

**FIVE CASES OF HUMAN INFESTATION WITH FELINE SCABIES,
NOTOEDRES CATI (ACARINA : SARCOPTIDAE)**

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Accepted for Publication on December 19, 1978

Abstract

Five members involving two families infested with feline mange mite, *Notoedres cati* (Hering, 1838) in Okayama City were reported. Dermatitis in the present patients had its source in scabby cats kept as an animal pet. The cutaneous findings of the patients indicated the eruption observable diagnostically similar to those of human scabies caused by *Sarcoptes scabiei* (De Geer, 1778), but not any scabby worm or a tunnel was to be seen in the skin of the present patients.

INTRODUCTION

In Japan, the human cases infested with feline scabies or mange mite, *Notoedres cati* (Hering, 1838) were at first described by Kusunoki¹⁾ on four patients in Aichi Prefecture, and since then about sixty cases have been reported.

Although dermatitis of this type has been reported often over the past years in foreign countries, it seems to be important to deal this problem from zoonotic or public health standpoint.

The authors wish to report here the human infestation with feline scabies found in Okayama City together with some bibliographical considerations.

REPORT OF CASES

Five human cases of *N. cati* infestation in Okayama City were summarized in Table 1. The patients from case 1 to case 4 shown in Table 1 were of familial infestation. The case 1 was the most severe infestation of all the patients.

Case 1, an office girl, noticed the presence of itching eruptions in the skin of the abdomen in early Sept., 1977. She visited a physician near the residence

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TABLE 1. Cases of *Notoedres cati* infestation

Case No.	Patient		Date of first examined	Distribution of lesions
	Age	Sex		
1.	19	F	Sept. 1977	chest, abdomen, back, arms, buttocks and extremities
2.	17	F	" "	"
3.	8	M	" "	"
4.	41	F	Oct. 1977	chest, abdomen, back, upper arms and thighs
5.	12	F	" "	chest, abdomen, back and thighs

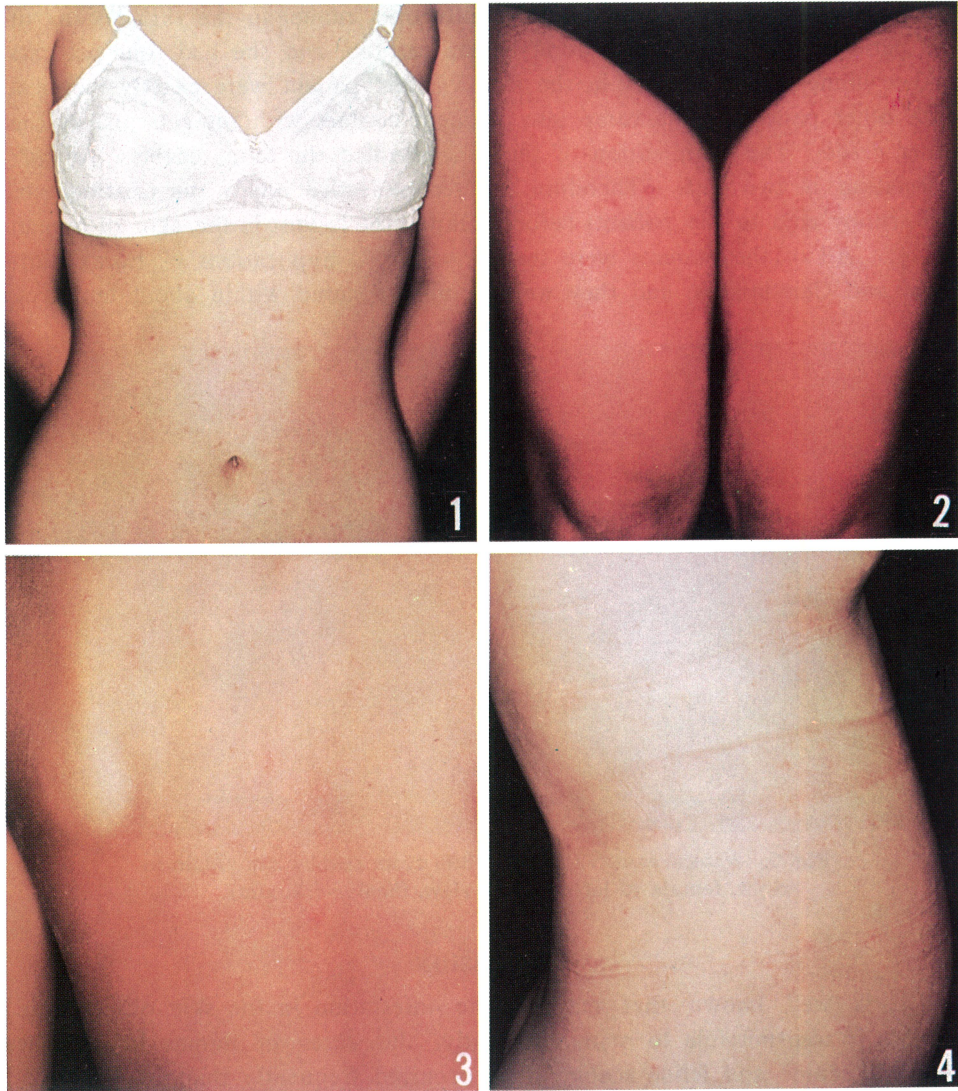
and had undergone some treatment without success. Then she visited the Kawasaki Hospital Division, Department of Dermatology, in Sept. 17th, 1977, because she had the eruptions gradually spread all over the body.

