

Tinea corporis from microsporum canis: A case report in 2 patients from 1 asymptomatic feline

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ABSTRACT:

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Tinea corporis is a common dermatophyte infection which causes pruritic erythematous scaly papules and plaques. Most common causative organisms are *Trichophyton rubrum* and *Trichophyton mentagrophytes*. However, *Microsporum canis* can be the pathogen leading to the more sudden and extensive clinical manifestations. *M. canis* is a zoophilic organisms residing in pets such as dogs or cats, whereas the infected pet can be totally asymptomatic. The treatment is usually systemic antifungal for 2-4 weeks.

We report 2 patients presented with pruritic erythematous scaly plaques-diagnosed as tinea corporis from *Microsporum canis*. The patients lived together with their household cat. Examination of the asymptomatic cat, its fur showed positive green color under wood's lamp and the culture showed *Microsporum canis* as well. The systemic antifungal was given along with the advice to thoroughly house cleaning and the treatment for the patients' cat.

Key words: *M. canis*, Zoophilic, Tinea corporis, Wood's lamp

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บทคัดย่อ:

วริษฐ์ กอบวรรณนະกุล สุมนัส บุณยรัตเวช จรัสศรี พิยาพรณ การติดโรคกลากจากเชื้อ ไมโครสปอรัม เค นิส จากแมวเลี้ยงสู่ผู้ป่วย 2 ราย วารสารโรคผิวนัง 2561; 34: 299-304.

ภาควิชาตจวิทยา คณะแพทยศาสตร์ศิริราชพยาบาล มหาวิทยาลัยมหิดล

โรคกลาก (*Tinea corporis*) เกิดจากการติดเชื้อรา ซึ่งเชื้อที่พบบ่อยได้แก่ *Trichophyton rubrum* และ *Trichophyton mentagrophytes* ในขณะที่โรคกลากที่เกิดจากเชื้อกลุ่ม *Microsporum canis* ที่พบได้ในสัตว์เลี้ยง เช่น แมว หรือ หมา สัตว์เลี้ยงดังกล่าวอาจมีหรือไม่มีอาการแสดงของการติดเชื้อ โดยเชื้อกลุ่มนี้ทำให้รอยโรคมีการอักเสบมากกว่า และรุนแรงกว่า หากไม่ทำการรักษาโรคกลากอาจทำให้เกิดผิวหนังอักเสบตามมาได้

การรักษาประกอบด้วย การทานยาในกลุ่ม เอโซล (Azoles) เป็นเวลา 2-4 สัปดาห์ รวมไปถึงการทำความสะอาดสภาพแวดล้อมและแหล่งพาหะ ได้แก่ สัตว์เลี้ยง

รายงานฉบับนี้เป็นการนำเสนอผู้ป่วย 2 รายที่อาศัยอยู่บ้านเดียวกัน โดยมีแมวเป็นสัตว์เลี้ยง ซึ่งการตรวจด้วยกล้องฟลูออเรสเซนต์ (Wood's lamp) พบการติดเชื้อบริเวณของสัตว์เลี้ยง และ พบร *Microsporum canis* จากการเพาะเชื้อในผู้ป่วยทั้ง 2 ราย รวมไปถึงแมวที่เลี้ยง

คำสำคัญ: โรคกลาก, การติดเชื้อรา, เชื้อราจากสัตว์เลี้ยง, *Tinea corporis*, Wood's lamp

Introduction

Tinea corporis is a common dermatophyte infection affecting trunks and extremities seen in 22.7% to 53.4% of all dermatophytoses depending on different studies. It is characterized by annular well-circumscribed scaly erythematous papules and plaques. If left untreated, *tinea corporis* could introduce secondary bacterial infection such as erysipelas or cellulitis.¹⁻⁴ According from previous prevalence, it is believed to affect 20-25% of the population worldwide.¹⁻³ The common causative organisms are *Trichophyton rubrum* followed by *T. mentagrophytes*.^{1,3} However, zoophilic pathogens, especially *Microsporum canis*, can be the causative agents for *tinea corporis* and tends

to present with sudden and more extensive inflammatory skin manifestations compared to the anthropophilic and geophilic organisms.

