Deleterious Outcome following Prolonged Ice Application of an Agkistrodon Contortrix Envenomated Finger

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Background
The outcome for victims of Agkistrodon contortrix envenomations is typically full recovery with rare reports of permanent injury. Evidence suggests that cryotherapy of crotalid envenomated tissue is potentially harmful. We report a case of prolonged cryotherapy application to an Agkistrodon contortrix envenomated finger with subsequent adverse outcome.

Case Report
A 55 year-old previously healthy male was bitten on his left ring finger at the proximal interphalangeal joint by a snake positively identified as an Agkistrodon contortrix. He subsequently submerged his hand in an ice water bath for 90 minutes before presenting to a local hospital. Due to progressive finger and hand edema, he was treated with Crotalidae Polyvalent Immune Fab. He developed no laboratory abnormalities. At discharge the next day, he was noted to have 2 large bullae over the bite site with adjacent ecchymosis.

Five days following discharge, he returned to the hospital due to progression of ecchymosis and necrotic tissue over the distal portion of his finger. His laboratory values remained normal. Despite local wound care and antibiotic therapy, he continued to have significant necrotic finger tissue and subsequent decreased range of motion of his finger. One week after the envenomation, plastic surgery determined that his finger was not viable and his finger was amputated.

Discussion
Current literature recommends against the use of cryotherapy in the treatment of snake envenomation victims as such therapy may worsen outcomes(1). Despite these recommendations, first aid Internet sites continue to recommend ice application(2). Clinicians and the public require increased education as to the proper first aid management of snake envenomation to avoid potentially inducing adverse outcomes.

References
