

# HAND CREEPING ERUPTION DUE TO DOG POOP PICKUP WITH PAPER TOWEL.

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## ABSTRACT

Creeping eruption is a skin infection mostly caused by hookworms of dogs and cats which are common companion animals. It usually occurs appears on feet or legs from direct contact to contaminated soil or sand with classic presentation of migratory serpiginous track. The present case reported an uncommon location and transmission of hand creeping eruption that caused by picking up dog poop with paper towel. The patient is a 21-year-old Myanmar woman, a housemaid, presented with a three week of an itchy eruption and erythematous serpiginous raised tracks on her right palm. She was treated with an oral antihistamine and topical application for one week, but no improvement and the migratory tract go further. She reported her routine work was taking the dog outdoors and walking along the cement ground around the city village. She used a paper towel to pick up after her dog's poop and entrapping it in her hand for disposal. She denied to have gardening, farming, and clearing the grass. The patient was treated with oral albendazole 400 mg once daily for one week and symptoms including pruritus diminished within 2 days. The lesion showed healing signs over initial lesion with desquamation and hyperpigmentation 2 week after treatment. No further relapses occurred during the 2-months follow-up visit. This is the first report of hand creeping eruption from using paper towel to pick up dog poop without wearing disposable gloves.

**Keywords:** Creeping eruption, palm, paper towel, albendazole

## INTRODUCTION

Paper towels are modern convenience that most of us wouldn't do without because of the great at picking up spills and absorbing large amounts of liquid. Disposable paper towels come in handy for so many uses in the kitchen and throughout the house. It is one of the necessary tools for pick the poo up but be sure of wearing glove before collecting it.

Dogs have positive impacts on nearly all life stages. It is difficult to enumerate accurately the populations of pets kept in households. In Thailand, it have been estimated that 74% had companion animals and 60% had dogs in homes [1]. Dog waste is full of disease causing bacteria and parasites than other types of waste causing a health risk to both people and other pets, and it adversely affects water quality and environment. According to the U.S. Centers for Disease Control and Prevention (CDC), pet droppings can contribute to diseases animals pass to humans, called zoonoses. Although germs from dogs rarely spread to people, they might cause a variety of illnesses, ranging from minor skin infections to serious disease. Zoonotic hookworms are animal hookworms that can be transmitted to humans causing skin infection called creeping eruption.

Creeping eruption or cutaneous larva migrans is a self-limited skin eruption that usually caused by direct contact of contaminated sand or soil with dog and cat hookworms. It causes severe itching, blisters, and a red growing, winding, snake-like rash. The rash can grow up to

1 to 2 centimeters per day. The infection usually appears on areas of the body that have been exposed to the contaminated ground. These include the feet, legs, buttocks, or back. Each person may have slightly different symptoms and may look like other skin conditions. Although it is self-limiting and will disappear over weeks to months even if not treated but anthelmintic treatment can shorten the course of disease [2, 3]. The diagnosis is usually based on medical history and physical exam, such as occupational history or endemic areas travel; and skin biopsy is commonly not necessary. From a parasitological point of view, differential diagnoses include diseases in which creeping eruption may be due to the other nematode larvae such as *Gnathostoma* spp., fly maggots, and scabies. Oral ivermectin and albendazole have become the first line treatments [4].

Hookworms are the most important parasites affecting dogs and cats worldwide and causing risk for human and companion animal health. The adult worms live in animal intestines and their eggs are spread on the soil during defecation. After the eggs hatch, the larvae become active within a few days and can penetrate the host skin. The infection can be spread to people from bare skin contact with the larvae in the feces. Humans are not the normal host, the worm cannot complete its life cycle in a person and the larva will die within the skin after several weeks. The rash usually shows up 1 to 5 days but sometimes more than 1 month after exposure to the worms and creeping eruption occurs [5-7]. For this reason some care should be taken and awareness in handling or picking up a dogs' feces.

## OBJECTIVE

This report aims to present a first case of hand creeping eruption with an infrequent transmission and infected site. To describe the important features of hookworms affecting companion animals and caregivers, the majority of migrant workers in Thailand. Therefore, this article aims to raise awareness of pet's owner and veterinarian in controlling parasites of veterinary and human impact.

