Life cycle of the dog hookworm, *Ancylostoma caninum*

Hookworms are responsible for widespread morbidity and mortality in animals due to their blood-sucking behaviour in the small intestine. *Ancylostoma caninum* is the most important hookworm of dogs in the tropics and warm temperate regions and is sometimes diagnosed in the UK in dogs imported from endemic zones. The life cycle of hookworms is direct.

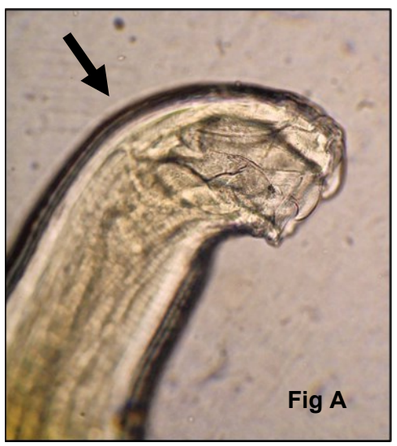
Fig A


Fig B


Fig C

1. The anterior end of these worms (Fig. A) has a hooked posture which gives the worms their name. The buccal capsule or mouth is large and there are three pairs of teeth on the margins (Fig B), and also teeth at the base of the mouth itself. Using these structures, the worm can anchor itself onto the intestinal wall to continually feed on blood.


Fig D

2. ***Ancylostoma caninum*** produces large numbers of eggs (Fig D) in faeces. Eggs measure up to 65 x 43 µm and when passed contain balls of cells known as morulae.

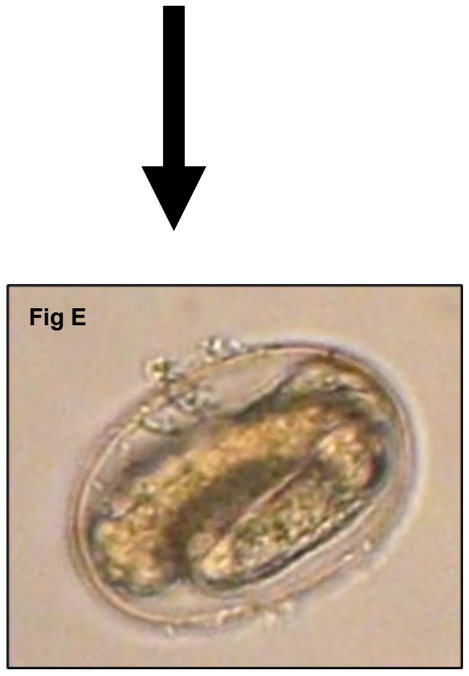
Fig E

3. The first stage larva (L1) develop inside the egg within 24 hours under optimal conditions of temperature and humidity (Fig E).


Fig F

4. Once hatched, the free-living L1 feeds on bacteria, fungi etc and moults to the second stage, an L2 (Fig F).


Fig G

5. The L2 feeds, grows and moults to the third stage larva, or L3 which is infective to dogs (Fig G). Development from egg this infective stage may take as little as 5 days.

PUBLIC HEALTH

In warm climate regions, human cases of hookworm L3 accidentally entering the skin present as winding red tracks, a clinical condition known as cutaneous larval migrans (CLM). People walking or sitting on beach sand or soil where infected dogs or cats have defecated are at risk.

The prepatent period is 2-3 weeks

6. Transmission occurs when dogs and other canids, e.g. foxes, ingest infective larvae. However, as with most hookworms, infective larvae can enter the skin and proceed to the small intestine via the lymphatics and blood stream. This is an important route in *A. caninum* vertical transmission since they become arrested in subcutaneous tissues and are re-activated around parturition, thereby infecting pups. Both subadult and adult worms suck blood.