Parasite Concerns for Indoor Cats

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Abstract

Parasites are not everyone’s favorite topic of discussion with clients in the clinic. However, the prevalence of parasites, the number of diseases they carry, and the risks of infection need to drive the conversation veterinary nurses have with clients regarding parasite risks and prevention. This may be especially important for clients with indoor-only cats, as these owners may underestimate the potential for risk, leaving their cats unprotected and at risk for serious disease.
Historical data indicate that cat owners are less likely to visit the veterinarian than dog owners.\(^1\) And, while cat ownership in the United States increased to 60 million pet cats (more than 26% of households) in 2020 from 58.4 million (25% of households) in 2016,\(^2\) the most current research indicates that only approximately 40% of these cats are seen by a veterinarian annually.\(^1\) However, there is good news on the horizon: A 2020 review by Banfield Pet Hospital suggests that feline veterinary visits are on the rise. Cat visits increased by 8.7% in 2020, with a 20.4% increase in kitten visits that same year.\(^3\) This increase in cat ownership and care is shifting feline medicine in clinics across the country. There is more focus on understanding feline best practices and more opportunities for client education on feline health and behavior.

In addition, 35% of millennials are cat owners, and many think of their cats as children.\(^4\) This new generation of cat owners is more likely to put emphasis on preventive care for their pets.\(^3\) This increased focus on preventives by pet owners is an opportunity, if not an obligation, for veterinary nurses to ensure that they provide best practices in parasite prevention for their indoor and outdoor feline patients. Veterinary professionals can expand their education and prevention practices to engage in more constructive client conversations surrounding feline parasites and prevention.

**Take-Home Points**

- Indoor cats are at risk for parasitic infections, and clients may underestimate this risk.
- Understanding the prevalence of vectors and disease risks based on geographic region and travel is essential knowledge for veterinary nurses.
- Clinical signs and treatment of many flea- and tick-borne diseases in cats are not well understood, making prevention essential.
- Fleas and ticks can lead to death in cats, and that fact is not often conveyed to clients.
- Although cats are not the preferred host for heartworms, it is important to prioritize prevention and client education because detection may be difficult and treatment options are limited.
- Vectors and diseases are recognized in all 50 states.

External parasite vector and disease risks vary geographically, but trends show increased inhabitation and spread.\(^7\) Every U.S. state has some species of tick (FIGURE 1), heartworm disease has been identified in all 50 U.S. states, and as many as 80% of fleas that were found on cats tested positive for at least 1 disease pathogen transmittable to cats, including *Anaplasma*, *Bartonella*, and *Rickettsia* species.\(^7\) Yet, many pet owners, and arguably veterinary professionals, have misconceptions and misunderstandings regarding parasites in cats, especially those that are “indoor only.” Understanding risks, prevalence, and signs and conveying that information to clients is the veterinary nurse’s responsibility.

**PARASITE RISK AND PREVALENCE IN CATS**

A retrospective study from 2007 through 2018 evaluated the prevalence of gastrointestinal parasitism of owned cats over 12 years of age in the United States.\(^5,6\) The fecal examinations identified 23 different gastrointestinal parasites, and the prevalence rate increased over the 12-year study period. Parasites found included *Cystoisospora* species (9.4%), *Toxocara cati* (7.8%), *Giardia* species (4%), *Alaria* species (3.5%), *Ancylostoma* species (1.2%), taeniid (1.2%), *Dipylidium caninum* (1.1%), and *Eucoleus* (syn *Capillaria*) *aerophilus* (0.7%). As many as 45% of cats experience gastrointestinal parasitism, according to the Cornell Feline Health Center and American Association of Feline Practitioners.\(^7\)

**FELINE VECTOR-BORNE DISEASES**

**Tick-borne Diseases in Cats**

Tick-borne diseases in cats are not well understood and manifest differently than in dogs, often without any clinical signs. Therefore, manifestation, treatment, and even prevalence are unclear.\(^7\) Other than the diseases transmitted, what is known is that ticks can cause pain, irritation, and infection at the attachment site.\(^7\)**
Vector-borne pathogens that can cause disease in cats include:

- **Borrelia burgdorferi**: Although antibodies are a common finding in cats in areas endemic for Lyme, disease processes are poorly understood. Therefore, treatment is also not well understood in cats. In endemic areas, *Ixodes* species, the main transmitters of Lyme disease, are prevalent and can be readily carried into homes on other pets and people in the household.

- **Ehrlichia species**: Distribution is aligned with the prevalence of the primary carrier ticks, *Ixodes scapularis* and *Amblyomma americanum*, in various geographic regions of the United States. Like other tick-borne (and flea-borne) diseases, disease and treatment in cats are poorly understood, making prevention essential for cats.7

- **Cytauxzoon species**: Perhaps the most concerning of tick-borne diseases in cats is cytauxzoonosis due to its high mortality and morbidity rates. Most cases are reported in the southcentral and southeastern United States, but cases have been reported across the country.7 Cats present very sick, with fever, anemia, jaundice, hypothermia, or coma, or with acute death.7

Despite the prevalence and virulence of these tick-borne pathogens, veterinary nurses may miss opportunities to discuss parasitic infections as potentially deadly diseases. Veterinary professionals themselves also may not be educated on the risk factors and prevalence of ticks’ geographic locations and the risks their clients and patients face locally and when traveling.

### Flea-borne Diseases in Cats

Fleas carry several diseases and cause pruritis, arguably to the point of suffering in many patients seen in the clinic. Flea allergy dermatitis is a hypersensitivity reaction to antigenic material found in the salivary glands of fleas,7 causing extreme itching, overgrooming, and infections secondary to skin irritation. Heavy infestations may escalate to anemia and death, especially in young or otherwise immune-compromised cats.7 Clinical signs of flea-borne diseases may be vague, and cats may hide signs of infection; therefore, feline flea-borne diseases may go undetected and undiagnosed.