## CASE REPORT

The patient was 21-year-old Myanmar female, she was presented with an itchy eruption and erythematous serpiginous raised tracks on her right palm (Figure 1). She was a housemaid and had been worked in Bangkok, Thailand for three months. She had daily activity of taking the dog out for exercise in the morning from her owner's house and return back. While walking in the city village along the cement ground, she usually used a paper towel to pick up her dog's poo and entrapping it in her hand for disposal. She denied to have gardening, farming, and clearing the grass. For the first time at three weeks ago, she describes her hand felt itchy with a small red tract at the lateral palm. She went to see the doctor and was treated with some oral antihistamine and topical applications, but no improvement and the migratory tract go further to the middle palm.

Physical examination revealed a healthy-appearing woman, showed the linear tract of an elevated, well-defined, erythematous serpiginous lesion localized on her right palm (Figure 1). The tract is from the lateral to middle palm. The old tract left by the larva's migration was paler than the recent portion and an inflamed papular eruption at the leading end of the tract was seen. A clinical diagnosis of creeping eruption was made from the history and clinical manifestations.

Treatment was oral albendazole 400 mg once daily for one week. The pruritus and the progression of the tract diminished within 2 days after treatment. The lesion showed healing

signs over initial lesion with desquamation and hyperpigmentation 2 week after treatment (Figure 2).

**Figure 1**

**Creeping eruption. Demonstrating characteristic serpiginous erythematous tracks on the right palm with vesiculation and crusting were seen.**



**Figure 2.**

**Creeping eruption. After 2 weeks - follow-up, linear and serpiginous skin lesions which were treated with albendazole 400 mg/day for 7 days**



## **DISCUSSION**

Creeping eruption have been reported most often on feet, legs, buttocks, or back from contact contaminated soil. Infection of the palm is uncommon body location and have been found such as in gardener with direct contact [8, 9]. The present case was the first report of the palm that different transmission route through paper towel. Paper towels are made of ground-up plant material. They consist of tiny plant fibers called cellulose. The cellulose fibers are made of long chains of linked sugar molecules. Water is attracted to cellulose and likes to be soaked up and stick to the cellulose in paper. That's why paper towels are great at picking up spills. That means the larvae in entrapping feces can pass through the thickness of paper towels to skin via these empty space.

The patient was housemaid from Myanmar, the majority of migrant worker in Thailand [10], did not know how to pick up dog poo or clean up dog waste. The infection occurred due

to not wearing gloves and causing like direct contact with dog poop. Therefore, always use plastic bag or wear gloves when handling dog's waste, any soil especially that which may have come in contact with dog feces. Pet's owners and veterinarians should aware to against zoonotic parasitoses of pets and constantly provide advice and continuous education to improve knowledge of their clients with a special focus on those human categories, who are at higher risk of infection. The infection was due to zoonosis from pet hookworm that remain the most important parasites affecting companion animals worldwide and maintain the primacy in terms of dispersion and risk for animal and human health.

Creeping eruption is self-limited, but treatment often is necessary due to intense pruritus. Because of the larvae cannot develop further in human but only migrates in uncertain direction within epidermis and heals spontaneously within a few weeks to months [3]. Treatment options include a single oral dose of albendazole or ivermectin, topical thiabendazole, and prolonged courses of oral albendazole in cases complicated by Löffler syndrome including Thai herbal plants. [3,11,12,13]. Prescribing anthelmintic therapies, such as albendazole, thiabendazole, or ivermectin, can shorten the duration of the symptoms of the disease Other choices of treatment are cryotherapy, thiabendazole cream, and ivermectin cream for patients We adopted an albendazole approach to treat at a dose of 400 mg once daily for 7 days. This case had a satisfactory result, skin lesions resolved without relapse at follow-up examinations.

## CONCLUSION AND FUTURE WORK

This case was first report of hand creeping eruption from dog's hook worm with the transmission of the larva pass through the paper towels. The patient was foreign worker from Myanmar and infected because of less knowledge about animal care giving and how to pick up dog poo or clean up dog waste. Veterinarians and pet's owners should aware of health effects from pets including parasites control program and frequent deworming.

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