Inspection of the skin revealed the presence of itching eruptions over the chest, abdomen, arms, as well as the buttocks and extremities. The eruption showed erythematous papules and vesicles of a millet in size, and cutaneous findings appeared as the lesions of human scabby infestation caused by *Sarcoptes scabiei* (Fig. 1).

Examination of the skin lesions for scabby mite was carried out exhaustively with discretion, but no scabby mite or a tunnel was found in spite of the thorough examination of the skin surface on several occasions. The followings became clear after the questioning the patient as to whether she had a pet animal or not. She was greatly fond of the cat, and she had been keeping four cats at her home for several years. Moreover, she used to hold the cat in arms, and frequently she shared the bed with the cats. A few days after visiting our Dermatology Department she brought two cats. On a superficial examination of these cats the lesions peculiar to feline scabies were observed on the ears and the hind legs. A great many individual mites of *N. cati* were found from the buffy crusts in the lesions of cats by a microscopic examination (Fig. 5).

Feline scabby infestation occurred successively in other members of the family such as a sister (case 2, a school girl), a brother (case 3, a school boy) and her mother (case 4, a housewife) subsequently (Figs. 2-4). They were also diagnosed as the cases of infestation with *N. cati* because none had scabby mites in the skin lesions, and all the cutaneous findings in three members were the same as the first case.

Case 5, a school girl, first noticed the presence of itching eruptions in the skin of the trunk, and five days later she visited the Kawasaki Hospital on Oct. 17th, 1977. Medical examinations showed that the itching erythematous



Figs. 1-4. Photographs showing the lesions of erythematous eruption caused by *N. cati* infestation.
1) the thoracic and abdominal regions from case 1,
2) the thighs region from case 2, 3) the back region from case 3,
4) the abdominal region from case 4.

papules in size of a millet to a rice grain were spread over the chest, abdomen, back and thighs. Examinations of the lesions some papules revealed the crust in the center of the papule, but there were seen no vesicle, hyperkeratonic

nodule, hyperpigmentation nor scabby mite or a tunnel in the skin lesions of the patient. She was greatly fond of the cat too, and she had four pet cats at her home. The lesions in the skin of this patient were exactly identical with other patients. She came into frequent contact with the cats just as the other cases. The examination of the cats revealed the feline scabies, *N. cati* infestation in two cats. Therefore, we recommended highly the treatment of the scabby cats to the patients before treating the lesions in the skin of human being. All of the patients were treated with two applications of Eurax ointment and Celestamine, and they were completely cured within about ten days.

