



## **FIRST DESCRIPTION OF DERMANYSSUS GALLINAE INFESTATION IN A DOG AND ITS OWNER IN MEXICO**

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### **ABSTRACT**

A swallow mite affected a 4-year-old female dog and her owner, as diagnosed by acetate tape test observed under a microscope. Administration of a single topical dose of imidacloprid with moxidectin and praziquantel was effective in treating the mite infestation for 30 days.

**Key Words:**

Dog, mites, treatment, pruritus, swallow

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### **INTRODUCTION**

*Dermanyssus gallinae* is a cosmopolitan hematophagous ectoparasite of wild, domestic and synanthropic birds (Di Palma *et al.*, 2012). Occasionally, it can affect small mammals (such as cats and dogs) and humans in contact with poultry houses, although infestations transmitted by wild birds that nest in the eaves of houses have also been reported (DeClerq y Nachtegaele, 1993; Di Palma *et al.*, 2018). It is responsible for dermatological problems of varying severity (Di Palma *et al.*, 2012). Furthermore, it can act as a potential vector and reservoir for infectious agents that cause disease (Di Palma *et al.*, 2018). This report describes the clinical signs, diagnosis and successful treatment of a case of dermatitis caused by *Dermanyssus gallinae* in a dog and its owner.

A 4-year-old female mongrel canine, weighing 7 kg, presented for consultation due to itching of progressive increase

with 3 days evolution; the owner reported that she saw black 'dots' on the canine's fur, which moved quickly, in addition, the owner had a tingling sensation on the skin, itching and small red bumps on the abdomen and sides. The canine lived in the courtyard of the house. At the time of the review, erythema and welts in the area of the back, abdomen and thorax were observed, in addition to several black dots that showed movement and distribution throughout the hair. So far, no topical or systemic treatment had been administered. An unusual insect was observed during microscopic examination of the dog's hair and the owner's clothes taken with adhesive tape from areas where the black dots were noted. Consequently, the owner was asked whether there were birds in the house and recounted the presence of a swallow's nest (*Hirundo rustica*) on the roof of the house's patio. When approaching the nest, small organisms were noticed walking around on the wall and it was decided to collect a sample for observation under the microscope; the sample was identified as *D. gallinae* (Di Palma *et al.*, 2012).

No other type of ectoparasite was observed on the dog, which was treated with a topical dose of imidacloprid in combination

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with moxidectin and praziquantel (Canis Fullspot, Labyes, Argentina), administered on the skin between the scapulae. Evaluations to detect the presence of mites and clinical signs were carried out on days 1, 7, 14 and 30, in addition to recording the level of itching (Hill *et al.*, 2007).

On day 0 of the microscopic evaluation, mites were observed, along with an itch level of 10/10. Acetate tapes test on days 7, 14 and 30 were negative. On day 7 the erythema and hives were reduced by approximately 80% compared to day 0. On days 14 and 30, complete resolution of the skin lesions was observed. From day 7 no pruritus was observed. At the same time, environmental control was suggested and it was waited for the swallows (*Hirundo rustica*) that lived there to leave for remove the nest and the problem was solved.

Migratory birds such as swallows serve as hosts for parasites, including ectoparasites. They build nests in houses, becoming a possible source of infestation (Ghalehjoughi *et al.*, 2017). Although *D. gallinae* mites have been reported to be bird-specific, there has been an increase in attacks on non-avian hosts, indicative of their spread (George *et al.*, 2015). These ectoparasites can easily be transmitted horizontally (Ghalehjoughi *et al.*, 2017). In this case, the owner commented that the dog used to take naps under the nest and, as the birds fluttered, the mites would probably fall and remain on the dog, so it was prevented from continuing to sleep there until the nest was removed and the environment disinfected. Due to the conserved nature of mites and the neural pathways of insects, several miticides are effective. However, resistance to carbamates and pyrethroids has been reported (George *et al.*, 2015; Pritchard *et al.*, 2015). The topical solution of imidacloprid in combination with moxidectin and praziquantel was effective in the control of these mites on the dog and in preventing their reproduction, since they require feeding on blood to develop and oviposit; in addition, the possible transmission of pathogenesis avoided (Pritchard *et al.*, 2015). This case demonstrates the spread of *Dermanyssus gallinae* in non-avian hosts and that these infestations can be eradicated successfully with topical imidacloprid solution in combination with moxidectin and praziquantel in addition to environmental treatment. Dermatitis due to this mite should be included as part of the differential diagnosis of pruritus in dogs with risk factors for this parasite.

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