BRIEF NOTE

An Additional Case of Canine Dermatophytosis
Caused by *Trichophyton rubrum*

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*Trichophyton rubrum* is generally regarded as an anthropophilic dermatophyte, since it is the most common causative agent of human ringworm and has rarely been isolated from animals. Kaplan and Gump [1] reported a case of ringworm in a Boxer acquired from the infected owner. Refai and Miligy [4] found the infection in a family transmitted from a cat. Previously, the author described the first case of canine ringworm caused by this dermatophyte in Japan, suggesting that the infection might have been transmitted from the owner’s athlete’s foot to the dog [2]. Recently, he has encountered the second case of *T. rubrum* infection in a dog. In this case the infection might have been caused by contact with the affected owner, as well as in the first case.

An 8-year-old female Poodle was presented to the author’s clinic for diagnosis and treatment of its skin disease. It had an erythematous and desquamative lesion with slight pigmentation and loss of hair on the trimmed lower back (Fig. 1). The owner stated that the lesion had appeared at first as small red spots about a month before and gradually spread around, and that he had been suffering from intractable athlete’s foot for many years.

Specimens were collected from lesions of both dog and owner. Direct microscopical examination with 15% KOH solution containing dimethylsulfoxide revealed branched, septate hyphae in all the skin scrapings but not in the hair. Some specimens were cultured on Sabouraud-cycloheximide-chloramphenicol agar at room temperature. Colonies grew rather slowly, reaching 4 cm in diameter 4 weeks later. Grossly, they had a white, fluffy and radial surface with a reddish purple pigment on the reverse side. Particularly, colonies grown on diluted (1:10) Sabouraud agar [6] developed a characteristic pigment (Fig. 2). Microscopically, a number of clubbed or sesamoid microconidia and a few elongate, multiseptate, smooth and thin-walled macroconidia were observed.

Culture transmitted on heart infusion tryptose agar produced numerous macroconidia (Fig. 3). In the urease test [5], the standard strain of *T. mentagrophytes* maintained at the author’s laboratory turned the color of the medium to red within 3 days after inoculation, but the strains isolated

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from the dog and its owner did not even 7 days after inoculation (Fig. 4).

The mating examination [5, 6] was performed on the isolates from the present cases to observe mating types. When these isolates were cultured on diluted Sabouraud agar with salts with the “+” and “−” strains of Arthroderma simii [6], they revealed the “−” mating type (Fig. 5), as described by previous authors [5, 7]. On the basis of these mycological findings, the isolates from the dog and its owner were identified as Trichophyton rubrum (Castellani) Sabouraud, 1911.

The dog was washed with 1% selenium disulphide solution once a week. A fungicidal ointment (1% clotrimazole) was applied daily to the affected area. A month later, the lesion was apparently healed, with a pigmented and alopecic scar. At that time no fungal elements were observed in skin scrapings taken from the site of infection.

A few cases of T. rubrum infection have been reported in animals. In some of them the animal was suspected to have come into contact with an infected human being [1, 2, 4]. In the present case, as well as in that mentioned in the previous report by the author, it is likely that the infection may have been transmitted from the owner to his dog, since he had perennial tinea pedis caused by T. rubrum and a habit of sleeping with his dog. The lesion of the dog became apparent after summer when the owner’s lesions were exacerbated.

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References


要約

Trichophyton rubrum による犬の dermatophytosis の一追加症例（短報）：甲田寿昭（日本獣医畜産大学家畜病学教室）——Trichophyton rubrum による犬の ringworm については、さきに、飼主の“みずむし”から感染したと考えられる症例を、わが国における最初の記載として報告したが、今回、それと同様にやはり飼主から感染したと思われるブードルの症例を経験したので、第 2 例目として追加報告する。犬の病巣はトリミングされた腰背部に限局し、紅斑、落屑、脱毛がみられた。飼主は同菌による多年にわたり“みずむし”をもっており、夜間犬と一緒に寝る習慣があった。
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Explanation of Figures

Fig. 1. Erythematous and desquamative lesion caused by *Trichophyton rubrum* on the trimmed lower back of a Poodle.

Fig. 2. Colonies grown on diluted Sabouraud agar, showing a reddish pigment production.

Fig. 3. Smooth, thin-walled, multiseptate, elongate macroconidia and clubbed or sesamoid microconidia produced on heart infusion tryptose agar. Lactophenol cotton blue staining. ×200.

Fig. 4. Urease test exhibiting a difference between *T. mentagrophytes* (left) and *T. rubrum* (right) on the 7th day after inoculation.

Fig. 5. Sexual stimulation (arrow) observed between the isolate of *T. rubrum* and the “+” strain of *A. simii.*
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