42

A 41-Year-Old Male Traveller Returning from Australia With Itchy Eruptions on His Thighs

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Clinical Presentation

History

A 41-year-old male yoga teacher presents to a travel clinic in Europe because of itchy skin eruptions on both upper thighs for the past week.

He has just returned from a 10-day trip to northern Australia where he attended a yoga seminar. On his way to Australia he had stopped over on a Thai island for a 3-day beach holiday. Just after his arrival in Australia he developed three intensely itchy skin eruptions on both upper thighs. The itch is so intense that at times it keeps him awake at night.

There has been no fever, no cough or wheeze and he is otherwise completely well.

Clinical Findings

On both upper thighs there are a total of three reddish, serpiginous tracks, about 2 mm in width (Fig. 42.1). The inguinal lymph nodes are not enlarged. The chest is clear. The rest of the examination is unremarkable.

• **Fig. 42.1** Three track-like skin eruptions on both upper thighs causing intense itching.

Questions

1. What is the clinical syndrome and what is the differential diagnosis?
2. What management would you recommend?

Discussion

A 41-year-old European man presents to a travel clinic with itchy serpiginous skin lesions. He has recently returned from a trip to Asia and Australia.

Answer to Question 1

What is the Clinical Syndrome and What is the Differential Diagnosis?

The clinical syndrome is a creeping eruption. A creeping eruption is defined as a linear or serpiginous, slightly elevated, erythematous track that moves forward in an irregular pattern. The most common cause of creeping eruptions seen in returned travellers is cutaneous larva migrans (CLM) caused by larvae of animal hookworms.

Creeping eruptions can also result from infection with larvae of *Strongyloides stercoralis* (larva currens, i.e. running larva), but this can easily be distinguished from CLM. *S. stercoralis* larvae move several centimetres an hour, that is considerably faster than larvae in cutaneous larva migrans. The eruptions in larva currens persist only for a few hours, whereby in CLM the track may stay for weeks.

Creeping eruptions can also be caused by adult nematodes such as *Gnathostoma* species and trematodes (*Fasciola* species). The larvae of parasitic flies have also been shown to cause creeping eruptions (migratory myiasis).

However, cutaneous larva migrans caused by zoonotic hookworms is by far the commonest cause of creeping eruption seen in travel clinics worldwide. The patient was probably infected while lying on the beach or performing yoga exercises in the sand.

Answer to Question 2

What Management Would You Recommend?

The diagnosis of cutaneous larva migrans can be established clinically, supported by the patient's travel history. There are no other investigations required. Antiparasitic treatment can be administered topically or systemically (see Summary Box).

The Case Continued…

The patient was prescribed a single-dose treatment of ivermectin (200 μg/kg). The itchy eruptions settled within a few days of taking the drug.

SUMMARY BOX

Hookworm-Related Cutaneous Larva Migrans

CLM is a creeping eruption resulting from accidental infestation of the human skin by larvae of dog and cat hookworms (*Ancylostoma caninum, A. braziliense* and *Uncinaria stenocephala*). It is one of the most common dermatoses in returning travellers from tropical destinations. Apart from its relevance in travel medicine, it is endemic in resource-poor communities in the developing world, particularly in Central and South America, the Caribbean and South and South-east Asia.

CLM occurs in most warm and humid climates and where stray dogs and cats are common, or pets are not treated regularly with anthelmintics. The animals pass hookworm ova with their stools, and the larval stages develop in sand or soil. CLM is usually acquired when walking barefoot, or sitting or lying on faecally contaminated ground.

Animal hookworm larvae enter the epidermis but are unable to cross the basement membrane and enter the human body. Confined to the skin, they are unable to complete their lifecycle as they would do in their animal host.

There usually is a pruritic papule at the site of larval entry. A raised erythematous track starts progressing in an irregular fashion. The onset of symptoms and the speed by which the creeping eruption progresses vary between different hookworm species, but usually itching starts shortly after larval entry, and the elevated track appears 1 to 5 days later.

The skin eruptions are most commonly found on the feet but may occur in any part of the body that came into contact with infested sand or soil. The itching is intense and may prevent affected people from sleeping. Very rarely, animal hookworms may invade the human body leading to pulmonary eosinophilia.

Diagnosis is made clinically, supported by exposure history. Skin biopsy is not helpful because the larva is invariably in advance of its track. There are no reliable serological tests available, and blood eosinophilia is present in a minority of cases.

The treatment of choice is ivermectin (200μg/kg for 1-2 days.). Albendazole is a good alternative when ivermectin is contraindicated or not available. Albendazole 400 mg should be given twice daily (bd) for 3 days. Topical thiabendazole 10–15% tds for 5 to 10 days is also effective but requires more compliance and can be difficult in multiple lesions.

Without treatment the lesion can persist for several months, and scratching may lead to bacterial superinfection, particularly if hygiene is poor.

For prevention at the community level, cats and dogs should be dewormed and banned from beaches and playgrounds. In resource-limited settings this is usually not feasible. Individual protection can be achieved by wearing appropriate footwear when walking on sand or soil in the tropics and using a sunchair on the beach because towels may be covered with sand and therefore do not protect sufficiently.

Further Reading

1. Brooker S, Bundy DAP. Soil-transmitted helminths (geohelminths). In: Farrar J, editor. Manson's Tropcial Diseases. 23rd ed. London: Elsevier; 2013 [chapter 55].
2. Vega-Lopez F, Ritchie S. Dermatological problems. In: Farrar J, editor. Manson's Tropical Diseases. 23rd ed. London: Elsevier; 2013 [chapter 68].
3. Heukelbach J, Feldmeier H. Epidemiological and clinical characteristics of hookworm-related cutaneous larva migrans. Lancet Infect Dis 2008;8(5):302–9.