectable on AG tests.
- AB tests detect the presence of past and present infections, male or female, as early as 2 months' post-infection. If Bear was recently infected, he may test AG-positive in a matter of months—but later than the antibody test. If there is NAD, then heat-treatment of serum is warranted.
- Immune complexes can block antigen from detection in feline as well as canine infections.

Client education

- Explain that heartworms cannot be treated in cats, only prevented, and recommend that Bear be put back on preventive year-round.
- Also discuss the added value of intestinal parasite prevention with the same medication and that Bear's indoor/outdoor lifestyle puts him and the family at increased risk of infection with these zoonotic worms.

Heartworm preventive administration lapses are a fact of life in veterinary practice. When a patient history indicates such a lapse, understanding when to test, which tests to run, and what recommendations to give clients moving forward can help ensure that heartworm-positive patients are diagnosed and managed in a timely fashion. **TVP**

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