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Concurrent infestation of *Lynxacarus radovskyi* and *Otodectes cynotis* in a Persian cat

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Abstract

In this report, concurrent infestation of *Lynxacarus radovskyi* and *Otodectes cynotis* in a Persian cat and its successful therapeutic management has been described. A three year old male white Persian cat was presented at District Veterinary Centre, Palakkad, Kerala with clinical signs of weakness, pruritus, alopecia, salt and pepper appearance on hair coat and otitis. Examination of skin scrapings revealed adult stages of *Lynxacarus radovskyi* mites. *Otodectes cynotis* infestation was confirmed by ear swab examination. The cat was treated with a single application of Selamectin spot-on (6%) along with topical application of Lime sulfur dip from second week onwards twice weekly for three weeks. The animal was found negative for both the parasitic mites along with improvement in coat condition on review after one month.

Keywords: concurrent, persian cat, *Lynxacarus radovskyi*, *Otodectes cynotis*, Selamectin

Introduction

Cat fur mite, *Lynxacarus radovskyi* is a non follicular parasitic mite belonging to the family Lirophoridae within the order Astigmata. The genus name *Lynxacarus* was derived after Lynx, the host from which the first species in the genus was described and acarus meaning mite. The species name *radovskyi* for Dr. Radovskyi of the Bishop Museum, Honolulu, Hawaii. *Lynxacarus radovskyi* is a rarely reported parasitic mite in India. First scientific report of this mite in India was made by Dr. C. Jayanthi and co-workers from Chennai in a Persian cat in the year 2017^[1]. The occurrence of this mite in Kerala state was reported in Persian cat from Thrissur and Kannur districts^[2-5]. These tan coloured mites are also called hair claspings or hair clinging mites as they grasp the hair shaft with their gnathosoma and palpai. Infected cats have dry dull and rust-coloured hair coat giving a granular appearance popularly called “salt and pepper” appearance^[6]. An infestation with these mites are often subclinical, but has also been associated with pruritus, alopecia, increased hair balls and irritability^[7]. Intensity of pruritus will depend on the severity of infestation with these mites and clinical signs like papules and crust formation are also reported^[8]. Ear mite, *Otodectes cynotis* belonging to the family Psoroptidae is the most common cause of otitis externa in cats which is mainly manifested by head shaking, erythematous ear canal and the presence of dark brown ceruminous otic exudates^[9]. Otoacariosis is commonly followed by secondary bacterial and yeast infection. If left untreated, it results in permanent ear damages^[10]. This paper is the first report of *Lynxacarus radovskyi* infestation in a Persian cat from Palakkad district of Kerala.

Materials and Methods

A three year old male white Persian cat was presented at District Veterinary Centre, Palakkad, Kerala with clinical signs of weakness, pruritus, alopecia over the neck, dorsum and tail. Matting of hair coat with black coloured materials was observed giving a salt and pepper appearance to the dull and dry coat (Fig. 1&2). Dark brown exudates were observed attached to the inner surface of both pinnae. Skin scrapings and ear swab collected from affected areas were treated with 10% KOH for microscopic examination.



Fig 1: Cat infested with *Lynxacarus radovskyi* and *Otodectes cynotis*



Fig 2: Salt and pepper appearance of hair coat

Results and Discussion

Microscopic examination of alkali digested skin scrapings under low power of microscope revealed adult stage of *Lynxacarus radovskyi* with cylindrical, laterally compressed, dorsally arched body, ventrally directed head, prominent and well developed head plate, propodosomal plate and legs. The abdomen was heavily striated giving a characteristic finger print appearance to the mites (Fig. 3&4). Ear swab examination revealed that the animal was positive for *Otodectes cynotis* (Fig.5). Based on the clinical signs and morphological findings the case was diagnosed as concurrent infestation of *Lynxacarus radovskyi* and *Otodectes cynotis*. Selamectin 6% spot-on (SELAMEC 0.5ml@Petcare) was administered topically in a single spot at base of the neck in front of the scapulae at a dose rate of 6mg/kg body weight. Advised the owner to start Lime sulfur dip (DEMOSCANIL 250ml@Jibss) from second week onwards twice weekly at a dilution of 10 ml/litre of water for three weeks. Also advised the owner to isolate the infested cat from other cats in the household. The animal was found negative for both mites and the hair coat showed marked improvement, one month post treatment. Treatment with oral Omega 3 and Omega 6 fatty

acid supplement (NUTRICOAT ADVANCE@Petcare) at a dose rate of 2.5ml OD and Lime sulfur dip weekly once at a dilution of 10 ml/litre of water for one more month was advised to avoid the chance of further recurrence.

