CASE REPORT

Widespread skin rash following travel to South-East Asia

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SUMMARY

A 21-year-old man presented with a widespread, intensely pruritic skin rash, which developed acutely 5 days after returning from a backpacking holiday in Thailand. On initial presentation to his general practitioner, an erythematous, papular rash was noted in the upper right back, with smaller clusters of lesions on the buttocks and right arm. Based on the anatomical distribution of the lesions, a preliminary diagnosis of shingles was made. Over the following 2 weeks, the lesions failed to improve, and new snake-like lesions appeared. A dermatologist made the diagnosis of cutaneous larva migrans. The skin lesions rapidly resolved following oral albendazole therapy.

BACKGROUND

There is a wide differential diagnosis of erythematous skin eruptions, which is even larger when there has been recent travel to tropical regions. The increased incidence of travel to exotic destinations means general practitioners (GPs) and hospital doctors are more likely to come into contact with tropical skin conditions. The classic lesion in cutaneous larva migrans (CLM) is a well-demarcated, serpiginous (snake-like) lesion, which is typically limited to the feet. However, as this case demonstrates, the condition may present initially with an immune-mediated florid eruption, which can involve extensive regions of the skin. The pseudo-dermatomal distribution in this case led to an initial misdiagnosis as shingles.

CLM should therefore be considered in the differential diagnoses of widespread pruritic skin rashes occurring in the otherwise well returning traveller, particularly as the characteristic serpiginous lesions may only develop later.

CASE PRESENTATION

A 21-year-old man consulted his GP after developing an intensely pruritic skin rash. He had returned from a backpacking holiday to Thailand 5 days previously, where he had visited the jungles and beaches. The rash had developed acutely the previous morning. He was otherwise well, with no recent illnesses. The only recent medication was doxycycline, which had been taken for malaria prophylaxis. There was no significant medical history, no known allergies and no family history of skin conditions.

On examination, an erythematous, papular rash was seen in the right upper back, with smaller clusters on the right arm, lower back and buttocks (figure 1). The densest concentration of lesions was

Figure 1 Distribution of skin lesions at presentation.

in the T2, T3 and T4 dermatomes, and they appeared localised to the right of the midline. However, there were smaller groups of lesions on the lower back and buttocks on either side of the midline. Based on the appearance and distribution of the lesions, a presumptive diagnosis of shingles was made, and swabs for herpes simplex and varicella zoster virus PCR were taken. No treatment was started.

Over the next 2 weeks there was no improvement in the lesions. The patient reported seeing new, 'snake-like' lesions developing (figure 2), which appeared to change position over time. The rash remained pruritic, but no further symptoms developed.

INVESTIGATIONS

No blood tests were performed. A skin swab sent for herpes simplex and varicella zoster PCR was negative.

Figure 2 Closed-up view of serpiginous lesions.

CrossMark

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DIFFERENTIAL DIAGNOSIS

The acute onset of an erythematous rash in a localised distribution led to the initial diagnosis of shingles. However, several features of the presentation, including the patient reporting of intense itch but no pain, skin involvement across multiple dermatomes bilaterally and the subsequent appearance of serpiginous lesions did not fit with this diagnosis.

An important diagnosis to consider in patients developing skin rashes on travel to tropical destinations are photosensitivity disorders. These include polymorphic light eruption or hydroa vacciniforme. Both conditions develop in a susceptible individual following exposure to bright sunlight, and can cause a pruritic skin eruption. However, the features of this case, particularly the delayed presentation (5 days after return from holiday) and the duration of the rash (over 2 weeks) are not typical of a photosensitivity disorder.

OUTCOME AND FOLLOW-UP

A dermatological opinion was sought and a diagnosis of CLM was made based on clinical appearance. A 4-day course of oral albendazole was given, with rapid and complete resolution of all symptoms.

On further discussion, the patient recalled a period of sunbathing directly on the sand of a beach frequented by a population of wild monkeys. This exposure would account for the extensive infection in an uncharacteristic distribution.

DISCUSSION

CLM is an acquired tropical dermatosis caused by the percutaneous penetration of the larvae of hookworm species, most commonly *Ancylostoma braziliense*.¹

Eggs are passed in the faeces of the definitive hosts (dogs or other mammals) and hatch to the larval stage in moist soil or sand. These larvae can penetrate human skin percutaneously to enter the epidermal tissues. This mechanism of infection means the majority of cases are confined to the feet^{2 3}—acquired by walking over contaminated soil. The presence of parasitic organisms in the epidermal tissues can cause an intense host allergic response, leading to the widespread, non-specific erythematous skin eruption as seen in this case. As the diagnosis is clinical, biopsy is not usually performed, but if conducted reveals an epidermal and upper dermal inflammatory infiltrate with a high proportion of eosinophils, intraepidermal vesicles and a tract in the suprabasilar region from the burrowing of the larva. On peripheral blood testing there is typically an elevated IgE and eosinophilia. The immune-mediated eruption may be the initial presenting feature, rather than the characteristic serpiginous rash. Larvae may begin migration immediately, but can remain dormant for up to several months⁴—this can cause delays in presentation and may complicate diagnosis.

Humans are not the definitive hosts of the hookworm species associated with CLM.¹ In the definitive (animal) host, the larvae are able to penetrate through the dermis and enter the blood and lymphatic systems, leading to systemic infection. In humans, the hookworm larvae are unable to penetrate the dermis, so remain confined to migrating through the epidermal tissues. This migration causes the characteristic snake-like lesions, which can be seen to advance slowly. The systemic complications

associated with visceral nematode infestations are therefore absent in CLM.

As the hookworm larvae are unable to complete their lifecycle in the human host, CLM is a self-limiting condition. However, treatment with oral antihelmintics, such as albendazole or thiabendazole provides a rapid response and resolution of the pruritus and skin lesions. Although advocated in the past, topical treatments are no longer recommended.

Although primarily a disease of the tropics, the increasing incidence of global travel means patients with CLM are presenting more frequently to primary and secondary care in the UK. It is therefore important that GPs and doctors working in emergency departments are aware of the condition. The characteristic migratory serpiginous lesions in the typical distribution on the feet, developing while travelling in a tropical region are suggestive enough such that the diagnosis can be made even by clinicians who have not encountered the condition before. However, as this case demonstrates, there are several features of the condition that may complicate the diagnosis or cause confusion with other dermatosis. First, the delay between initial infestation and development of the rash can be up to several months,⁴ meaning that foreign travel may not be mentioned unless specifically asked about. Second, the initial skin manifestation may not be the characteristic snake-like tracts, but rather an immune-mediated non-specific florid erythematous eruption. The characteristic lesions may not develop for days or weeks. Finally, although the majority of cases are limited to the feet,² the condition can affect far more extensive regions of the limbs and torso. CLM should therefore be considered in the differential diagnosis of all skin eruptions in the systemically well returning traveller.

Learning points

- ▶ The skin manifestations of cutaneous larva migrans are typically limited to the feet, and produce a characteristic snake-like lesion which can be seen to migrate over time. Patients are systemically well.
- ▶ The presentation can vary—initial presentation may be with non-specific erythematous eruptions, extensive involvement and delayed presentation up to several weeks after travel.
- ▶ Treatment is with oral antihelmintics such as albendazole.

Competing interests None.

Patient consent Obtained.

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