M. canis, among over 30 species of zoophilic fungal organisms, is adapted to live on animal hosts, such as dogs and cats, and is a leading cause of dermatophytoses in cats. These reservoir hosts may show no symptoms and cannot be detected by their owners, hence the increasing rate of infections especially in patients who share close relation to their pets. It is stated that infection usually spread by direct contact or from the infected hair and scale.⁵⁻⁷

Case Report

A 25-year-old Thai female patient came to the Department of Dermatology, Faculty of

Medicine, Siriraj Hospital, Mahidol University with multiple erythematous papules and plaques on her chest left thigh and right forearm. The lesions were intensely pruritus and developed within 1 week. She noticed her roommate also had similar skin lesions. Her previous treatment

was over the counter ketoconazole cream with no improvement. She denied any previous skin lesions or the history of travelling outside her home and workplace. She and her roommate had one feline which lived inside their apartment with close contact.



Figure 1 Fur from the affected cat. Note the bright apple green color under wood's lamp



Figure 2 Patient A with multiple discrete erythematous scaly plaques.



Figure 3 Patient B with erythematous scaly plaque on her arm. Note the inflammation on the lesion

On physical examination, multiple discrete scaly erythematous papules and plaques on head and right forearm were observed. Her roommate also had the similar lesions on her neck, forearm and thigh as well. The direct mycological examination with 10% potassium hydroxide test was performed and showed positive for branching septated hyphae from both the patient and her roommate lesions. Their feline had also been examined and found normal looking without skin manifestations. However, apple green color was revealed at the skin of patient, her roommate and her cat when exposed to the wood's lamp. Direct mycological examination test was positive for branching septated hyphae from the specimen collecting

from the hair of the cat enhanced under the fluorescence light. The culture collected from all the specimens from the patient, her roommate and the cat were positive for *M. canis*.

Both the patient and her roommate received fluconazole 400 milligrams once weekly and ketoconazole cream applied on the lesions twice daily for consecutive 3 weeks. We also advised our patient to take her cat to the veterinarian for proper treatment.

Discussion

This case report shows dermatophytoses infection from *M. canis* that effects on two healthy patients with close contact to an asymptomatic household cat. The clinical signs of dermatophytoses in animal include hair loss,

folliculitis, papules, grey scales and crusts. However, most of the felines do not show any apparent hair loss therefore the owners can easily miss to detect the abnormality of their pets. Animal dermatophytosis is diagnosed by various tests including direct examination and fungal culture from affected hair, skin biopsy on nodular lesion or wood's lamp examination. Inaccurate results such as false positivity could be found from contamination, or false negativity from the obscured haemorrhagic crust.⁷⁻⁸

M. canis is found viable in the environment up to 18 months and can directly infect animals and persons via fomites or direct contact. Study conducted in Italy reported high infection rate was up to 100% in stray cats and 13% household cats.^{7-8,12-13} The susceptible cats for the *M. canis* infection are long-haired and pedigree cats. Most *M. canis*-infected cats are asymptomatic but can eventually showed signs and symptoms when left untreated. When infected cases were identified, dermatologists should advice the patient to have their pets evaluated by the veterinarian. Also due to its long survival of *M. canis*, a thorough cleaning of the surrounding and environment is highly advised.

Another interesting point of this report is using the wood's lamp to detect the infected area of the feline that lead to appropriate specimen collection and help in diagnosis.

Wood's lamp is an easy and inexpensive tool that is valuable in many dermatologic disease such as erythrasma, vitiligo and many fungal infections. *M. canis* is one of the fungal species that shows apple green colour under fluorescent light due to presence of pteridine.⁷⁻¹¹

Because *M. canis* dermatophytoses can result in severe inflammation, the standard treatment includes systemic antifungal for the duration of 2-4 weeks, combined with topical antifungal.¹⁴ Despite the high cure rate, reinfection can occur. Importantly, the patients should reduce the reinfection by having their pets checked by the veterinarian and having their house cleaned out.

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