

Mucocutaneous Junctional and Flexural Paresthesias Caused by the Holoplanktonic Trachymedusa *Liriope tetraphylla*

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Key Words

Liriope tetraphylla · Medusa · Jellyfish · Hydrozoa · Paresthesia · Southwestern Atlantic Ocean

Abstract

Multiple stages of *Liriope tetraphylla* caused paresthesias leading to chafing and excoriations in swimmers along the Southern Uruguayan and Northern Argentinean Atlantic coasts. These episodes appear seasonally in the summer and affect groups of bathers in shallow water (1–3 m).

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The realization that minor cutaneous irritations occurring during bathing or diving may be caused by live marine organisms has recently been recognized by biomedical sciences. Embryonic and adult forms of jellyfish, crabs, anemones, isopods, trematodes and seaweeds can produce eruptions and/or irritations (table 1) [1–4].

Report of a Case

In the summer of 1999, bathers were stung by *Liriope* on Mar del Plata beach in Argentina. A 28-year-old healthy man swimming there felt his facial skin lightly touch a jelly-like substance. Within a few seconds

after opening his eyes, severe periorbital pruritus was noticed. As he left the water, a strong itching sensation in the axilla, groin and on the genitals appeared, then increased as the sun dried his skin. Rubbing did not

relieve the sensation which persisted until he washed with fresh water 30 min later. There were no sequelae. When leaving the beach, the bather saw a large pink patch in the water where he had been swimming (fig. 1).

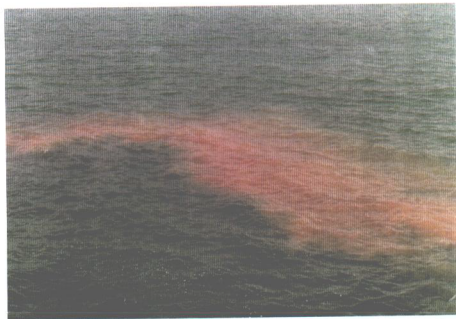


Fig. 1. *Liriope tetraphylla* bloom and aggregation at Mar del Plata (Argentina) in December 1999.

Table 1. Characteristics of minor eruptions induced by marine animals

Name	Cause	Geographic location	Clinical manifestation
Mucocutaneous junctional and flexural paresthesias	<i>Liriope tetraphylla</i>	Northern Argentine and Uruguayan Atlantic coasts	Burning irritation on axilla, groin, lips, conjunctiva
Seabather's eruption	<i>Linuche unguiculata</i>	Western Caribbean shores from Venezuela to Bahamas and Florida Atlantic coast	Urticarial eruption under swimsuit with little patches elsewhere on the trunk and proximal extremities
	<i>Edwardsiella lineata</i> (anemone larva)	US Atlantic Coast, New England to North Caribbean	
Sea pest	Unidentified anthozoan	Palm Beach to Pampano Beach, Fla.	Small pruritic or scratchy feelings on the trunk and proximal extremities
Cymathoidism	Isopod crustaceans <i>Cirolana woodjonese</i> and <i>Cirolana harfordi</i> , <i>Ecirolana chiltoni</i> and <i>orientales</i>	California, Australia	Pruritic papules at site contacting the sand
Larval crab eruption	<i>Rhithropanopeus harrissii</i> , Larval crabs, Larval blue crabs (<i>Callinectes sapidus</i>)	Chesapeake Bay, Atlantic coast of North Carolina	Small pruritic papule in hairy skin or under swimsuit linings
Seaweed dermatitis	<i>Lyngbya majuscula</i> , <i>Microcoleus lyngbyaceus</i>	Oahu, Queensland/Ryukyu Islands	Pruritic urticarial eruption over exposed skin
Sargassum seaweed dermatitis	Sargassum seaweed	Florida	Pruritic scratches from prickly seaweed
Swimmer's itch	Bird schistosomes	North American flyways	Pruritic papules over the fingers where clam digging exposed patient to worms
	<i>Austrotilharzia</i> , <i>Microbilharzia variglandis</i> , <i>Austrotilharzia terriglandensis</i>	New South Wales, Tasmania	
	<i>Carybdea stickii</i> (bell diameter up to 12 mm)	Indo Pacific, Japan to Australia and New Zealand	Erythematous rash with blistering; nocturnal
	Various nudibranchs, one of which are <i>Glaucus</i> (marine mollusc) or slug	-	Release of jellyfish nematocysts stored in their pharyngeal outpouches (cnidosac)

Discussion

Irritation, sometimes with bruising of the mucocutaneous junction of the conjunctiva, lips and deep flexural creases of the axilla and groin, occurred in bathers in mid summer (January) on Argentinean and Uruguayan beaches such as Mar del Plata (38° S) or la Paloma (34° S).

