CASE REPORT

A trekker in Nepal with painful skin blisters

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SUMMARY

The authors present a case of a 27-year-old woman trekker with painful, slightly itchy eruptions on the dorsum of both hands for 5 days. On examination, she had a papulovesicular rash with some haemorrhagic vesicles over the dorsum of her hands and thumbs.

BACKGROUND

Dermatitis of any origin can be a debilitating condition at high altitude. People susceptible to cold can develop a rash that can be easily confused with other prevalent conditions. High ultraviolet (UV) radiation exposure is a known cause of dermatitis. Similarly, contact dermatitis can occur due to use of lotions, sun creams, plant extracts and drugs commonly taken by trekkers. The literature contains limited information on dermatitis in trekkers at high altitude; this condition can produce a diagnostic dilemma.

CASE PRESENTATION

A 27-year-old Israeli woman trekker on the Everest (ER) base camp trail presented with painful and slightly itchy blistering rash on the dorsum of her hands. It started as small papules when she was at an altitude of 5100 m and progressed over 5 days to form blisters with clear fluid and haemorrhage in some areas. She reported swelling, pain and a slight itch over the affected area, which was relieved by immersing her hands in cold water and aggravated by warmth. She used antiseptic cream without benefit. She had not used any sunscreen or cosmetic lotions containing plant extracts on the hands prior to eruption. There was no history of extreme cold exposure. She had been using trekking poles with hand straps and wearing her gloves on and off. She noticed the rash after the use of the gloves. She had not taken any medicines during her trip. She also had healing ulcers on her lips, which preceded the lesions on her hands. She had a history of lip ulcers when exposed to intense sun. She had used trekking poles frequently in the past but had not experienced similar lesions. On physical examination, there was gross swelling of bilateral hands with discrete to coalescing papules and vesicles over the dorsum of extending to the fingers and thumbs (figures 1–3). Most of the vesicles were filled with cleared fluid and some with haemorrhagic fluid. The lesions were slightly tender. There was no dermographism. There were multiple healing ulcers on her lips redundant but buccal mucosa was normal.

DIFFERENTIAL DIAGNOSIS

The lack of cold exposure and the proximal rather than distal location of the lesions made cold injury (frostbite, chilblains) less likely. The case was managed with the provisional diagnosis of allergic contact dermatitis (ACD) related to trekking pole straps. These eruptions can be seen in photodermatitis, irritant contact dermatitis (ICD), cold injury, polymorphic light eruption, drug allergy and insect bites.

TREATMENT

The patient was treated with oral steroids and antihistamines along with a combination of topical steroids and antibacterial ointment.

OUTCOME AND FOLLOW-UP

The vesicles cleared in 2 weeks.

DISCUSSION

High altitude is an extreme environment with cold temperatures, high UV radiation, low humidity and windy conditions, which may predispose trekkers to skin problems. There is limited literature on skin problems in high altitude regions. A recent study showed that 3.5% of the cases presenting to ER were of dermatological origin.¹ In another study conducted in Ladakh, India, about 61–65% of patients presenting to the dermatology clinic were lowlanders and tourists, and that cold-related injuries were far more common in these individuals.² Similar looking skin lesions can present in various conditions and can cause a diagnostic dilemma. Contact dermatitis may be mistaken for chilblains or frostbite, the most common skin conditions at high altitude.³ Contact dermatitis can occur due to sensitisation to materials used to make gloves, sunscreens and cosmetic products, and from plant extracts. Chemicals used in cosmetic products can be the cause of allergies and ICD.⁴ Although rare in the general population, sun cream allergy is common in susceptible individuals and can cause allergic as well as phototoxic contact dermatitis.⁵

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Figure 1 Vesicular rash with some haemorrhagic vesicles on the dorsum of both hands.

Figure 2 Rash on the dorsum of the right hand.

Drugs such as amiodarone, retinoids, non-steroidal anti-inflammatory agents, diuretics (including acetazolamide, a drug commonly used by trekkers at high altitude), antibiotics and substances such as fragrances, sunscreens and topical antimicrobials are commonly known to cause phototoxic contact dermatitis.⁶ Textile fibres, including nylon, silk or wool used to make gloves can cause contact dermatitis.⁷ Use of trekking poles in susceptible individuals can lead to exposure of the dorsum of the hands (as seen in figure 1) to UV radiation and hence to photodermatitis. Contact with the material used in hand loops of trekking poles could be another cause of dermatitis.

Contact dermatitis can be classified into two types: ICD and ACD. ICD is usually the result of a single overwhelming exposure to an irritant leading to disruption of the skin barrier in which immunological memory is not involved. Stinging and burning are the predominant symptoms. The clinical picture ranges from a mild irritant reaction with transient erythema or chapping to a more florid dermatitis with oedema, pain vesiculation, exudation, bulla formation and even tissue necrosis. ACD is a result of a two-step process; initial sensitisation of the T-lymphocytes by the antigen and, later, elicitation of the

Figure 3 Rash on the dorsum of the left hand and haemorrhagic blisters on the dorsum of the left thumb.

immunological memory giving way to the clinical features of contact dermatitis. Pruritus is the chief symptom. Lesions range from erythema, swelling, papules and papulovesicles to larger vesicles and blisters, and if they rupture, weeping dermatitis. It is next to impossible to distinguish ICD from ACD on clinical and histopathological grounds.^{8 9}

The history of previous use of trekking poles and distribution of the lesions on this patient suggests the trekking pole straps as a likely contributing factor. Although good history taking can guide to diagnosis, overlap in morphological features of skin lesions and diverse causes of skin conditions at high altitude can lead to a diagnostic dilemma.

Learning points

- ▶ Commonly used clothing and cosmetic product can cause dermatitis or predispose to photosensitivity.
- ▶ Cold injuries are common, but may be confused with other skin lesions at high altitude.
- ▶ History taking and careful assessment of lesion distribution can guide proper diagnosis.

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Patient consent Obtained.

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