

AN OXYURID NEMATODE IDENTIFIED IN A PET CHINCHILLA (*CHINCHILLA LANIGERA*)

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Abstract

Chinchillas are popular as pets; however, very few veterinary references describe helminth parasites in these animals. This report describes an adult female pet chinchilla (*Chinchilla lanigera*) that presented with a 1-week duration of intense perianal itching. An anal tape test was performed and microscopic examination of the sample revealed the presence of a thick walled, transparent, oval, laterally asymmetric embryonated egg, which was morphologically identified as belonging to the superfamily Oxyuroidea. Copyright 2016 Elsevier Inc. All rights reserved.

Key words: nematoda; oxyuroidea; chinchilla; *Chinchilla lanigera*; rodentia

The chinchilla (*Chinchilla lanigera*) is a small mammal from the order Rodentia and family Chinchillidae and is native to the Andes mountain range in South America.¹ These animals were hunted intensively for their soft dense fur,² causing the species to become critically endangered.³ In the 1920s, efforts were initiated to propagate these rodents in captivity, for commercial purposes, by the fur industry.⁴ Chinchillas are also used as laboratory animals in scientific studies.

Although chinchillas continue to gain popularity as household pets,⁵ few studies have focused on the gastrointestinal parasites that affect this species. Moreover, there is a paucity of reports regarding pet chinchilla diseases in general.⁶

In studies involving commercially bred groups of chinchillas, the identified causative agents of intestinal parasitic disorders were protozoans of the genera *Giardia*⁷⁻¹¹ and *Cryptosporidium*.^{12,13} In another study, *Eimeria chinchilla* was noted in 8.3% of pet chinchillas.¹⁴ The parasite *Sarcocystis* spp. was identified in the liver of a pet chinchilla, although no overt clinical disease signs were reported.¹⁵ The presence of *Trichomonas* spp. has been reported in laboratory chinchillas.¹⁶

Gastrointestinal helminth infections in chinchillas are rarely reported, and there are no

epidemiological studies that describe the gastrointestinal helminth fauna of these mammals in the wild. Commercial breeders in Ontario, Canada reported the nematode *Baylisascaris procyonis*.¹⁷ A coenurus of *Taenia* spp. was identified in an orbital cyst removed from a captive-bred chinchilla in California, USA.¹⁸ Another cestode parasite, *Taenia crassiceps*, was identified in a chinchilla living in an animal shelter,¹⁹ whereas a 2.1% prevalence of the tapeworm parasite *Hymenolepis nana* was reported in pet chinchillas in China.¹⁴ *Echinococcus multilocularis* was described through the identification and histologic examination of cysts in the liver of a pet chinchilla.²⁰ *Haemonchus contortus*, *Trichostrongylus colubriformis*, and *Ostertagia ostertagi* infections diagnosed in

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chinchillas were attributed to the accidental ingestion of contaminated forage.^{21,22}

The superfamily Oxyuroidea, phylum Nematoda, is represented by small worms that live in the lumen of the large intestine of humans and animals, which acquire these parasites by ingesting egg-contaminated food and/or water.²³ In Brazil, approximately 31 different species of Oxyuroidea can infest mammals; the most frequently parasitized by this superfamily of parasites belong to the order Rodentia, with 17 known affected species.^{24,25} The main clinical effect of Oxyuroidea infection is severe perianal itching, caused by the movement of the females during oviposition and also by the egg attachment glue, which is extremely irritating to the host's skin.²⁶ This report describes the occurrence of an oxyurid nematode identified by parasitological examination in a female pet *C. lanigera* in Brazil.

CASE DESCRIPTION

A 4-year-old pet female chinchilla presented with a 1-week duration of intense perianal itching and was reported rubbing her posterior vigorously against the floor of the enclosure. The animal's diet included commercial pellets purchased in bulk, raisins, grass hay, and bottled mineral water. The chinchilla was maintained as a single pet indoors and had no contact with other animals.

A Graham swab (also known as the anal tape test) was performed; this test is widely used for the diagnosis of Oxyuroidea parasites in both humans and animals.²⁷ A cellophane tape is placed against the animal's perianal area (Fig. 1) and then fixed onto a glass slide (Fig. 2). This procedure was repeated several times, after which the slides were examined under a microscope equipped with an ocular micrometer.

One specimen demonstrated the presence of an embryonated egg that was thick walled,



FIGURE 1. Anal tape test performed in a conscious chinchilla.

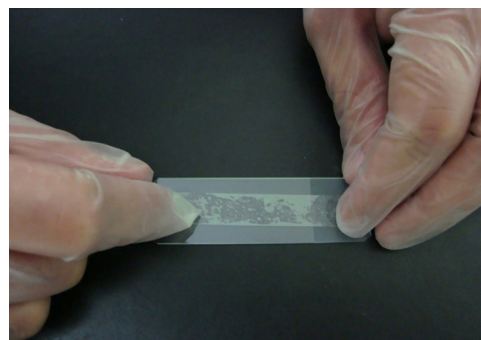


FIGURE 2. Cellophane test is fixed onto a glass slide for microscopic evaluation.

transparent, oval, of lateral asymmetry, and approximately 70 μm in length and 40 μm in width. Findings were typical of the superfamily Oxyuroidea (Fig. 3). Further speciation of the single ova was not possible.

The chinchilla was treated with an oral dose of fenbendazole (20 mg/kg, once a day for 5 days, Panacur 10% oral suspension; MSD Saúde Animal, São Paulo, Brazil).²⁸ Fifteen days posttreatment clinical signs had resolved, and repeat testing of the affected area for the presence of Oxyuroidea parasites showed negative results.

DISCUSSION

This report describes pinworm infection in a pet chinchilla. Although the ovum was characterized as superfamily Oxyuroidea, analysis of morphological and biometric parameters were insufficient for further identification. The ovum did not correspond identically to that of other oxyurid species typically found in neotropical rodents. Further identification and characterization would require recovery of adult forms in the large intestine, which was not possible in this pet animal. The source of the infection remains unknown.

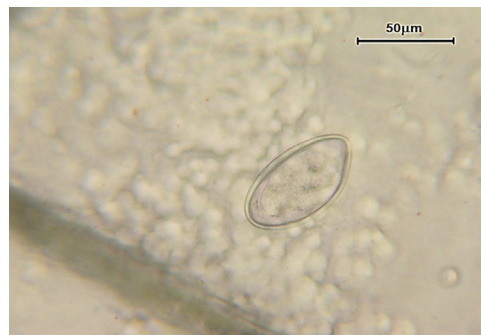


FIGURE 3. Photomicrograph of the egg of the Oxyurid nematode (pinworm) recovered from the perianal area of *C. lanigera* in the anal tape test ($\times 400$ magnification).

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