Initially, the causative animal was not detected until many small medusae were caught repeatedly in plankton nets (mesh width 300 µ) towing samples. These animals, *Liriope tetraphylla* (Hydromedusae), had swarmed in a population bloom close to shore yearly from 1989 to 1999. The medusae, 1–3 cm in diameter, had 4 smaller interradial tentacles plus 4 main pink to white periradial tentacles with rings of nematocyst batteries (fig. 2, 3) [5, 6]. In nearby areas, the jellyfish dominate the planktonic community with densities of 600 individuals/m³ [7]. These densities, known as 'tapioca' or 'pica-

pica' (4.7×10^6 individuals/m³) are produced by the intensive rate of reproduction (bloom) as well as physical processes in the water (aggregation). The jellyfish color sea water pink and cover fishing nets with pink-colored masses (fig. 1). At these times, the local fishermen suffer from minor eyelid irritation and tearing lasting over 2 h before healing without sequelae.

Paresthesias were perceived initially and rubbing or excoriations followed. Rarely they produced chafing in the axilla and groin. Up to several hundred swimmers can be affected in a single day; most were surfers in 1- to 3-meter-deep water. The maximum sensation was immediate but persisted for over 3 h. No sequelae were seen during the first posting week.

The flexural distribution of *Liriope*-induced paresthesia is probably a result of entrapment and subsequent maceration of the medusae or larvae between body surfaces. Lip and conjunctival sensations could be a con-

sequence of the repeated closure of the mouth and eyes or rubbing by the bather.

Not every swimmer in the group was affected, yet no one appeared to be resistant. Many bathers when afflicted, left the water, then returned 2–3 h later only to be stung again. The second episodes were similar to the initial ones.

Liriope, as is characteristic of the known trachymedusae, has all life stages in the planktonic realm (holoplanktonic). Embryos develop directly into another medusa [8].

L. tetraphylla medusa inflicted a distinctive, clinically recognizable irritable sensation and minor dermatitis on bathers (table 1). Presently only a few of the slight cutaneous entities produced by marine animals have known etiologies. Crab larvae mechanically scratch glabrous skin and stick to small hairs and swimsuit linings. These animals produce paresthesia which feels like trapped pine tree needles. *Linuche* medusae and larvae are caught under the bathing suit and

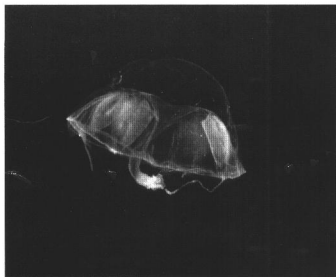


Fig. 2. Mature specimen of *Liriope tetraphylla* (Chamisso and Eysenhardt, 1821) collected in Samborombón Bay and preserved in 4% formaldehyde solution.

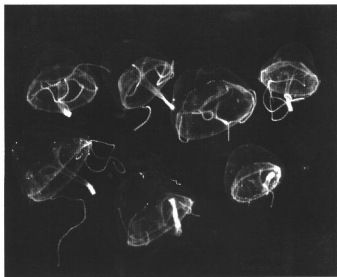


Fig. 3. Immature specimens of *Liriope tetraphylla* collected at Mar del Plata during a summer bloom in January of 1997.

fire nematocysts as the suit clings to the skin when the swimmer leaves the water. In these instances, the swimmer suffers intense pruritus. Seaweed dermatitis involves exposed body parts with intense pruritus, and clam diggers often show bird schistosoma dermatitis with its burning sensation as they touch the worm in the sand where a migrating bird defecated.

Significant eruptions producing burning and itching over small areas of skin can result from small jellyfish such as *Carybdea sivickisi* [9]. Marine molluscs or nudibranchs feed on jellyfish, sort out their venomous nematocysts, then store them in a pharyn-

geal outpouch known as a cnidosac. This structure is then purged and the nematocysts are used as a weapon. The resultant rash would be the same as that resulting from jellyfish stings, but the distribution of the eruption would follow the contact with the molluscs' cnidosac.

Liriope has previously been mentioned as being capable of causing minor skin irritations, yet no appreciation of the extent and frequency of this event followed [10]. Moreover, it is known that the larval as well as the delicate hydromedusa forms of *Liriope* can easily be fragmented, thus camouflaging and amplifying their range of exposure to unsus-

pecting bathers. No current prophylactic or definitive cure or treatment is presently known.

Locally, along the northern Argentinean beaches, the only known hydrozoan stinging culprit has been *Olinidias sambaquiensis*, now we recognize another [11, 12].

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