Pediculosis in Companion Animal: a problematic zoonosis?

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Abstract
Companion Animals, dogs and cats, can be infected with lice, either from Mallophaga or Anoplura. Although mass infestations only occur in dirty animals, well-cared companion dog also may be infected and have clinical signs. Trichodectes canis, a Mallophaga lice species appears to be involved in the transmission of Dipylidium caninum, also called the cucumber tapeworm. Human dipilidiosis occurs mostly among children especially when they are in close association with infected dogs and cats.

INTRODUCTION
Lice are ectoparasites of the Class Insecta. They may belong to Order Mallophaga or biting lice, or to order Anoplura or sucking lice [1]. They have three pairs of stout legs with claws and have a body divided into a head, thorax and abdomen [1].

Dogs can be infected with two different lice species, Trichodectes canis, a biting lice, and Linognathus setosus, a sucking lice that prefer long-hair breeds such as Spaniels, Basset Hounds and Afghan Hounds [1, 2]. Cats are infected with Felicola subrostratus, a sucking lice [1, 2]. The adults live their whole life, preferentially in the host, especially in hair areas around the head, neck, back, tail and ears [1]. The life cycle is completed in 14 to 21 days [1]. They feed of epidermal tissue debris, sebaceous fluids and blood causing anaemia irritation, pruritus, alopecia, restlessness, scratching and biting [1]. Horizontal transmission is uncommon and happens with physical contact between dogs [1]. Biting lice are very active and can be seen in the animal’s hair, bloodsucking lice are generally at the hair basis where they attach with claws [2].

Trichodectes canis is a vector of Dipylidium caninum which is a common zoonotic parasite of intestines of dogs and cats and it belongs to the class Cestoda [3, 4]. Dogs and cats are the definitive hosts of D. caninum, while humans are accidental hosts [3]. Parasitism is more intense in animals over one year old and the clinical manifestation in the dog or cat may be occult [5]. Humans, mainly children, can be accidentally infected while playing with their pets and ingest lice infected with the tapeworm larva, however it is considered a rare infection in the world [3, 4, 6]. Only 16 human cases have been reported in the last 20 years in Europe, China, Japan, India, Sudan, Latin America and the United States with clinical course varying from asymptomatic, middle diarrhoea, abdominal colic, anorexia, restlessness, agitation, constipation, anal itching, abdominal pain and eosinophilia [5]. Diagnosis is made by identification of proglottids in stool samples, in rice grains shape, or by microscopic identification of eggs in the stool [3, 6].

HOW TO CONTROL THIS PROBLEM?
A wide range of insecticide compounds such as permethrin, phoxim, fipronil and imidacloprid are effective against Linognathus setosus and Trichodectes canis [7]. These ectoparasiticides may explain why lice infection in dogs is a rare diagnosis in societies where dogs have access to flea prophylactics [7].

A clinical study was performed in 21 dogs to evaluate the efficacy of selamectin for the treatment of naturally acquired infection of sucking lice (Linognathus setosus) in dogs and suggests that selamectin is effective against L. setosus infection in dogs [7].

Another study, testing the efficacy of dog collars containing imidacloprid/flumethrin concluded that they were effective over Trichodectes canis that was eliminated within 2 days [8]. On an experimental study fipronil spot-on was effective for lice infections in dogs and cats [9, 10]. However, about 40% of the inquired owners prefer non-chemical ectoparasiticides because of the intimacy between humans, adult and children, and indoor dogs [2]. Therefore, there is a permanent wish for non-toxic natural drugs for ectoparasite control [2]. Commercial products obtained from concentrate of neem tree seeds has had encouraging results [2].
REFERENCES


