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Dermatology Reports

Dermatology Reports 2026; 18:10591
doi:10.4081/dr.2025.10591

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Delayed papular dermatitis after a jellyfish sting

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Key words: jellyfish sting; delayed hypersensitivity; papular dermatitis; nematocyst; marine envenomation.

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Dear Editor,

Jellyfish stings are among the most common marine envenomations worldwide, particularly in coastal tourist regions.[1] They typically cause immediate pain, erythema, and linear urticarial wheals.[2] Although acute effects are well characterized, delayed cutaneous reactions remain under-recognized. These may occur days to weeks later and often mimic insect bites, eczema, or lichen planus.[3] We report a case of delayed papular dermatitis 10 days after a jellyfish sting and briefly review the literature.

A 22-year-old otherwise healthy patient presented with a 10-day history of pruritic papular lesions on the left forearm. Ten days earlier, the patient had sustained a jellyfish sting while swimming at the seaside. The immediate reaction included localized erythema, burning, and mild swelling, which resolved within hours. The sting site was rinsed alternately with cold and hot water during the first hour after exposure, with only transient relief. Five days later, new itchy papules appeared and gradually progressed.

Examination revealed multiple erythematous papules with central scaling and occasional crusts, clustered on the extensor surface of the forearm (Figure 1). Several lesions were perifollicular, with xerosis and excoriations. No vesicles, pustules, or secondary infections were observed. A clinical diagnosis of delayed papular dermatitis due to jellyfish envenomation was made. Treatment with a medium-potency topical corticosteroid, topical antibiotic, and emollient cream led to rapid improvement, with complete resolution within 2 weeks and no recurrence.

The pathogenesis of jellyfish dermatitis involves nematocysts, which inject venom containing porins, neurotoxins, and inflammatory mediators.[4] In the acute phase, these toxins disrupt cell membranes and trigger mast-cell degranulation, producing pain and wheals.[1] Delayed reactions occur when retained nematocyst antigens stimulate a type IV hypersensitivity response mediated by T lymphocytes, explaining the latency of days to weeks and the emergence of papular, lichenoid, or eczematous eruptions.[3,5]

Reported delayed reactions include papular dermatitis, vesiculo-bullous lesions, hemorrhagic streaks, lichenoid eruptions, and granulomatous reactions.[3,6,7] These can be misdiagnosed as insect bites, allergic contact dermatitis, or lichen planus. A history of recent marine exposure is crucial.

The clinical severity depends on the jellyfish species and exposure. Scyphozoans and hydrozoans often cause localized reactions, while cubozoans such as *Chironex fleckeri* may produce systemic toxicity or even death.[8] Delayed cutaneous hypersensitivity is more often described after less-lethal species but is likely under-reported.[2] Diagnosis is usually clinical. Dermoscopy may reveal dotted vessels and Wickham-like striae, but findings are non-specific. In acute stings, nematocyst recovery by tape-stripping has been reported.[3] For acute stings, immediate removal from water and inactivation of nematocysts with seawater or hot-water immersion (40-45°C) are recommended. Freshwater rinsing should be avoided. Randomized controlled trials confirm the superiority of hot-water immersion over ice packs for pain relief.[9,10] For delayed dermatitis, topical corticosteroids and emollients are first-line. Topical calcineurin inhibitors have been successful in recurrent cases.[7] Measures include avoiding bathing during visible jellyfish blooms, wearing protective clothing, and following beach safety warnings.[2]



Figure 1. Erythematous papules with central scaling on the extensor surface of the left forearm, 10 days after a jellyfish sting.

Delayed jellyfish dermatitis is uncommon but clinically relevant. Dermatologists should elicit a history of marine exposure in patients with pruritic papular eruptions, recognize delayed immune responses beyond the acute sting, and provide timely anti-inflammatory therapy. Awareness of this entity can prevent misdiagnosis and unnecessary interventions.

References

1. Burnett JW, Calton GJ. Jellyfish envenomation syndromes updated. Ann Emerg Med 1987;16:1000-5.
2. Cegolon L, Heymann WC, Lange JH, Mastrangelo G. Jellyfish stings and their management: a review. Mar Drugs 2013;11:523-50.
3. Ng SC, Cheng TS. Swimmer's dermatoses. Hong Kong J Dermatol Venereol 2013;21:15-21.
4. Peng SE, Lee JS, Shih MH, et al. Jellyfish venom components and mechanisms of action. Toxins (Basel) 2024;16:85.
5. Tibballs J, Yanagihara AA, Turner HC, Winkel K. Immunological and toxinological responses to jellyfish stings. Inflamm Allergy Drug Targets 2011;10:438-46.
6. Ghosh SK, Bandyopadhyay D, Haldar S. Lichen planus-like eruption from a jellyfish sting. J Med Case Rep 2009;3:7421.
7. Aktürk AŞ, Kıran R, Sayman N, Günlemez A. Delayed and recurrent jellyfish dermatitis: a case report. Turk Arch Dermatol Venereol 2024;58:45-7.
8. Fenner PJ, Williamson JA. Worldwide deaths and severe envenomation from jellyfish stings. Med J Aust 1996;165:658-61.
9. Yoshimoto CM, Yanagihara AA. Cnidarian envenomations in Hawai'i improve with heat application. Trans R Soc Trop Med Hyg 2002;96:300-3.
10. Loten C, Stokes B, Worsley D, et al. Hot water immersion vs. ice packs for bluebottle stings: a randomized controlled trial. Med J Aust 2006;184:329-33.

Received: 29 August 2025; Accepted: 12 October 2025.

Conflict of interest: the author has no conflict of interest to declare.

Ethics approval and consent to participate: not applicable.

Consent for publication: written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Availability of data and materials: all data generated or analyzed during this study are included in this published article.

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