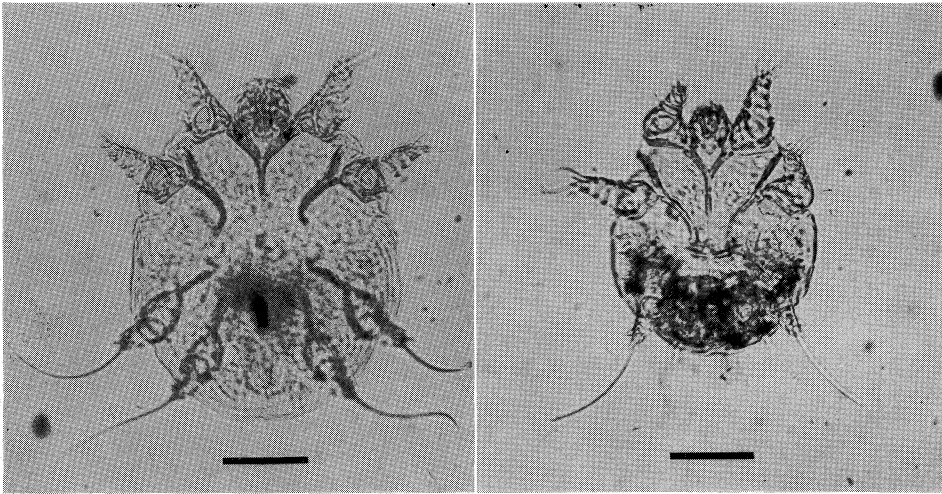


Fig. 5. *Notoedres cati* (Hering, 1838) from scabby cat. Male to right, female to left, ventral view. (Scale=0.05 mm)

DISCUSSION

It is well known that mange mite infestation in the skin of domestic animals is transmissible to man. Recently, the cases of human infestations with the canine and feline scabies have occurred frequently than are generally thought.

The first concrete feline scabby infestation on human skin was discovered by Hering who found it on a girl and a servant who slept together with a scabby cat. Hering, in 1838, observed the disease on two young men, and he was the first who described the parasite (Toomey)².

Since then the cases of human infestation with *N. cati* have increased in foreign countries. On the other hand, human infestation with *N. cati* in Japan was first reported by Kusunoki¹, and about sixty cases of this disease have

been so far reported, but it is considered that great many cases are still not being identified.

Ito *et al.*³⁾ summarized thirty-six cases of human infestation with *N. cati* in Japan reported before 1959. The clinical features of *N. cati* infestation are characterized by its propensity of family or household outbreaks. According to the past records of human infestation with *N. cati*, most of them are the familial cases. In the present cases, four patients out of five were the familial infestation. Moreover, the predominant characteristic of the disease is the proneness of the women to this disease. This tendency may well be attributed to the women's great love for the cat as an indoor pet.

The disease of this type has a causal connection between human being and indoor animal pet, especially it has an immediate connection with pet cat in this instance. It appears to be the strongest proof that the parents of the patient in case 5 had not contracted the disease for they rarely came in contact with the scabby cats.

The skin lesions cause by *N. cati* infestation strongly resemble those of human scabby infestation, but not any scabby worm nor a tunnel was to be seen in the skin lesions of our individual cases. Most of the investigators have failed to detect individual worms of *N. cati* in the skin lesions of human being except for Kobayashi⁴⁾ who is the only one detecting any individual worms in the skin lesions of a three-year-old child. Thus, the diagnosis of the disease is not always easy for dermatologists.

The authors consider it necessary for the specialists to formulate a suitable diagnostic method of their own for the dermatitis of this type, and also it seems essential to examine pet animals with which the patient comes in contact at home.

The studies of Kusunoki¹⁾ indicate that the optimal temperature for the survival of scabby worm is confined within very narrow limits. If it is so, it may safely be said that the host-specificity of the scabby worm can be determined only by the skin temperature of host species. A pet breeder need be advised of the necessity to pay a special attention to the health and sanitation of the animal pets else similar cases of scabies are apt to occur in the future.

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