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Diagnostic and therapeutic management of *Notoedres cati* infestation in felines: A case study

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Abstract

Aim: The present study aimed to describe the clinical presentation, diagnostic workup, and treatment outcomes in six cats that were positive for *Notoedres cati*.

Study design: A clinical case study describing the diagnosis and therapeutic management of *Notoedres cati* in felines.

Place and Duration of Study: The study was conducted at Veterinary Clinical Complex, Rajendranagar, Hyderabad, and the case management and follow-up were carried out over a period of 28 days.

Methodology: Six months to two-year-old cats were presented with alopecia, varying degrees of pruritus, erythema, crusty lesions, over the face, neck, ear margins. On clinical examination temperature, respiratory rate, pulse rate, heart rate were within the normal range. Hematobiochemical changes noticed were Eosinophils and Neutrophils. Deep and superficial skin scrapings were taken from the edges of active lesions. Affected animals on microscopic examination confirmed the presence of *Notoedres cati* with characteristic feature of round body, short legs, 'thumb print'-like dorsal striations and dorsal anus position. All the affected animals were treated with ivermectin injection, multivitamin and multimineral syrup.

Results: The cats exhibited marked improvement following the second dose of ivermectin, and full recovery was achieved after the fourth treatment, with no adverse effects were noticed during the treatment period.

Conclusion: Early diagnosis and prompt treatment with appropriate acaricidal therapy, such as ivermectin, ensure rapid recovery. Owing to its zoonotic potential, the parasite poses a health risk to humans in close contact with infested animals, leading to transient pruritic lesions. Therefore, timely veterinary intervention, good hygiene, and effective control measures in multi-cat environments are essential to safeguard both animal and public health.

Keywords: *Notoedres cati*, zoonotic importance, ivermectin

Introduction

Notoedres cati is an extremely contagious mite responsible for causing Notoedric mange, a severe and itchy skin disorder in cats. This parasite mainly affects both domestic and wild felines but can occasionally transmit to other mammals, including humans (Griffin *et al.* 1993)^[2]. The mites invade the outer layers of the skin, producing intense irritation, redness, crusting, and gradual loss of hair, particularly around the head, ears, and neck regions. If the disease is not treated promptly, it may extend to other parts of the body and lead to complications such as bacterial infections and poor body condition. Notoedric mange has significant clinical and welfare importance because of its rapid spread in cat populations and its zoonotic potential. Early diagnosis and effective treatment are essential to prevent severe dermatological damage and to control outbreaks in both household and shelter environments.

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Fig 1: Crusty lesions at ear margins

Materials and Methods

The present study was conducted in group of 6 cats having age group 6 months to 2 years showing clinical signs such as erythema (66.6%), itching (100), hair loss (83.3%), and crust formation (100%), particularly on the ears, face, and neck (Fig. 1). On clinical examination temperature, respiratory rate, pulse rate, heart rate were within the normal range. Hematobiochemical changes were noticed in the Eosinophils and Neutrophils.

- 1. Sample collection:** Deep and superficial skin scrapings and tape impression smear were taken from the edges of active lesions using a sterile scalpel blade dipped in liquid paraffin. The collected material was transferred onto clean glass slides and covered with coverslips.
- 2. Microscopic examination:** Samples were examined under a low-power microscope to identify the presence of mites. Identification was based on characteristic morphological features such as the round body, short legs, 'thumb print'-like dorsal striations and dorsal anus position (Fig. 2). The mites were identified as per the reports of Walker (1994) [6].
- 3. Treatment:** The affected cats were treated with injection ivermectin@ 0.2 mg/kg s/c showing high efficacy reported by Senthil Kumar *et al.* (2008) [3] weekly once, four doses, multivitamin and multimineral syrup.

The cat owners who had close contact with affected cats which is positive for the *Notoedres cati* also showing intense pruritus, erythematic crusted papules on fingers, hands.

