

Internal Parasites: Tapeworms

The Basics Of Tapeworms

As one of the most common of intestinal worms, most people have heard of tapeworms. As a group, tapeworms affect many species of animals including mammals, birds, fish, and reptiles. As their name suggests, tapeworms are flat worms consisting of many segments. They have a head, neck, and a variable number of trailing body or tail segments. The head has grooves or suckers to attach the worm to the wall of the small intestine. Each trailing segment has its own reproductive system. The worm itself absorbs nutrients from food passing by through its own body wall.

People often find segments of tapeworms in the stool or on the fur by the anus of infected animals. These segments appear similar to rice grains or small strings of spaghetti. Some species of tapeworms in dogs and cats can be spread by fleas. Adult tapeworms can reach lengths of up to twenty inches depending on the species. Others, like the hydatid tapeworm, only reach lengths of five to seven millimeters.

Tapeworm Species

- Dipylidium caninum affects dogs. It uses fleas as an intermediate host.
- Echinococcus granulosus.
- E. multilocularis.
- Spirometra mansonioides.
- Diphylobothrium.
- Taenia species.

The Life Cycle Of Tapeworms

Tapeworms require an intermediate host to complete their life cycle. An intermediate host is a organism that serves as a host to a parasite during part of its developmental stages. The parasite does not reproduce and pass eggs or larvae in an intermediate host.

The most common tapeworm pet owners encounter is Dipylidium caninum that uses the flea as an intermediate host. Adult tapeworms in the small intestine shed segments that are full of eggs. These pass with the stool of their host. When the segments dry, they break open and release their eggs. Either a flea larva or adult flea ingest the eggs during their foraging. The egg hatches and develops into a larva in the flea. As a dog or cat grooms itself, it accidentally swallows the flea and digests it, releasing the tapeworm larva. The larva attaches to the small intestine and the neck begins producing body segments. The oldest segments at the tail contain eggs and break off into the intestine.

The lifecycle of the Taenia species are similar to the "flea tapeworm." The eggs are ingested by an intermediate host. They hatch and the larva migrate through the tissues of their host. At some point, they form a large cyst known as a bladder and become dormant. Suppose a carnivore eats this intermediate host and in the gastrointestinal tract, the bladder breaks open and releases the Taenia larva. These tapeworm larva then attach to the wall of the small intestine and begin to pass eggs in the stool.

The genus Echinococcus (hydatid tapeworm) follows a similar pattern to the Taenia tapeworms. Their eggs pass in the stool from an infested animal and an intermediate host ingests them. The eggs then hatch and the

larvae penetrate the intestinal wall. Then the hydatid tapeworm larvae migrate through the body to various organs and form large cysts. Each cyst may be one to two inches across and contain thousands of infective forms. This mass of infective forms is known as "hydatid sand." When another animal eats the intermediate host, these cysts open and each infective form becomes a worm. They move to the small intestine and attach to sites on the intestinal wall. They may live for as long as two years. They pass eggs in the stool of their host.

Transmission of Tapeworms

A dog or cat becomes infested with tapeworms by eating the intermediate host of a specific species of tapeworm. Most commonly, pets with fleas ingest a few accidentally and if any fleas contain a tapeworm larva (*Dipylidium caninum*), then the pet will become a host to tapeworms. The type of intermediate host varies with the species of tapeworm.

Symptoms Of Tapeworm Infestation

Symptoms of a tapeworm infestation tend to be rather mild in comparison to other intestinal worm infestations. Usually, a dog or cat must have a larger concentration of worms to display symptoms.

- A pet may have abdominal discomfort and possibly vomiting.

Segments of the tapeworms will often be seen in the stool or on the fur of the pet. These segments resemble grains of rice. They may move or twitch before they dry out. Often, finding these segments is the first sign that the pet has fleas. (Most tapeworm infestations in dogs and cats are due to the "flea" tapeworm, *Dipylidium caninum*.)

Treatment And Prevention Of Tapeworms

Tapeworms are diagnosed most often by owners finding the rice granule-like segments in their pets stool or on their fur if their pet has the "flea" tapeworm. Tapeworm infestations diagnosed through a fecal parasite exam for species of tapeworms other than the "flea" tapeworm. The segments of other species usually cannot be seen with the naked eye. Simply bring in a small stool sample and we will prepare a specimen through centrifugation and examine it microscopically. The presence of tapeworm eggs in the stool indicate a tapeworm infestation.

If your pet is infested with tapeworms, we will administer an appropriate deworming agent and repeat this four weeks later. This medication destroys the adult worms in the intestines but does not affect larvae migrating through body tissue. We must allow the larvae to complete their migration and pass into the small intestine where the second round of medication will destroy them. Occasionally, after a treatment, you may observe dead worms passing in the stool for 24-36 hours.

To prevent a tapeworm infestation, you must control fleas and lice. Do not feed your pets any raw food as this is the primary method of transmitting tapeworms to new hosts.

Possibility Of Human Infestation From Tapeworms

It is very possible, though unlikely, for people to contract the "flea tapeworm" from their pets. Most infestations in people are children as they tend to lack continual proper hygiene compared to adults. Just like dogs and cats, people have to swallow an infected flea. Wash hands and all uncooked food items well. The hydatid tapeworm is relatively mild in dogs and cats but can produce severe symptoms in people such as parasitic tumors in the lungs, liver, or even the brain.

For further information regarding tapeworms and people, contact North Shore Veterinary Clinic at 847-966-3080.