BRIEF NOTE

Dermatophytosis Caused by *Trichophyton mentagrophytes* in Squirrels

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*Trichophyton mentagrophytes* is a zoonotic dermatophyte and one of the most common causative agents of dermatophytosis in animals. A review of literature indicates that it is widespread in the world and pathogenic for diverse species of domestic, laboratory and wild animals, including rodents and larger mammals. Few papers have been published on its infection in squirrels [1, 2].

The present report deals with *T. mentagrophytes* infection in squirrels. It is believed that this is the first report of dermatophytosis in squirrels in Japan.

Five striped squirrels belonging to the Asian chipmunk, *Tamias sibiricus*, were presented to the author's clinic for diagnosis and treatment of skin disease. They had small circular desquamative lesions about 5 to 7 mm in diameter with loss of hair on the face, including the ears and nose, but not in any other area on the body surface. The lesions on the 5 animals appeared similar in character (Fig. 1). According to the owner, no skin lesions were noticed in any animal at the time of purchase about 2 months before. All the animals have been kept in the same cage since then.

Skin scrapings were taken from the lesions of all the animals. Direct microscopical examination showed a tissue invasion by a dermatophyte in all the animals. Specimens were cultured on Sabouraud-cycloheximide-chloramphenicol agar at room temperature. Colonies grew rapidly, reaching 50 to 65 mm in diameter 2 weeks later. Grossly, the surface of the colony was granular to powdery and grayish or yellowish white, except the central part which was yellowish brown in color, and the reverse side showed yellowish brown to rose brown (Fig. 2). Microscopical examination revealed a number of small globose microconidia, abundant smooth, thin-walled, multisepitate, long spindleshaped macroconidia, and winding spirals (Fig. 3). On the basis of these morphological characters, the isolates were identified as *Trichophyton mentagrophytes* (Robin) Blanchard, 1896.

The mating examination was performed on *T. mentagrophytes* isolated from the present cases with single ascospore isolates of *Arthroderma simii*, *A. benhamiae*, and *A. vanbreuseghemii* [5, 6]. As a result, all the strains tested were compatible with the ++ strain of *A. vanbreuseghemii*.

In each squirrel a fungicidal ointment (1% clotrimazole) was applied daily to the affected area. When examined a month

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later, all the lesions were apparently healed with alopecic scar. At that time, no fungal elements were observed in any skin scraping taken from the sites of infection.

A few papers have been published on the isolation of dermatophytes from squirrels. In 1939, DeLamater described for the first time *T. mentagrophytes* infection in common gray squirrels, suggesting that the squirrel might be a new host for the ringworm fungus [2]. Since then, a case of dermatophytosis caused by *Keratinomyces ajelloi* in a Malabar squirrel and the isolation of *A. simii* from squirrels without signs of infection have been reported [3, 4].

The *T. mentagrophytes* infection prevalent among animals may have been caused by contact with carriers or animals with latent infection in the same cage of the pet shop. It was suspected that some squirrels might have already been involved in the latent infection in the importer’s or the dealer’s, and that the infection might be common in Korea, since all the striped squirrels had been imported from Korea. *T. mentagrophytes* is frequently transmitted from affected animals to man, and therefore dermatophytosis caused by this fungus in this animal is important from a public health point of view.

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The outline of this study was read before the 9th Meeting of the Japanese Society of Small Animal Dermatology.

References


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**Explanation of Figures**

Fig. 1. Circular alopecic lesion caused by *Trichophyton mentagrophytes* on the nose of a squirrel.

Fig. 2. The surface of culture on Sabouraud agar at 27°C for 2 weeks.

Fig. 3. Smooth, thin-walled, multiseptate macroconidia, numerous small globose microconidia, and winding spirals produced on Sabouraud agar. Cotton blue staining. ×400.