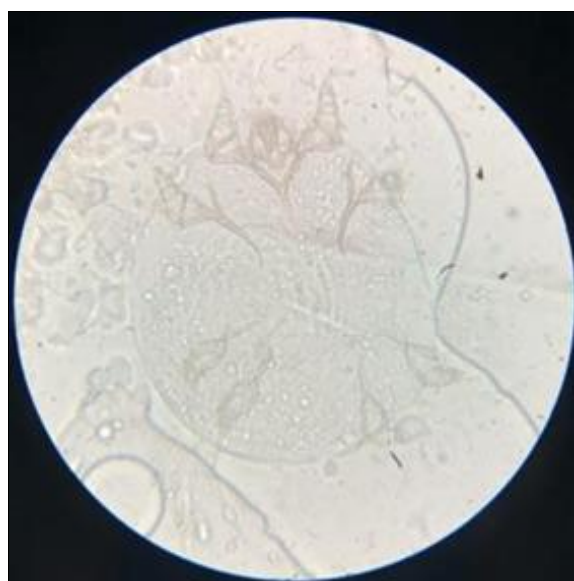


Fig 2: *Notoedres cati* mite with thumb print like dorsal striations



Fig 3: Itchy rashes

Results and Discussion

The present study shows that *Notoedres cati* causes a common and serious skin disease in cats known as notoedric mange. The parasite is highly contagious and spreads easily among cats through close contact. The main areas affected are the head, ears, neck, and front legs, where the skin becomes thick, dry, scaly, and covered with crusts. The itching is very severe because the mites burrow into the skin, and this leads to scratching, wounds, and hair loss. The biochemical analysis and complete blood picture is within in the normal range but changes were seen eosinophil% (4.43 ± 0.54) and neutrophil (92.30 ± 0.72). Diagnosis is mainly based on finding the mites in deep skin scrapings under a microscope. The mites have a round body and short legs, which make them easy to identify. Treatment with acaricidal medicines like ivermectin with parental showing high efficacy reported by Senthil Kumar *et al.* (2008) [3], on along with supplementation of multivitamin and multimineral syrup is usually very effective. The owner was advised to thoroughly disinfect all inanimate objects, including bedding and feeding utensils, using suitable antiseptic solutions as part of proper management practices to prevent the spread and recurrence of the disease. Throughout the treatment period, no side effects or relapses were observed. The kitten showed noticeable improvement after the second dose of ivermectin, with complete recovery achieved by the fourth treatment. No adverse clinical signs were observed during the treatment period. Although *Notoedres cati* can occasionally affect humans who handle infected cats, the infestation in people is short-lived and mild (Chakrabarti, 1986) [1]. Still, using gloves and maintaining hygiene while handling infected cats is important.

Table 1: Mean $\pm$ SE values of Hematological findings in affected cats (n=06)

Parameter	Infected cats (n=06)	Reference values*
Hb (g/dl)	10.67 ± 0.49	9.3-15.3
TEC (106/ μ l)	4.92 ± 0.39	4.6-10
TLC (106/ μ l)	8.88 ± 0.44	5.5-19.5
PCV (%)	23.72 ± 0.52	28-49
PLT ($\times 10^5$ / μ l)	3.02 ± 0.68	2-5
Neutrophils (%)	92.30 ± 0.72	35-85
Lymphocytes (%)	27.44 ± 0.33	12-45
Monocytes (%)	6.45 ± 0.44	2-9
Eosinophils (%)	4.43 ± 0.54	0

* Reference values taken from Merck Manual

Table 2: Mean $\pm$ SE values of serum biochemical findings in affected cats

Parameter	Infected cats (n=06)	Reference values*
ALT(U/L)	57.04 $\pm$ 1.23	10-100
ALP(U/L)	88.34 $\pm$ 1.67	6-102
AST(U/L)	54.34 $\pm$ 0.72	10-100
Total protein(g/dL)	7.34 $\pm$ 0.83	5.2-8.8
Albumin(g/dL)	2.84 $\pm$ 0.88	2.5-3.9
Total bilirubin(mg/dL)	0.24 $\pm$ 0.66	0.1-0.3
BUN (mg/dL)	19.34 $\pm$ 0.50	10-30
Creatinine (mg/dL)	1.44 $\pm$ 0.72	0.8-1.8
Glucose (mg/dL)	66.34 $\pm$ 1.42	60-10

* Reference values taken from Merck Manual

Conclusion

Notoedres cati infestation is an important parasitic skin disease of cats characterized by intense itching, crusting, and hair loss, particularly around the head and ears. Prompt diagnosis and effective treatment are essential to prevent severe skin damage and spread to other animals. Because the mite is zoonotic, humans in close contact with affected cats may develop transient, itchy skin lesions. Therefore, maintaining good hygiene, regular veterinary care, and early treatment of infested animals are crucial to protect both feline and human health.

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Competing Interests

Authors have declared that no competing interests exist.

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