

## **Latrodectism: case report of a katipo spider (*Latrodectus katipo*) bite and review of the literature**

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### **Abstract**

We describe the case of a 29-year-old man who was bitten on the leg by a katipo spider, a relative of the Australian redback and American black widow spiders, while camping in sand dunes at Mahanga Beach, Mahia (North Island of New Zealand). Symptoms of latrodectism developed within hours, and were not diminished until two doses of the antivenom had been administered. This is only the second case report of a katipo spider bite in the recent literature. The katipo spider bite produces significant symptoms, however an antivenom is available in some hospital pharmacies.

The katipo spider, *Latrodectus katipo*, is a native New Zealand venomous terrestrial species that inhabits sand dunes along coastal regions.<sup>1</sup> The Māori word 'katipo' means night (po) stinger (kati). The genus *Latrodectus* also includes the Australian redback spider (*Lactrodectus hasseltii*) and the American black widow spider (*Latrodectus mactans*).<sup>2</sup>

### **Case report**

A healthy 29-year-old man was ocean kayaking down the east coast of the North Island of New Zealand, and stopped for the night at a remote section of Mahanga Beach, Mahia.

While eating dinner in the sand dunes, he felt something crawling on his left calf, and brushed it off with his hand. Half an hour later a sharp pain began in his left calf, and over the next few hours it intensified, migrated up his leg, and into his groin and lower abdomen. During this time, he also developed chest pain, nausea and oral tingling.

Ambulance services were activated by the patient, using his cellphone, and while he was quickly located, it took several hours to get him from the remote beach to Wairoa Hospital, due to very poor weather. En route, the paramedic administered morphine (5 mg IV) for pain, adrenaline (0.5 mg IM) for mouth tingling (possible anaphylaxis), as well as aspirin and nitroglycerin spray for chest pain.

In hospital, pain persisted despite tramadol (50 mg IV), paracetamol (1 g PO), and diclofenac (100 mg PR). Vital signs and examination, including the skin of the left calf, were unremarkable.

His case was discussed with the National Poisons Centre toxicologist, who recommended the use of redback spider antivenom, but he had no knowledge of the closest hospital from which it could be sourced. Hastings Hospital Pharmacy was contacted and they informed us that Wairoa Hospital in fact had a supply of the antivenom on site.

Symptoms rapidly improved after the initial dose of 500 units of anti-venom IM, but they did not fully resolve. A second dose was given 2 hours later, which further reduced his pain. Additional supportive treatment included phenergan (25 mg PO) and IV fluids (1 L of normal saline). He was observed overnight, and discharged pain-free the next day with instructions that should pain recur, further doses of antivenom can still be given.<sup>3</sup>

## Discussion

Hornabrook, in his 1951 review of the early literature on katipo spider bites, found a total of 22 cases, including 2 deaths.<sup>4</sup> Since 1951, there has been only one reported case of a katipo bite, involving severe myocarditis in a 22-year-old man,<sup>5</sup> despite katipo spiders inhabiting coastal beach dunes around New Zealand.<sup>1</sup>

While we could locate no published reports of katipo living in the Mahia region, local Department of Conservation (DOC) staff observed katipo spiders on the Mahanga Beach dunes during the 1990s (Personal Communication, Malcolm Smith, DOC, Gisborne, 2011).

The bite from spiders of the genus *Latrodectus* can produce a syndrome called latrodectism.<sup>6</sup> The signs and symptoms include local and systemic pain and sweating, hypertension and nausea.<sup>6</sup> In more serious cases pulmonary oedema, seizures, heart complications and even death have been reported, although there have no recorded deaths from katipo bites in the last century.<sup>5,7</sup>

Our subject exhibited classic symptoms, except sweating, and responded promptly to the antivenom, supporting a diagnosis of katipo spider bite. The major limitation to this case report is that there was no confirmed identification of the spider.

Valid indications for administering redback spider antivenom include evidence of systemic envenoming, or intractable pain in the context of a plausible history for a katipo spider bite.

Current TOXINZ guidelines (<http://www.toxinz.com/>) recommend giving 500 units of the antivenom IM (IV for severe or life-threatening envenomation). If there is no clinical response, then up to 3 vials can be administered at 2 hourly intervals. It is very rare for symptoms to persist for weeks or months, but in this atypical situation there is some limited evidence that antivenom given long after the initial bite may still be efficacious in resolving chronic symptoms.<sup>3</sup>

Adverse reactions to the antivenom are rare, with anaphylaxis occurring in 0.54% and serum sickness in 1.7% of doses.<sup>8</sup> The New Zealand Pharmacists' Association maintains a current list of those base hospitals in New Zealand that hold redback spider antivenom.<sup>9</sup>

It is interesting to note that not all base hospitals hold this antivenom, while some rural hospitals<sup>10</sup> (e.g. Wairoa Hospital) do, which in this case enabled prompt treatment.

We suggest that all base hospital pharmacies, as well as the National Poison Centre in Dunedin, should have a list of all sites currently holding the antivenom.

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