Brown Recluse

Brown recluse spider bite to the eyelid.

Jarvis RM, Neufeld MV, Westfall CT.

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PURPOSE: To present a photographically documented case of a known brown recluse spider bite to the eyelid. DESIGN: Interventional case report. METHODS: The wound was photographed daily during an 11-day hospitalization and at 1 month and 6 months after the injury. Treatment included canthotomy and cantholysis; administration of dapsone, antibiotics, and steroids; and hyperbaric oxygen therapy. MAIN OUTCOME MEASURES: Clinical presentation and course of a known brown recluse spider bite. RESULTS: Complete recovery with cicatrization at the site of the bite. CONCLUSIONS: We present a case of a brown recluse spider bite to the left lower eyelid with a discussion of management and outcome of this rarely reported injury.

Brown recluse spider envenomation: a prospective trial of hyperbaric oxygen therapy.

Maynor ML, Moon RE, Klitzman B, Fracica PJ, Canada A.

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OBJECTIVES: Loxosceles reclusa (brown recluse) spider bites can produce severe skin lesions that may necessitate extensive surgical repair. This study delineated the effects of hyperbaric oxygen (HBO) therapy on these lesions by performing a prospective controlled animal study. METHODS: After approval by the Institutional Animal Care and Use Committee, 41 New Zealand white rabbits received 64 intradermal injections of 73 microL of raw venom extract mixed with physiologic buffered saline (Dulbecco's solution). Control injections were made with buffer. The animals were divided into 5 groups: 1) venom and no HBO; 2) venom and 1 immediate HBO treatment (100% O2); 3) venom and immediate HBO with 10 treatments (100% O2); 4) venom and then delayed (48 hr) HBO therapy with 10 treatments (100% O2); and 5) venom and immediate hyperbaric treatment with normal inspired PO2 for 10 treatments (8.4% O2). Three animals in group 2 also received a control sodium citrate buffer injection. HBO treatments were at 2.5 atm absolute (ATA) for 90 minutes twice daily. Daily measurements were made of the lesion diameter, and skin blood flow using a laser Doppler probe. RESULTS: There was no significant effect of HBO on blood flow at the wound center or 1-2 cm from the wound center. Standard HBO significantly decreased wound diameter at 10 days ($p < 0.0001$; ANOVA), whereas hyperbaric treatment with normoxic gas had no effect. Histologic preparations from 2 animals in each group revealed that there were more polymorphonuclear leukocytes in the dermis of all the HBO-treated animals when compared with the venom-alone and sodium-citrate controls. CONCLUSION: HBO treatment within 48 hours of a simulated bite from L. reclusa reduces skin necrosis and results in a significantly smaller wound in this model. The mechanism appears unrelated to augmented local blood flow between treatments.

Hyperbaric oxygen effects on brown recluse spider (Loxosceles reclusa) envenomation in rabbits.

Strain GM, Snider TG, Tedford BL, Cohn GH.

Toxicon. 1991;29(8):989-96.

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Human loxoscelism was modeled in albino rabbits by injection of brown recluse spider (Loxosceles reclusa) venom, and the effects of daily or twice-daily hyperbaric oxygen treatment on wound healing were investigated. Lesions similar to those seen in humans were produced in rabbits by intradermal injection of 200 microliters of a venom extract (0.21 microgram protein per microliter), including edema and erythema, ischemia and cyanosis in the first 12 hr, extensive purpura by 24 hr, and crateriform ulcer formation by day four, with induration and eschar formation. Hyperbaric oxygen treatments, consisting of two atmospheres absolute (2 ATA) for 60 min, were applied daily (n = 8) or twice daily (n = 8), while control animals (n = 8) received no treatment. Treatments were initiated 72 hr after venom injection (day 3) to duplicate typical clinical treatment delays, and were administered for seven consecutive days. No significant effects of hyperbaric oxygen treatment on lesion healing were seen as measured by lesion area. However, histologic evaluation of wound tissue collected at euthanasia on day 24 showed clear differences between rabbits receiving twice-daily treatments and those receiving daily or no treatment. The former showed complete re-epithelization or slight ulceration, while the latter usually had necrotic cavities extending into the dermis, with myonecrosis and inflammatory cell accumulation. Thus, no superficial differences were seen between groups, but twice-daily treatments resulted in enhanced recovery at the histologic level.

Management of the brown recluse spider bite to the glans penis.

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A significant number of people are bitten by the brown recluse spider (BRS) each year. Medical treatment regimens are sometimes unsatisfactory and surgical intervention is often necessary to debride the necrotic wound. This case study reports the treatment given to a 19-year-old active duty United States Army soldier who suffered a BRS bite to the glans penis. This patient received immediate medical attention and was started on intravenously administered diphenhydramine, methylprednisolone, calcium gluconate, and famotidine. Oral dapsone treatment was begun in the emergency room. Within 24 hours after his injury, the patient received his first hyperbaric oxygen treatment, which was continued twice daily for 5 days. Skin necrosis was avoided, the patient did not require any surgical intervention, and he was discharged after 8 days without sequelae.