A case of infestation with *Leporacarus gibbus* in a pet rabbit

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Abstract. *Leporacarus gibbus* (syn. *Listrophorus gibbus*) is a common mite of rabbits which can sometimes be underdiagnosed due to the absence of clinical signs in healthy animals. Several molecules have been proved to be efficient against *L. gibbus*, such as selamectin, imidacloprid + permethrin, carbaryl powder and ivermectin. A pet rabbit was referred to the New Companion Animals Clinic for hypersalivation and during the examination, ectoparasites were observed on its fur. The mites were collected and morphologically identified as *Leporacarus gibbus*. Topical treatment with imidacloprid was applied with a 100% efficacy after 14 days. The present report describes a case of infestation with *L. gibbus* in a pet rabbit from Romania, with no dermatological manifestations.

Keywords: *Leporacarus gibbus*; Rabbit; Romania; Imidacloprid.

Infestație cu *Leporacarus gibbus* la un iepure


Cuvinte cheie: *Leporacarus gibbus*; Iepure; România; Imidacloprid.
Introduction

*Leporacarus gibbus* (syn. *Listrophorus gibbus*) is a common mite of rabbits which sometimes can be underdiagnosed due to the absence of clinical signs in healthy animals. However, in heavy infestations, aging or immunosuppression, clinical signs can manifest in the form of alopecia, pruritus and pyothraumatic dermatitis (Lennox and Kelleher, 2009; Serra-Freire et al., 2010; D'Ovidio and Santoro, 2014). Other authors consider that clinical manifestations appear in association with other ectoparasites (Pinter, 1999). These mites attach to the hair of the host and feed on sebaceous secretions, epithelial cells, and hair debris (Pritt et al., 2012) and are considered to be nonpathogenic, yet occasionally rabbits can develop hypersensitivity (Pritt et al., 2012). The zoonotic character of *L. gibbus* remains uncertain, although a few reports of dermatological lesions in humans related to these mites were recorded (Burns, 1987; D'Ovidio and Santoro, 2014). Several molecules have been proved to be efficient against *L. gibbus*, such as selamectin, imidacloprid + permethrin, carbaryl and ivermectin (Fisher et al., 2007; Birke et al., 2009; Coelho et al., 2014).

The present report describes a case of infestation with *L. gibbus* in a pet rabbit from Romania, with no dermatological manifestations.

Case presentation

A twelve years old male pet dwarf rabbit was presented to the NAC (New Companion Animals Clinic) Clinic of the University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca due to hypersalivation. A complete examination was performed, and malocclusion was found as a cause of the hypersalivation. Additional tests also revealed a bronchitis. Moreover, at the time of the examination, the responsible vet observed the presence of ectoparasites on the fur (figure 1). Some of the ectoparasites were easily collected using duct tape and grooming with a fine-tooth comb and morphologically identified as *Leporacarus gibbus* (figure 2).

The owner confirmed that it did not present any dermatological problems. The rabbit’s occlusion was treated by performing a dental resection under anesthesia, assisted feeding was necessary and the rabbit also received antibiotics (enrofloxacin) and fluids. Initially, the animal was treated against the mites with 0.2 mg off-label ivermectine (s.c. Biomec), without success, but after two weeks, a single application of a spot-on formulation containing imidacloprid 40 mg (Advantage,
Bayer) was administered. Fourteen days after the second treatment, the rabbit was carefully inspected, and, except for few dead mites, no living *L. gibbus* were observed. After two months from the treatment with imidacloprid, the rabbit was humanely euthanized due to old age and feeding problems.

**Discussion**

Pet rabbits are often parasitized by ectoparasites responsible for dermatological disorders. The main ectoparasites described in rabbits are represented by fleas (*Ctenocephalides felis*), flies (*Cuterebra spp.*), ticks (*Haemaphysalis leporispalustris*), blood-sucking lice (*Haemodipsus ventricosus*), mange mites (*Sarcoptes spp.*), ear mites (*Psoroptes cuniculi*) and fur mites (*Cheyletiella parasitivorax* and *L. gibbus*) (*Hoppmann and Barron, 2007; Hess and Tater, 2012*). Among the latter, *C. parasitivorax* occurs more commonly and affects up to 60% of rabbits (*Kim et al., 2008*), while *L. gibbus* is only rarely reported in either laboratory or pet rabbits which can be related to the difficulties in diagnosing and to the fact that *Leporacarus* usually causes subclinical infestation in rabbits (Patel and Robinson, 1993; D'Ovidio and Santoro, 2014).

Therefore, diagnostic methods and knowledge of the optimal sampling sites in subclinical infections are very important (Birke et al., 2009). In Romania, *L. gibbus* has been reported before in laboratory rabbits with a prevalence of 1.66%, but in contrary to the present case, infestation of laboratory rabbits was associated with dermatological disorders (Mircean et al., 2009). Our results demonstrated that imidacloprid was effective against *L. gibbus*, with 100% efficacy after 14 days, in contrary to other substances such as selamectin which has an efficacy of 100% after only three days (Birke et al., 2009). However, the first treatment with injected ivermectine was not successful even though other authors had good results in treating *L. gibbus* with 0.4 mg of ivermectin administered orally (Coelho et al., 2014). Unfortunately, in Romania there is no commercial selamectin available (Revolution), licensed for rabbits.

The present paper reports a case of massive, but subclinical infestation with *L. gibbus* in a pet rabbit and its evolution after treatment with imidacloprid.

**References**


