Distal limb ischemia from jellyfish envenomation

Eunizar Omar[1*], Sujata Kirtikant Sheth[2], Kunzang Norbu[1], Vanitha Porhcisailyan[1]
1. 110 Sengkang East Way
2. 17 Woodlands Drive 17 Singapore 737628
Correspondence to: Eunizar Omar
*110 Sengkang East Way.
Email: eunizar.omar@singhealth.com.sg
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Introduction:
Limb ischemia from jellyfish envenomation is exceedingly rare. Only 15 cases have been reported in the literature.
Case Report:
A 15-year-old boy developed a painful rash over both arms and left thigh immediately after a jellyfish sting. He received anti-tetanus treatment, analgesia, and calamine lotion the same day. Six days later, he visited the emergency department with numbness over his left hand. Although comfortable, the patient had rashes over his left distal forearm and wrist and his left 3rd to 4th fingers, thumb, palm, and thenar eminence were cyanotic with compromised sensation, capillary refill, and left radial pulse. CT angiogram showed symmetrical severe attenuation of the distal left forearm arteries with possible occluded segments with smooth tapering along the forearm. Intravenous heparin, nitroglycerine, alprostil, and antibiotics were administered. Reperfusion was achieved, and he was discharged 3 days later. The patient subsequently made a full recovery with sensation and function all intact.
Discussion:
In 2022, Badran et al. published a literature review and proposed a management algorithm for limb ischemia from jellyfish envenomation, which we successfully employed in this case. First aid measures are crucial to denature jellyfish venom, prevent venom liberation, and remove undischarged nematodes from the skin. Unfortunately, our patient did not receive any first aid.

Although stung over 3 limbs, only the patient's left hand, where the most extensive lesion occurred turned ischemic, suggesting a dose-dependent reaction. It is unclear if distal ischemia is purely immunologically mediated or toxicological, as ischemia can occur within hours to 4 weeks.

Due to the complex biochemical content of jellyfish venom, multiple mechanisms such as vasospasm, thrombosis, and compartment syndrome are likely at play. Effective medications reversed vasospasm (e.g., prostacyclin mimetics) and microembolic blockage (e.g., thrombolytics). Surgery should be reserved for compartment syndrome or necrotic tissue debridement. Compartment syndrome may partially contribute to ischemia with one case reporting immediate reperfusion after fasciotomy. However, ischemia can still occur without compartment syndrome.
Conclusion:
Limb ischemia is a serious complication of jellyfish envenomation that can be successfully treated using the management pathway proposed by Badran et al. without the need for surgical intervention.
Keywords:
Limb ischemia, jellyfish venom, reperfusion.