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Clinicoparasitological diagnosis and selamectin-based therapeutic management of notoedric mange in domestic cats with zoonotic manifestations

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Abstract

The present report describes the clinicoparasitological diagnosis and therapeutic management of notoedric mange in two young domestic cats with suspected zoonotic transmission to the owner. Two female domestic cats, approximately four months of age, were presented with a history of severe pruritus, alopecia, rough hair coat, crusting, scaling and reduced appetite. Clinical examination revealed emaciation, thick crusted lesions, lichenification and marked involvement of the face, ear margins, nose, neck and forelimbs. The owner also reported severe itching with erythematous crusted papular lesions and hyperpigmentation, suggestive of possible zoonotic involvement. Skin scrapings and tape impression smears were collected from affected areas and processed with 10% potassium hydroxide. Microscopic examination revealed adult mites morphologically consistent with *Notoedres cati*, confirming notoedric mange. The affected cats were treated with topical selamectin spot-on at 6 mg/kg body weight, repeated after two weeks, along with supportive dermatological care and hygiene measures. Pruritus reduced within the first week, while marked improvement in crusting, scaling and general condition was observed by the second week of therapy. Follow-up skin scrapings were negative for *Notoedres cati*. The present report highlights the importance of early diagnosis, selamectin-based treatment and owner awareness in the successful management of feline notoedric mange and prevention of zoonotic transmission.

Keywords: *Notoedres cati*, feline scabies, domestic cat, selamectin, skin scraping, zoonosis, pruritus

Introduction

Notoedric mange, commonly known as feline scabies, is a highly contagious parasitic skin disease of cats caused by the burrowing mite *Notoedres cati*. The disease is characterized by intense pruritus, alopecia, crust formation, scaling, lichenification and progressive thickening of the skin. Young cats, stray cats, debilitated animals and cats kept in close-contact environments are more commonly affected.

The disease usually starts around the ears, face and neck and may later spread to other body regions. Affected cats show persistent scratching, restlessness, poor hair coat, reduced appetite and loss of body condition. If not treated in time, the condition may become severe and may predispose the animal to secondary bacterial infection.

Notoedric mange also has zoonotic importance. Humans in close contact with affected cats may develop transient pruritic papules, erythematous lesions and irritation. Therefore, feline notoedric mange should be considered not only an animal health problem but also a public health concern.

Several acaricidal drugs have been used for the treatment of feline mange. Selamectin is a topical macrocyclic lactone used in cats for ectoparasitic and endoparasitic control. Its spot-on application makes treatment convenient, especially in young cats where repeated injections may be stressful. The present report documents the diagnosis and selamectin-based therapeutic management of notoedric mange in two domestic cats with suspected zoonotic involvement in the owner.

Materials and Methods

Case presentation

Two female domestic cats, approximately four months old, were presented to the Teaching Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, DSVCKV, Anjora, Durg, Chhattisgarh, with dermatological complaints.

History

The cats had a history of persistent itching, progressive hair loss, rough hair coat, scabby lesions and reduced appetite. The owner also reported severe itching for approximately one week. Small erythematous crusted papules and hyperpigmented lesions were observed on the owner's skin, suggesting possible zoonotic transmission from the affected cats.

Clinical examination

A detailed dermatological examination was carried out. Lesion type, severity and distribution were recorded. Both cats showed emaciation, rough hair coat, alopecia, thick crusting, scaling and lichenification. Lesions were mainly distributed over the face, ear margins, nose, neck and forelimbs.

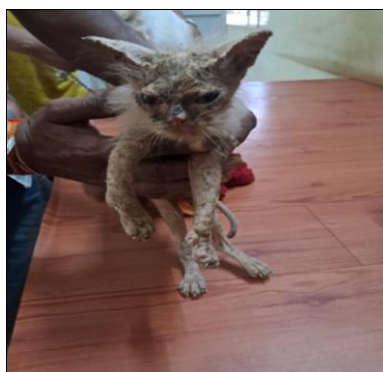


Fig 1: Clinical appearance of affected cat showing alopecia, thick crusting, scaling and lichenification suggestive of notoedric mange

Sample collection and parasitological examination

Skin scrapings were collected from multiple active lesion sites. Tape impression smears were also prepared from affected regions. The collected material was processed with 10% potassium hydroxide to clear keratinous debris and examined microscopically under low power.

Adult mites morphologically consistent with *Notoedres cati* were detected, confirming the diagnosis of notoedric mange.



Fig 2: Microscopic examination of skin scrapings revealed adult mites consistent with *Notoedres cati*. Based on clinical and parasitological findings, the condition was confirmed as notoedric mange

Therapeutic Management

The affected cats were treated with selamectin spot-on at 6 mg/kg body weight, applied topically over the skin at the base of the neck after parting the hair coat. The treatment was repeated after two weeks.

