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Case Report

Marine Irritants. Two Case Reports

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ABSTRACT

Climate change and eutrophication have contributed to an increased prevalence of marine stinging organisms and jellyfish in Italian coastal waters. Among these, Pelagia noctiluca is known to induce contact dermatitis. This report presents two clinically analogous cases observed in the Tyrrhenian and Adriatic Seas, and outlines the most effective strategies for symptom management and prevention of potential worsening.

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Introduction

With the arrival of the summer season, days at the beach provide many families with an opportunity for recreation, but these seemingly carefree moments can turn into unpleasant experiences, especially for young children, due to accidental contact with stinging marine organisms. It is the task of child health professionals to educate parents about these potential risks and how to behave. Over the last 20 years, the Mediterranean Sea has undergone profound environmental changes, including an increase in water temperature, a decrease in biodiversity and excessive eutrophication, which have led to the proliferation of marine species that are potentially dangerous to humans (1). In particular, water temperatures have reached in Italy 30 °C, a biologically significant value that has altered the balance of the marine ecosystem, favouring the growth of stinging organisms in the absence of their natural predators, and causing a sharp depletion of fish stocks.

In our clinics, we regularly see children with lesions from contact with stinging marine animals capable of injecting toxic proteins. These lesions are mostly linear in expression, like the tentacles of Cnidarians, and after a very early erythematous-pomphoid itchy phase, they evolve into vesicles that break off to form scabs and often become infected.

Of these cases we report two.

Case 1

A 7-year-old boy from Lazio (Tyrrhenian Sea) presented to our clinic with a painful, exudative erythematous lesion (Fig. 1) located on the anterior surface of the right leg. The lesion had appeared following contact with Pelagia noctiluca during a sea swim two days earlier. Despite treatment with topical antibiotics and corticosteroids, the lesion deepened in the following days, forming a superficial eschar and eventually healed with scarring after approximately 12 days.

Fig. 1. *Exudative erythematous lesion on the right leg after contact with Pelagia noctiluca.*

Case 2

The second case, reported from the Veneto region (Adriatic Sea), serves as a clear example of what should be avoided. It concern a two-year-old girl whose parents had placed her in a shallow pool they had dug in the sand and filled with seawater, unaware that jellyfish were present. After coming into contact with a stinging marine organism, she suddenly cried out. In an attempt to soothe her, her parents poured seawater over the reddened area on her left thight. Unfortunately, they then rubbed the affected area with hot sand, which significantly aggravated the lesion due to the rupture of nematocysts (Fig. 2).

Fig. 2. *Skin lesion on the left thigh after contact with Pelagia noctiluca.*

Discussion

These cases highlight the importance of providing families with accurate information to prevent potentially harmful actions. Among the most notable stinging marine organisms is *Pelagia noctiluca*, a jellyfish commonly found in our seas, with tentacles exceeding one meter in length. These tentacles contain toxic compounds such as congestin, thalassin, and hypnosin, which, upon contact with human skin, can provoke localized inflammatory reactions and, in some cases, systemic symptoms, depending on individual sensitivity and the quantity of venom introduced.

Not all jellyfish are dangerous; however, certain species, such as *Physalia physalis*, also known as the Portuguese man o' war, pose significant risks. Others, like *Rhizostoma pulmo* and *Cotylorhiza tuberculata*, are more visible and generally less harmful (2). Accidental contact is common, since tentacles are often transparent and may extend over a meter in length. For this reason, it's crucial to prevent contact by avoiding swimming in areas where jellyfish or their remnants are visible and by teaching both children and parents to refrain from touching stranded animals or their seemingly harmless fragments. Wearing suitable protective clothing during bathing is also advisable.

If contact occurs, the affected area should be rinsed thoroughly with seawater, which neutralizes and flushes away residual nematocysts, rather than fresh water, which can trigger venom release and worsen the injury due to osmotic rupture of the stinging cells. It is equally important not to scratch or rub the affected area. Appropriate topical treatments containing aluminium chloride can help soothe the skin, and systemic analgesics or corticosteroids may be required to control severe pain (3).

Systemic reactions, such as diffuse urticaria or bronchospasm, require immediate intervention following allergology protocols. Beyond jellyfish, other stinging or harmful marine organisms include sea anemones and actinias, with stinging capabilities comparable to jellyfish, sea urchins, whose spines, if left embedded, may lead to granulomatous skin lesions, and fish with venomous spines such as weever fish (tracine), scorpionfish, and stingrays.

A recently reported species in the Mediterranean is *Hermodice carunculata*, commonly known as the "vermocane." This alien, tropical-origin organism often washes ashore after sea storms and can grow up to 60 centimeters in length. Contact with its bristles causes painful, erythematous-pomphoid skin lesions similar to those provoked by the terrestrial processionary moth. The recommended response is to gently remove the bristles using adhesive strips or tape, followed by administration of analgesic and anti-inflammatory treatments.

Another lesser-known but clinically relevant condition is 'swimmer's itch', a dermatitis resulting from transcutaneous penetration by the larvae of trematodes (cercariae), parasites commonly hosted by waterfowl. Though typically found in lakes and rivers, cases have occasionally been reported in tropical marine environments. Humans are aberrant hosts in these scenarios: the larvae fail to complete their life cycle but trigger the appearance of erythematous, intensely itchy papules. Treatment consists of vigorous showering and rubbing, followed by the application of anti-inflammatory ointments.

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