

Effect of Selamectin spot-on against the *Lynxacarus radovskyi* infestation in cats

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Abstract

Lynxacarus radovskyi is a fur mite that is found on the hair shafts of cats. Two adult Persian cats from the same household presented to the clinic with mild alopecia, pruritus and “pepper and salt” appearance over the dorsum region. *Lynxacarus radovskyi* mites were found on the hair upon microscopic inspection. Cats were administered with selamectin spot-on once in month for a period of three months. The cat had complete full recovery following therapy.

Keywords: Selamectin, *Lynxacarus radovskyi*, Cats

Introduction

Domestic cats fur mite is *Lynxacarus radovskyi* which is a member of the Listrophoridae family, is about 0.5 mm long, has an elongated and flattened body, and parasitizes the hair stems. Nichols and Heath (2017) reported that *Lynxacarus radovskyi* had been observed in cats less frequently than *Otodectes cynotis*, *Notoedres cati* and *Sarcoptes scabiei*. This article presents the *Lynxacarus radovskyi* mite infestation in cats.

Case History and Observations

Two adult Persian cats with mild alopecia and pruritus were brought to the clinic for treatment. They had a powder-like substance with “pepper and salt” appearance over the dorsum (Fig.1). Both tape impression smears, superficial and deep skin scrapings were taken and examined under microscope for mites and parasitic eggs. *Lynxacarus radovskyi* mites were found on the hair upon microscopic inspection (Fig.2). Cats were given selamectin (6%) spot-on.

Results and Discussion

Lynxacarus radovskyi mites were found crawling on the hair shafts of the infected cats, as confirmed by microscopic analysis of the adhesive tape impression smears. Jayanthi *et al.* (2017) and Rohini *et al.*, (2020) reported similar findings in cats with lynxacarosis in which the current history and clinical findings of alopecia and pepper salt appearance of the hair coat.

Divya *et al.* (2021) reported that the intensity of dermatitis varied from mild to severe and the outcome could be due to the co-infestation with other parasites, such as lice, fleas, or ear mites. Various products were

used for the management of mite infestation and included oral afloxolaner and moxidectin (Han *et al.*, 2016), sub cutaneous ivermectin injection (Jayanthi *et al.*, 2017), oral sarolaner (Campos *et al.*, 2020), selamectin spot-on (Divya *et al.*, 2021), transdermal fluralaner (Guimaraes *et al.*, 2023). In the present study utilised the spot on containing selamectin and noticed the complete recovery following therapy. Selamectin specifically target the nervous system of invertebrate parasites such as mites. It binds to the glutamate-gated chloride channels, which were present in the nerve and muscle cells of these mites. This binding causes the increased permeability to chloride ions, leading to a continuous influx of chloride ions into nerve cells further causing the hyperpolarization of the nerve cells, disrupting the normal neurotransmission leads to neuro muscular paralysis and eventual death of the mites.



Fig.1: Presence of pepper salt like powder over the dorsum region of a cat with lynxacarosis



Fig.2: Microscopic examination of adhesive tape impression smears showing the *Lynxacarus* mites (400x)

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