Supportive management included cleaning of crusted lesions, improvement of nutrition, prevention of excessive scratching and maintenance of hygiene. The owner was advised to avoid close handling of affected cats during the active stage of infestation, wash hands after contact, clean bedding and resting areas, and consult a physician if skin lesions persisted. No injectable ivermectin was used in this revised therapeutic protocol.

Results

Both cats showed typical clinical signs of notoedric mange, including severe pruritus, alopecia, crusting, scaling, rough hair coat and lichenification. The lesions were more prominent around the face, ear margins, nose, neck and forelimbs.

Microscopic examination of skin scrapings revealed adult mites consistent with *Notoedres cati*. Based on clinical signs and parasitological findings, the condition was confirmed as notoedric mange.

The owner showed pruritic skin lesions in the form of erythematous crusted papules and hyperpigmented areas, indicating suspected zoonotic involvement.(fig 3).



Fig 3: Erythematous crusted papular lesion with hyperpigmentation on the owner, suggestive of zoonotic dermatitis following close contact with affected cats.

After treatment with selamectin, pruritus reduced within seven days. By the second week, both cats showed visible improvement in appetite, activity and skin condition. Crusting and scaling reduced gradually, and the hair coat started improving(fig 4). No adverse effects were observed during the treatment period. Follow-up skin scrapings after completion of therapy were negative for *Notoedres cati*.



Fig 4: Recovery of the cat after treatment

Table 1: Clinical and Diagnostic Observations in Affected Cats

Parameter	Observation
Species	Domestic cat
Number of animals	2
Sex	Female
Age	Approximately 4 months
Major clinical signs	Severe pruritus, alopecia, rough hair coat, crusting, scaling and lichenification
Main lesion sites	Face, ear margins, nose, neck and forelimbs
General condition	Reduced appetite and emaciation
Diagnostic samples	Skin scraping and tape impression smear
Laboratory processing	10% potassium hydroxide preparation
Microscopic finding	Adult mites consistent with <i>Notoedres cati</i>
Final diagnosis	Notoedric mange
Zoonotic observation	Pruritic papules and hyperpigmented lesions in owner

Table 2: Selamectin-Based Therapeutic Response

Parameter	Observation
Main drug used	Selamectin spot-on
Dose	6 mg/kg body weight
Route	Topical application
Application site	Base of neck after parting hair coat
Treatment schedule	Repeated after two weeks
Supportive care	Cleaning of lesions, nutritional support and hygiene measures
Response by day 7	Reduction in pruritus
Response by second week	Reduced crusting, scaling and improved general condition
Follow-up skin scraping	Negative for <i>Notoedres cati</i>
Adverse effect	Not observed

Discussion

Notoedric mange is an important parasitic dermatosis of cats and is commonly associated with severe pruritus, alopecia, crust formation, scaling and thickening of the skin. In the present cases, the distribution of lesions around the face, ear margins, nose, neck and forelimbs was characteristic of *Notoedres cati* infestation.

Skin scraping remains a simple and reliable diagnostic method for feline notoedric mange. In the present cases, diagnosis was confirmed by microscopic detection of adult mites in skin scrapings processed with 10% potassium hydroxide. Laboratory confirmation is important because similar clinical signs may also be observed in dermatophytosis, demodicosis, otodectic mange, flea allergy dermatitis, allergic dermatitis and bacterial pyoderma.

The zoonotic manifestation observed in the owner is clinically significant. Although *Notoedres cati* is host-adapted to cats, close contact with infested animals may cause transient pruritic dermatitis in humans. Therefore, veterinarians should enquire about itching or skin lesions in owners and family members when dealing with feline mange cases.

Selamectin was used as the main therapeutic drug in the present cases. Topical application was convenient and avoided the stress associated with repeated injections. The reduction in pruritus within one week and marked improvement by the second week indicated a satisfactory therapeutic response. Negative skin scrapings after completion of treatment confirmed parasitological recovery. Owner education and environmental hygiene are essential components of management. Cleaning of bedding, restriction of close handling during the active stage, treatment of in-contact animals when required and follow-up examination help reduce reinfestation and zoonotic exposure.

Conclusion

The present report confirms that notoedric mange should be suspected in young cats showing severe pruritus, alopecia, crusting, scaling and lichenification, particularly around the

face, ears, nose, neck and forelimbs. Microscopic examination of skin scrapings is an effective diagnostic tool for confirmation. Selamectin spot-on at 6 mg/kg body weight, repeated after two weeks, along with supportive care and hygiene measures, resulted in successful clinical and parasitological recovery. The suspected zoonotic involvement in the owner highlights the need for early diagnosis, prompt treatment and proper owner counselling.

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Conflict of Interest

The authors declare no conflict of interest.

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