CASE REPORT

Summertime and the patient is itchy

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SUMMARY

A 21-year-old man presented to the emergency department with a 36 h history of a painful, itchy maculopapular rash and associated vesicles to his arms and neck. He had no history of exposure to new chemicals or hygiene products and no significant medical history. His physiological observations were normal and systemic examination was unremarkable. On close inspection the rash was noted to be present only on areas of skin exposed while wearing a polo shirt. On further questioning it transpired that he had been gardening 12 h prior to the development of the rash. A diagnosis of phytophotodermatitis was made. The patient was discharged with chlorphenamine, simple analgesia and the advice to wear a long-sleeved t-shirt and sunscreen when gardening in future. Phytophotodermatitis is a cutaneous reaction caused by contact with light-sensitising compounds found in plants and exposure to ultraviolet A radiation. It is self-limiting and can be managed symptomatically.

BACKGROUND

Phytophotodermatitis is a relatively uncommon presentation to the emergency department and emergency physicians are unlikely to be familiar with the diagnosis. The distribution and history are usually diagnostic but patients often do not associate the causative agent/event with the rash; a careful history and a high index of suspicion are vital.

CASE PRESENTATION

A 21-year-old man presented to the emergency department with a rash on his arms and neck (figure 1). It had developed over the course of 36 h from discrete 'pin prick' areas of erythema into a maculopapular rash with vesicles (figure 2). It covered his forearms from the dorsal aspect of the hands to the flexor surface of the elbows. It was also beginning to develop around his neck (figure 3). He described the rash as itchy and painful, and was feeling 'under the weather'.

The patient had no previous dermatological or other medical history of note. He took no medication. He worked in a supermarket handling food items but there was no history of occupational chemical exposure. He had not recently had any change in washing powder or personal hygiene products.

Physiological observations were entirely normal and systemic examination unremarkable. Closer examination of the rash revealed that it was present only on skin exposed to the sun when wearing a short-sleeved shirt; the most striking feature was the 'V' shape on the patient's chest in keeping with the neck line of a polo shirt. On further questioning the patient described a period of time 48 h prior to presentation (and 12 h prior to the development of the rash) spent strimming the grass under the hedges in his garden.

Figure 1 Maculopapular rash with vesicles on the forearms.

INVESTIGATIONS

Blood tests including full blood count, urea and electrolytes, liver function test and C-reactive protein were all within normal reference ranges.

Figure 2 A closer view of the vesicular rash.

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Figure 3 A well-delineated 'V'-shaped rash to the front of the patient's neck.

DIFFERENTIAL DIAGNOSIS

The list of potential differential diagnoses for a maculopapular rash is long, but given the distribution of the rash and the history of plant material exposure a diagnosis of phytophotodermatitis was made.

TREATMENT

The patient was discharged with chlorphenamine, simple analgesia and the advice to wear a long-sleeved t-shirt and sunscreen when gardening in the future.

OUTCOME AND FOLLOW-UP

The rash resolved over a period of 3 weeks. It remained pruritic throughout healing but the associated pain settled over a few days. Residual scarring is beginning to fade 2 months after presentation.

DISCUSSION

First described in the 1940s, phytophotodermatitis is a cutaneous reaction caused by contact with light-sensitising compounds found in various plants and subsequent exposure to ultraviolet A (UVA) radiation.¹ The condition is most common during spring and summer months and is caused by sequential exposure to naturally occurring furocoumarin compounds (psoralens) in plants and UVA. When psoralens are photoactivated they bind covalently to pyrimidine bases in DNA causing epidermal cell damage.²

Phytophotodermatitis may be caused by a wide range of wild plants such as parsley, dill, fennel, celery and parsnip (all Umbelliferae family) and mulberry and fig (Moraceae family). Citrus fruits (Rutaceae) also belong to the group of psoralen-producing plants.³ Sap or juices from such plant species act as topical photosensitisers, producing an exaggerated sunburn after impregnation of skin surfaces and subsequent exposure of these sites to the sun.^{3 4}

The dermatitis normally begins within 24 h of psoralen/UVA exposure but may be delayed up to 36–72 h.³ Presentation can range from mild erythema to severe blistering, with erythema commonly persisting for weeks to months after initial eruption.⁵ Patients usually report that the rash is painless and pruritus is uncommon; as such the initial acute reaction may be missed.⁶ In cases of citrus juice drippage, commonly encountered in fruit pickers, a bizarre linear pattern is common. When vesicles/bullae are present, as in the case presented, herpes simplex virus infection may be misdiagnosed.⁷ Rarely in severe cases blistering

may be accompanied with systemic symptoms related to toxicity including vomiting, nausea and fever.³

Patients rarely associate the aetiological agent with the dermatitis without prompting and hence a comprehensive history and high index of suspicion are required to diagnose phytophotodermatitis. Clinicians should scrutinise for the use of medications that are known to be systemic photosensitisers such as sulfonyleureas, amiodarone and antibiotics (especially doxycycline).³ Typically, however, these agents cause increased susceptibility to sunburn within minutes to hours after UVA exposure rather than the irregularly shaped dermatitis that evolves hours after sun exposure in phytophotodermatitis.

Treatment for acute phytophotodermatitis is symptomatic and rarely required. Painful eruptions may respond to cold compresses and topical corticosteroids. Once made aware of the potential for exposure, patients can take measures to avoid skin contact with photosensitising agents and to protect the skin from direct UVA radiation.³ Should further skin contact with photosensitising agents occur, rinsing the affected area is usually sufficient to prevent dermatitis as the plant extract takes 30–120 min to be absorbed.⁷ The most common complication of phytophotodermatitis is hyperpigmentation due to increased melanin deposition in dermal macrophages and keratinocytes. Patients should be reassured that this is self-limiting and is best left untreated; it may take several months to settle.⁸

Learning points

- ▶ Phytophotodermatitis is an erythematous eruption with or without blisters.
- ▶ It usually occurs within 24 h of exposure to photosensitising plant material along with ultraviolet A radiation.
- ▶ Treatment is symptomatic and the condition is self-limiting.
- ▶ The commonest complication is hyperpigmentation; this usually resolves over a period of months.
- ▶ A careful history and a high index of suspicion are required to make the diagnosis, as the morphology of the eruption varies and patients are unlikely to associate the causative agent/event with their symptoms.

Contributors AT and SH saw and treated the patient on presentation to the emergency department. AT and CM wrote the first draft of the manuscript. SH reviewed and edited the manuscript.

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