

Another cause of “Irukandji stings”

Mark Little,* Jamie Seymour†

*Emergency Physician, Sir Charles Gairdner Hospital, Hospital Avenue, Nedlands, WA 6009; †Senior Lecturer, Tropical Biology, James Cook University, Cairns, QLD. Mark.little@health.wa.gov.au

To the Editor: In 1964 the Journal published an article by Barnes which solved the mystery of a distressing illness that was affecting many Queensland beachgoers — Irukandji syndrome.¹ In a remarkable piece of detective work, Barnes had captured a small (25 mm bell) jellyfish and demonstrated, by allowing it to sting himself, his 9-year-old son and the on-duty life-guard, that this jellyfish caused Irukandji syndrome. All required inpatient care. This jellyfish was named *Carukia barnesi* in his honour, and has been known as the “Irukandji jellyfish”. Many now believe that more than one jellyfish is responsible for Irukandji syndrome. Significantly, in the 40 years since Barnes’ discovery, no other jellyfish causing Irukandji syndrome has been identified.

Here we present evidence of an identified unnamed jellyfish causing Irukandji syndrome. This information is further to a case we have previously reported, of a 24-year-old woman who developed Irukandji syndrome after being stung while snorkelling on the Great Barrier Reef.² By the time she arrived in the emergency department she was in severe pain, had hypertension and tachycardia, and had clinical and echocardiographic signs of left ventricular failure. She was intubated 24 hours after being envenomed, and required inotropic support for 72 hours and ventilation for 8 days. Her troponin level peaked at 72 µg/L (normal, <0.7 µg/L) and her echocardiogram demonstrated severe cardiac dysfunction, with a cardiac index of 1.7 L/min/m². She recovered fully and was discharged home 14 days after admission.

At the time, a 2 mm piece of tentacle (Box [a]), and one nematocyst (species-specific stinging cell; Box [b]), was collected from underneath the pressure immobilisation bandage on the sting site. Although we were confident that this tentacle did not come from *C. barnesi* (Box [d]), we were unable to identify the jellyfish.

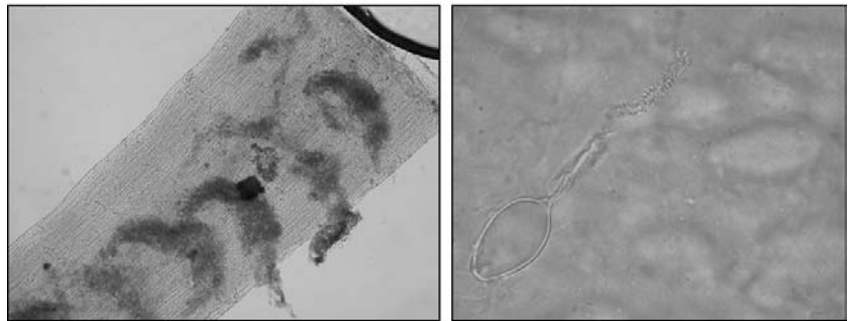
One of us (JS) has been reviewing collections of jellyfish. In the Queensland museum collection he examined a small, unnamed jellyfish (Box [c]) which was morphologically different to *C. barnesi*. This “new” jellyfish had gastric cirri (absence of gastric cirri is a specific characteristic of the genus *Carukia*) The nematocyst from our patient (Box [b]) matched the nematocysts from the Queensland museum specimen (Box [e]). We have thus identified an unnamed jellyfish whose sting

resulted in life-threatening cardiac failure associated with Irukandji syndrome.

This case confirms that more than one jellyfish is responsible for Irukandji syndrome. We propose that *C. barnesi* should no longer be known as the “Irukandji jellyfish” but the “Barnes jellyfish” in honour of its discoverer.

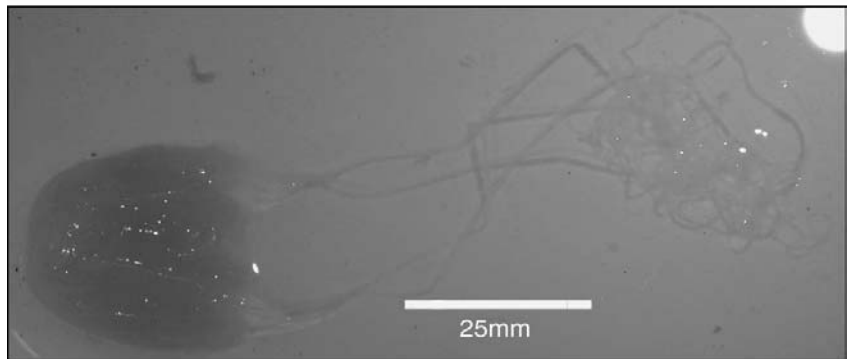
1. Barnes JH. Cause and effect in Irukandji stings. *Med J Aust* 1964; 1: 897-904.
2. Little M, Mulcahy RF, Wenck DJ. Life threatening cardiac failure in a healthy young female with Irukandji syndrome. *Anaesth Intensive Care* 2001; 29: 178-180. □

A piece of tentacle and a nematocyst from the patient, compared with a tentacle from *Carukia barnesi* and with nematocysts from an unnamed jellyfish

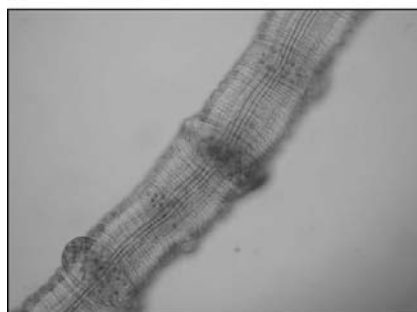


(a) Tentacle from the patient

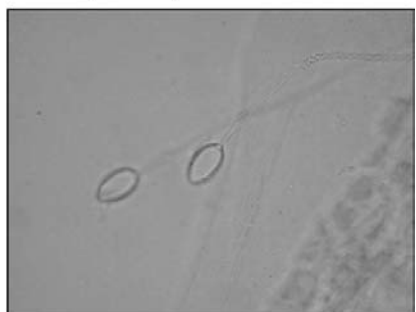
(b) Nematocyst from the patient



(c) Unnamed jellyfish from the Queensland museum (bell size)



(d) Tentacle from *Carukia barnesi*



(e) Nematocyst from jellyfish in the Queensland museum