

Severe delayed cutaneous reaction due to Mediterranean jellyfish (*Rhopilema nomadica*) envenomation

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During summer, Mediterranean Sea waters are invaded by a species of jellyfish designated as *Rhopilema nomadica*. Their tentacles contain numerous nematocysts loaded with a toxin that causes envenomation, usually expressed as immediate appearance of redness, burning sensation and papulovesicular eruption in the affected skin. We report a lady with a severe delayed reaction due to jellyfish envenomation that developed 2 days after contact with jellyfish tentacles.

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The numerous beaches at the Mediterranean Sea are an inviting leisure resort for both citizens and tourists in Israel. However, it seems that every pleasure has its price, since during the summer months, there is a massive invasion of the shoals by Mediterranean jellyfish (*Rhopilema nomadica*) hordes. Occasionally, the jellyfish induce painful stings that might spoil the enjoyment. Usually, these incidents are minor and are expressed by a burning sensation, pain and redness at the affected skin area. Topical treatment with house vinegar helps to forget the unpleasant event. However, although rare, major systemic reactions to jellyfish poisoning might bring the patient to seek care by the family physician and even by the staff of the emergency medicine department. We report a patient with a severe delayed skin reaction due to jellyfish envenomation.

Case Report

A 43-year-old woman was sunbathing at the beach with her small daughter when a swimmer brought a huge jellyfish and threw his 'trophy' at the sand. The jellyfish tentacles splattered at the extremities, abdomen and chest skin of the seating-by mother and child. The mother, although affected, but being busy with the child, did not pay great attention to her own condition. In a few moments, the child experienced severe burning at the affected areas that became red and swollen. House vinegar applied on the skin did

not alleviate the pain; therefore the girl was admitted to another hospital and treated with antihistamines and rinsing the skin with physiological saline solution. Her condition rapidly improved and she was discharged.

2 days later, the mother started to experience severe burning sensation at the previously affected areas, accompanied with diffuse intensive pain and itching and therefore she was referred for admission. On physical examination, she was found in a good general condition, blood pressure was 142/86 mmHg, the pulse rate was 106 and regular and temperature was 36.8°C. The skin over the face, chest, abdomen and four extremities showed marked erythema with papulovesicular eruptions and urticaria-like eruptions (Figs. 1 and 2). The rest of the physical



Fig. 1. Skin of patient's leg depicting erythema and vesicles.



Fig. 2. Erythema and vesicular eruptions at the forearm of the patient.

examination was unremarkable. Blood counts and biochemistry examinations were within normal limits. The patient denied allergic events in the past, drug or food sensitivity and previous exposure to jellyfish sting. She was given antihistamines by intravenous infusion and topical hydrocortisone cream. After a few hours, her condition gradually improved and the patient was instructed to continue the treatment with peroral antihistamines at home. A re-examination carried out a few days later showed a marked improvement of the skin lesions with almost complete disappearance of the vesicles and attenuation of the erythema. However, the patient noted that exposure to sun aggravates the affected areas.

Discussion

Compared to other jellyfish species, envenomation by *R. nomadica* is mostly mild. In recent years, jellyfish stings are quite common in our country, most probably due to a rise in temperature of the Mediterranean seawater (1). Details about the biology of *R. nomadica*, as well as other jellyfish species, have been recently reported (2–4). The toxin stored as nematocysts in the jellyfish tentacles induces the burning and painful sensation (1). Usually, the symptoms are local, but occasionally the envenomation causes not only skin damage, but also conjunctivitis and eyelid oedema (1). Although rare, systemic and even fatal reactions may be caused either by anaphylaxis or by action of the venom on the heart, respiratory system and kidneys (5, 6). Lotan et al. (7) have purified a new polypeptide toxin from *R. nomadica* tentacles designated as phospholipid A2 toxin that may explain the noxious effect of the venom on the skin, as well as system involvement, especially the heart and lungs. Gusmani et al. (8) have reported on the presence

of a haemolytic fraction and α -chymotrypsin-like serine protease activity in the venom of *R. nomadica*.

The patient described is remarkable for both late development and severity of the jellyfish envenomation. Delayed cutaneous reaction to *R. nomadica* seems to be rare. Veraldi and Carrera (9) reported on a patient in whom a widespread papulonodular skin eruption appeared about 1 week after her return from vacation at the Red Sea, where she had been exposed to contact with an unidentified jellyfish. The patient had previous contacts with jellyfish during her trips to other seaside resorts. The immediate skin reaction in our patient was relatively mild, whereas the severe eruption appeared 2 days after envenomation.

Treatment of jellyfish poisoning is based on rinsing the affected area with sea, but not fresh water, or with vinegar which deactivates the nematocysts. Topical application of hydrocortisone and administration of antihistaminics are indicated in more severe cases.

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