Baylisascaris procyonis: Killer Worms

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Baylisascaris procyonis is the scientific name for a terrible parasite that affects humans and animals across the nation, particularly in the Midwest and California; there have even been reports of this parasite in parts of Germany and Japan. This parasite is a roundworm that lives in the small intestine of adult raccoons, although it affects the raccoons very little. The infection and dangers of this roundworm occur when its eggs are passed through the digestive track of the infected raccoon and are then ingested by other animals and humans (especially young children) when the animal either eats or plays in an area contaminated by raccoon feces (2).

The life cycle of *B. procyonis* is very similar to the life cycle of its close relative in the *Ascaris* genus, a human and pig intestinal roundworm, which reportedly has reached recorded lengths of eighteen inches. Once the eggs have passed in feces, it usually takes three to four weeks for the eggs to be infective. When the infective eggs are ingested, they hatch and the larvae penetrate the gut wall and migrate to various tissues in the body such as the liver, heart, lungs, brain, and eyes. The larvae are approximately eighty micrometers long and sixty-five micrometers wide. When animals other than raccoons ingest infective eggs, the hatched larvae never develop into an adult worm. The larvae remain in the larval stage and continue their attack on the central nervous system of the infected individual until they die or are reabsorbed by the body. When raccoons

ingest infective eggs, the larvae hatch and reach adulthood, which

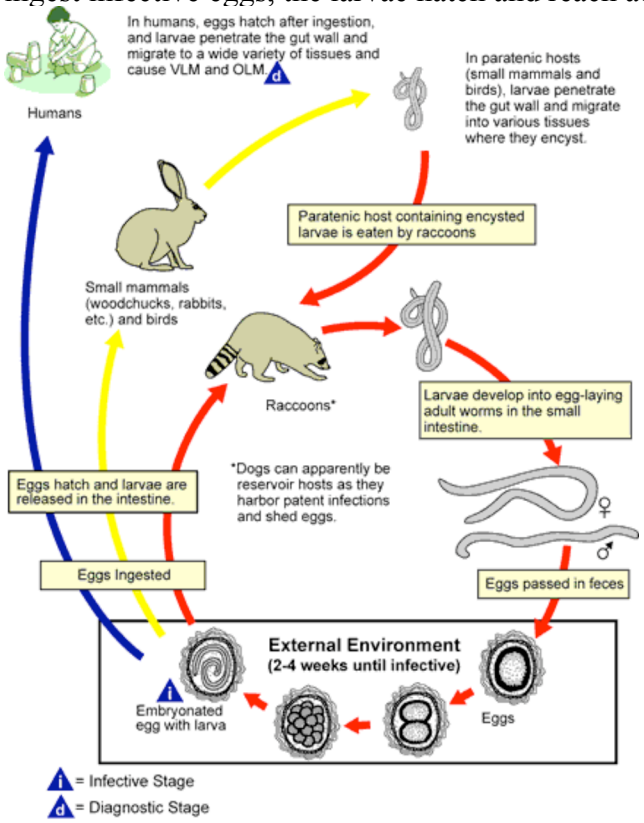

Figure 1. *Baylisascaris procyonis* life cycle.

completes its life cycle (Fig. 1) in the small intestine of the raccoon. (3, 4).

B. procyonis causes a disease called baylisascariasis that affects over fifty species of animals including dogs, squirrels, chinchillas, guinea pigs, mice, rats, birds, and humans. In humans, this disease most often occurs in small children because of their frequent hand to mouth contact. Symptoms include abdominal pain, loss of balance and muscle coordination, blindness, and even death. Fortunately, this disease is easily diagnosable in humans. Diagnosis requires a blood test, which indicates high or low levels of antibodies and white blood cells called eosinophils. The high concentration of eosinophlis occurs around the brain and spinal cord in the cerebrospinal fluid. This area is the primary region of infection by the parasitic larvae. In addition to blood tests, medical professionals have also been able to diagnose this disease by using of CAT scans and MRIs (1, 5).

Unfortunately, treatment of this disease is not as easy as its diagnosis. Medical professionals have yet to find a cure for baylisascariasis, but effective methods have been devised to suppress inflammation and minimize damage to vital organs and tissues. The patient is placed on high levels of corticosteroids if signs of this disease are recognized soon enough, but these drugs will not repair damaged tissue, nor cure the disease (5).

Although there is no cure for baylisascariasis, there are several preventative measures that can be taken to avoid contact from infective eggs. Keep a close watch on

small children that play in areas that could be contaminated with raccoon feces, avoid leaving uncovered trash out in the yard, and remember to never keep raccoons as pets, no matter how cute they look!

References

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