Pathogens transmitted by fleas to cats include:7

- *Acanthocheilonema* (syn *Dipetalonema*) *reconditum*
- *Bartonella henselae*
- *Dipylidium caninum*
- *Francisella tularensis*
- *Hymenolepis diminuta*
- *Mycoplasma* species
- *Rickettsia felis*
- *Rickettsia typhi*
- *Salmonella Enteritidis*
- *Trypanosoma lewisi*
- *Yersinia pestis*

While not all of these pathogens are clinically significant in the United States, it is still worth reflecting on the number of diseases transmitted by a small vector that is commonly seen in the clinic, yet
often not the topic of conversation. Clients may neglect flea control because of a lack of understanding of the potential for infestation if a flea finds its way to their cat. Just 1 tiny flea can transmit disease—and possibly more than 1 disease. Clients should be aware of the risks that fleas pose, even to indoor cats.

Heartworm Disease in Cats

Cats are not the preferred host for heartworms, and most worms do not mature to the adult stage in cats. However, based on recent Companion Animal Parasite Council data, approximately 1 in 200 cats across all 50 U.S. states is infected with heartworms each year, and even a few adult worms can be life-threatening. Heartworm disease in cats manifests differently than in dogs and is more challenging to detect in feline patients.

Cats often have subclinical heartworm infections; those that do show clinical signs may have fatigue, anorexia, weight loss, or emesis (vomiting). In the early stages of heartworm disease, as immature adult worms arrive in the pulmonary vasculature, cats may show signs that resemble allergic or respiratory disease, including coughing, wheezing, dyspnea, or tachypnea. These are signs of a syndrome named “heartworm-associated respiratory disease” or HARD. In some cats, however, the first sign of heartworm infection may be sudden death.

Heartworm prevention is essential for cats, as detection of the presence of adult worms may be difficult and treatment options are limited. Successful prevention requires client education.

How often has a client brought in stool for a heartworm test? This example is just one way clients demonstrate their misunderstanding of heartworm disease. Clients may be unaware of the risks of heartworm disease in cats, especially the dangers for indoor cats that are not on preventives.

CLIENT EDUCATION

Educating the client in a meaningful way includes discussing the risks of disease in their cat, other pets in the household, and even themselves if exposed to many of these parasites (i.e., zoonotic risk) (BOX 1). While parasites do not always incite passion in veterinary nurses, educating clients about parasites is best practice, promotes disease prevention, and is what our clients count on us to do.

Indoor cat owners often do not realize that their cat can even be exposed to parasites. Veterinary nurses understand that the parasite risk for indoor cats is reduced but never eliminated. Rather than focusing on the cat not going outside, it may be more effective to focus on what can get into the house. For instance, veterinary professionals should ask about other pets in the house and other pets that may visit, and use explanations like, “Have you ever found a mosquito in your house, or a tick crawling on you or in the house? These can be risk factors for your indoor cat.”

Educating clients about parasites includes busting commonly believed myths. For instance, many veterinary professionals have heard clients say their pet is not at risk for disease or infection because their pet does not go outside, because they live in a gated community, or even because they live in an apartment on the fourth floor. These same clients would likely not be able to deny ever finding a bug or mosquito in their home, despite the aforementioned “defenses.” In addition, being at the veterinary clinic also means potential exposure to fleas or ticks.

Due to the difficulty of identifying and treating vector-borne diseases in cats, prevention is essential. Conveying this information and the consequences of infection to clients is important, but the actual risks of infection are serious. Lack of understanding about parasite and vector infections and life cycles may prevent clients from fully appreciating those risks.

Despite our best efforts to explain these facts and educate clients, our message may not be immediately retained. In the clinic, clients face many distractions. Prevention may not be the most important topic to cover that day, with limited time, resources, or attention from the client. Because of these distractions and diversions, veterinary professionals must be creative and resourceful in educating their clients.

One of the most universal sources of information these days is social media. People remember memorable GIFs, memes, and other tidbits of information they find on social sites. When clinics leverage educational
tools such as websites, social media, email, and texting to reach out to clients, they connect and educate in a way that clients can retain and even share with others. Using resources people are already accessing regularly helps bring clients to us with less distraction. It is up to us to make that information more consumable.

CONCLUSION
Parasite talks are not always a priority, and they are often pushed down the list with clients when they own “indoor-only” cats. These clients may misunderstand or misrepresent their cat’s risk due to lack of knowledge or misconceptions. In this day and age of adventure cats, catio’s, and traveling with pets, veterinary nurses need to educate clients more than ever on the prevalence, risk, mitigation, and prevention of parasitic diseases in cats. Veterinary professionals become the investigator and the educator in parasitic prevention.

By understanding the risks based on vector prevalence in the area, client and patient exposure factors, and manifestations of common vector-borne diseases, veterinary nurses and other veterinary professionals can be at the forefront of parasite disease prevention, identification, education, and—when needed—treatment. They can have meaningful conversations with clients to ensure that they understand risk exposures such as other household pets, parasites that are in the home or able to gain entry, or even parasites brought inside on people and fomites. No pet or place is entirely immune to parasitic disease. Given the difficulty of treatment, the potential for zoonotic diseases, and the simplicity of prevention, veterinary nurses can make sure their conversations with clients regarding parasites and prevention come from a place of understanding serious disease risk. TVN

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Additional Resources
- Companion Animal Parasite Council. CAPC guidelines. capcvet.org/guidelines

References