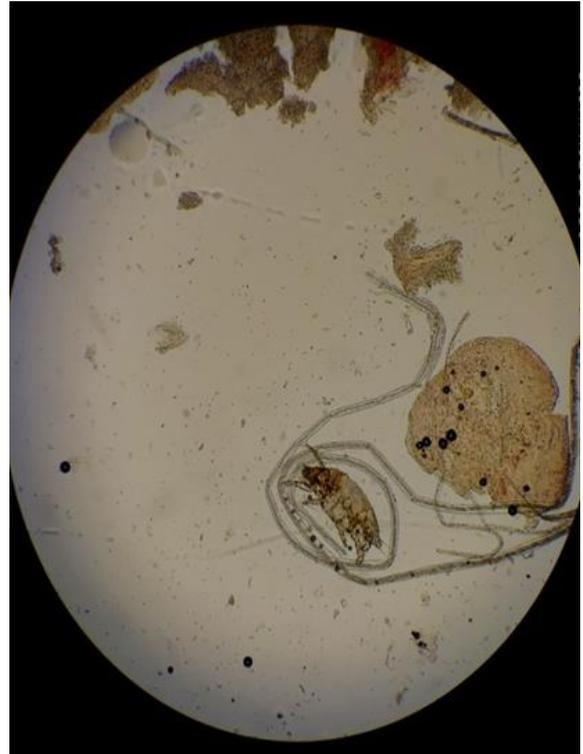


Fig 3: Fur mite, *Lynxacarus radovskyi* (10X)



Fig 4: Digitally magnified view of adult *Lynxacarus radovskyi* with head plate (red arrow), propodosomal plate (black arrow) and finger print like striations on abdomen (yellow arrow)



Fig 5: Ear mite, *Otodectes cynotis* (10X)

Lynxacarus radovskyi mites are commonly found on tail head, tail tip and perineal area. Heavily infested cats show whole body lesions like dry, dull, and rust-coloured hair coat that appeared peppered^[11]. Morphological characteristics of *Lynxacarus radovskyi* were similar to those reported by Jeffery *et al.* (2012)^[12]. *Otodectes cynotis* live mainly on the horizontal and vertical ear canal lining surfaces, but are occasionally seen on head, feet and tip of tail because cats have a tendency to sleep coiled and curled up with their heads^[13, 14]. Infestation with both the mites are highly contagious and close contact and fomites play a role in transmission^[1, 6, 8, 15]. So it is necessary to separate the infested cat from other cats in order to prevent further spread. Otodectic mange had a wide host range and there are reports of cross infestation to dogs, rabbits, ferrets and even to humans when there is close contact with affected animals^[9, 10]. Though host specificity of lynxacarosis is considered only in cats, but a case of cross infestation in a dog found in the same environment as infested cats was also reported^[16]. There is a single report of dermatitis in a human being in the form of papular rashes while handling cat heavily parasitized with *Lynxacarus radovskyi*^[17]. So the pet owners should take special care while handling cats heavily parasitized with both the mites. Hot humid climate seems to favour the survival of *Lynxacarus radovskyi*^[6]. Based on research papers, *Lynxacarus radovskyi* infestation was only diagnosed in Persian cats from Kerala so far. Long flowing hair coat of Persian cat as well as tropical hot humid climate of Kerala may favour the survival^[2, 3].

According to Jayanthi *et al.* (2017), subcutaneous injection of Ivermectin @ 300 µg/kg body weight once a week for 5 weeks was found effective for control of *Lynxacarus radovskyi*^[1]. Fipronil was another acaricide found to be successful for treatment of Lynxacarosis^[8, 18]. A combination of Ivermectin and Fipronil was also reported to be effective for eliminating *Lynxacarus radovskyi* mite without recurrence^[3]. Selamectin was safe and effective for complete eradication of fur mite and ear mite in cats according to many researchers

[4, 5, 19]. In the present case, the cat showed response to Selamectin spot-on (6%) and Lime sulfur dip. Complete clearance of both the mites was observed one month post treatment.

Conclusion

The present case revealed the detection of *Lynxacarus radovskyi* and *Otodectes cynotis* in a Persian cat and its successful therapeutic management with Selamectin and Lime sulfur dip. Isolation of infested animal as well as full course of treatment with acaricides favours complete recovery from both parasitic mites.

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