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Common Internal Parasites in Dogs and Cats: Identification and Control

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Abstract

Internal parasitic infections are among the most prevalent and clinically significant issues affecting companion animals worldwide. Dogs and cats are particularly vulnerable to a range of helminths and protozoa that can lead to various gastrointestinal, respiratory and systemic disorders. This article provides an overview of the most common internal parasites affecting dogs and cats, clinical manifestations, diagnostic methods and evidence-based control strategies.

Introduction

Internal parasites represent a persistent health challenge in companion animal medicine. These parasites, which include helminths (worms) and protozoans, often inhabit the gastrointestinal tract but may also affect the lungs, heart and liver. In addition to compromising animal health, some parasites have zoonotic potential, posing risks to human health (Overgaauw and van Knapen, 2013). The identification and control of these parasites are crucial for maintaining the welfare of pets and safeguarding public health.

1. Common Internal Parasites in Companion Animals

1.1 Roundworms (*Toxocara canis, T. cati*)

Roundworms are among the most widespread parasites in dogs and cats, especially in puppies and kittens. They reside in the small intestine and feed on host nutrients.

- **Transmission**: Transplacental (dogs), trans mammary (both species), ingestion of infective eggs or intermediate hosts like rodents.
- **Clinical Signs**: Vomiting, pot-bellied appearance, failure to thrive and intestinal blockage in severe cases (Traversa, 2012).
- **Zoonotic Potential**: Cause visceral and ocular larva migrans in humans.

1.2 Hookworms (*Ancylostoma spp., Uncinaria stenocephala*)

Hookworms attach to the intestinal mucosa and suck blood, leading to anemia, especially in young animals.

- **Transmission**: Ingestion, skin penetration, or transmammary transmission.
- **Clinical Signs**: Pale mucous membranes, tarry feces, lethargy and in chronic cases, stunted growth (Bowman et al., 2010).

1.3 Tapeworms (*Dipylidium caninum, Taenia spp., Echinococcus spp.)*

Tapeworms are segmented parasites that inhabit the small intestine.

- **Transmission**: Ingestion of infected fleas (Dipylidium) or raw meat/offal (Taenia, Echinococcus).
- **Clinical Signs**: Often asymptomatic, but anal pruritus, scooting and presence of proglottids in feces are common.
- **Zoonotic Concern**: Echinococcus granulosus causes hydatid disease in humans.

1.4 Whipworms (*Trichuris vulpis*)

Whipworms affect mainly dogs and localize in the cecum and colon.

- **Transmission**: Ingestion of embryonated eggs from the environment.
- **Clinical Signs**: Chronic large bowel diarrhoea, haematochezia and weight loss (Zajac and Conboy, 2012).

1.5 Protozoa (*Coccidia and Giardia spp.*)

Protozoan parasites are commonly found in young animals or those with weakened immunity.

- **Coccidia (*Isospora spp.*)**: Cause watery to bloody diarrhoea, especially in overcrowded or unhygienic conditions.
- **Giardia spp.**: Flagellated protozoans causing mucoid diarrhoea and malabsorption (Thompson, 2004).
- **Diagnosis**: Fecal flotation, ELISA, or PCR tests.

1.6 Heartworms (*Dirofilaria immitis*)

Though less common in cats, heartworm disease is a serious condition in dogs.

- **Transmission**: Through mosquito bites.

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- **Clinical Signs**: Coughing, exercise intolerance, right-sided heart failure and in cats, sudden death.
- **Diagnosis**: Antigen testing, microfilaria detection and imaging (echocardiography/radiography).

2. Diagnosis of Internal Parasitism

Accurate diagnosis requires clinical suspicion along with coprological analysis such as direct smear, flotation, sedimentation and concentration techniques. Advanced methods include enzyme-linked immunosorbent assays (ELISA), PCR and Baermann's technique for lungworms (Zajac and Conboy, 2012).

3. Control and Prevention Strategies

3.1 Regular Deworming

- **Puppies and Kittens**: Every 2 weeks till 12 weeks of age, then monthly till 6 months.
- **Adult Pets**: Deworming every 3–6 months depending on exposure risk (ESCCAP, 2023).

3.2 Environmental Sanitation

Proper disposal of faeces, regular cleaning of bedding and minimizing exposure to intermediate hosts (fleas, rodents) are essential steps in reducing environmental contamination.

3.3 Flea and Tick Control

Control of ectoparasites is critical in breaking the lifecycle of certain internal parasites like Dipylidium caninum.

3.4 Heartworm Prevention

Prophylactic use of macrocyclic lactones (e.g., ivermectin, milbemycin oxime) during mosquito season is recommended, especially in endemic regions.

3.5 Zoonosis Awareness

Pet owners should be educated about the zoonotic implications of parasites, especially households with children, pregnant women, or immunocompromised individuals.

Conclusion

Internal parasites are a common but preventable cause of morbidity in dogs and cats. A combination of routine diagnostics, appropriate anthelmintic use and environmental hygiene can significantly reduce parasite load and improve animal welfare. As many of these parasites are zoonotic, veterinary intervention also serves as a public health safeguard.

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