When associated with rattlesnake envenomation, myokymia has been described in muscle groups close to the site of envenomation or in facial muscles.¹ In contrast, fasciculations occur randomly as single muscle twitches. Electrophysiologically, myokymia is a series of brief axonal bursts of a single motor unit that fires at rates of 5 to 150 Hz.² Each burst occurs as a doublet or multiplet. Fasciculations also occur as a single motor unit but do not fire in tetanic bursts and do not occur cyclically.²

The etiology of myokymia is poorly described but thought to occur as a result of an interaction between the venom and the calcium or voltage-gated potassium channels on nerve axons.^{1,2,5} Axonal anatomy is unaffected, but a biochemical alteration in the microenvironment around an axon is likely the cause of myokymic discharge. Rapid resolution of myokymia with intravenous calcium or CroFab antivenom has been described and is consistent with the proposed biochemical etiology.¹

Myokymia, a neuromuscular disorder reported with eastern US rattlesnake envenomations (*C horridus horridus*), is now reported as a feature of envenomation by at least 1 species of southwestern rattlesnake (*C viridis decolor*).

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Dysphonia: A New Addition to Jellyfish Envenomation Syndromes

To the Editor:

A fit, 20-year-old male swimmer was doing the crawl

in a calm sea north of Ft Lauderdale, Florida, on Friday afternoon, January 8, 2004. He had no prior exposure to jellyfish. While he was wearing goggles and briefs in 14 ft of water, 300 yds offshore, he suddenly felt a stinging irritation in his mouth. He returned to the companion boat 50 yds away, and noticed dysphonia. For the next 30–45 minutes, he could only mumble and make sounds but no words. Mild swelling of the tongue was the only abnormality on oral examination. Swallowing was not affected. After standing on the boat he noticed a stinging, linear, papular eruption on the left pectoral and anterior deltoid areas. The pain abated in 1 hour, but tenderness lasted for 3 days. Several companions were also stung and developed similar rashes. All, including the patient, applied topical vinegar to stung areas (including the patient's tongue). The patient's eruption remained localized, and became more prominent the next day before disappearing after a week. The only systemic symptom was an overnight headache appearing a few hours after the sting. A biopsy of chest skin obtained 4 days later was interpreted as chronic inflammation.

The patient removed small, dark blue, linear tissue strands from his left arm. He had swum through a small swarm of 1–3 cm diameter blue *Physalia physalis* medusae. Fragmentation of tentacles, even from small specimens, is common. The venom of *Physalia* is a mixture of large enzymatic polypeptides that have musculotoxic, cardiotoxic, neurotoxic, hemolytic, and cellular injuring actions.^{1–4} Jellyfish toxin is known to be neurotoxic because it decreases the action potential of peripheral nerves and musculotoxic because it interferes with the binding of ionic calcium in skeletal muscle sarcoplasmic reticulum, or possibly producing pores in excitable membranes.^{1–4}

This case illustrates temporary toxin-induced paralysis of the tongue muscles and lingual nerves resulting from nematocyst release as tentacle fragments swirled within the patient's mouth during the breathing cycles of swimming. This patient's temporary functional loss mirrors that seen in cases of limb muscle weakness reported in the literature.⁵ Although limb impairment has been reported to persist up to 6 months,⁵ his tongue impairment lasted less than 1 hour. Even though the tentacles had wide contact with this swimmer's mouth, no airway interference occurred from palatal paralysis or oral edema. Instead, the tentacles slashed across the anterior mouth and tongue, transiently paralyzing his lingual nerves and tongue, producing dysphonia.

This case report is important because it illustrates the rapidity that nematocyst venom can produce significant muscle and/or nerve damage after epithelial penetration. Also, it stresses that these injuries can be temporary and not require aggressive therapy.

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