

Brown Spider Bites

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In North America the brown spider (*Loxosceles reclusa*) and in South America the house spider (*Loxosceles laeta*) are known to cause loxoscelism, or necrotic arachnidism, which is a syndrome of ranging severity.¹ The spider can be found in closets and packing boxes, under socks, around outdoor plumbing, and indoors and in other quiet places. It is able to live in areas of low humidity and to survive for a long time without water and food. It is not an aggressive creature; it will attack or bite only if it believes that it is threatened.

The brown spider bite causes a wide spectrum of reactions, from a very mild, hardly noticeable irritation² to a systemic condition that can occasionally cause death. Hemolytic anemia and fulminant, sometimes fatal, intravascular coagulation have been described.³

The symptoms and signs following brown spider bites are pain, pruritus, malaise, chills, sweats, gastrointestinal upset, myalgias, dizziness, dyspnea and headache, erythema, cellulitis, rash, blister, angioedema, urticaria, lymphangitis, and skin necrosis.⁴

The present report describes 12 patients bitten by the brown spider, according to their description, who were treated in the Golda Medical Center emergency department.

CASE REPORT

In a period of 2 years (1987 to 1989), 12 patients were treated who were bitten by brown spiders. There were 3 men and 9 women, and their ages ranged from 21 to 63 years, with mean age of 42 years.

The location of the bites were thigh (3 cases), neck with lymphangitis (2 cases), arm (1 case), hand (1 case), forearm with lymphangitis (1 case), buttock (3 cases), and axillary (1 case).

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Case 1

A 48-year-old woman was bitten by a spider on her right hand. Initially she felt a slight itching. After a few hours she developed severe pain in her hand, chills, fever, and vomiting. On arrival at the hospital, she was in a good condition, with a temperature of 38.8°C. The physical examination was normal except for her right hand, which was swollen, painful, and erythematous. On the third finger there were two blisters with lymphangitis toward the right axilla, and swollen and painful lymph nodes on the same side.

She was admitted to the hospital. After a few days of treatment with antibiotics, her conditions improved and she was discharged.

Case 2

A 63-year-old woman was bitten by a spider on her left buttock 3 weeks before presentation at the hospital. During this time she suffered from intense pain, pruritus, and a sensation of burning. She could not sleep at night. On examination, an area of erythema was seen on the left buttock and thigh with a central area of necrosis (Figure 1).

Case 3

A 28-year-old woman was bitten by a spider on the left side of her neck 24 hours before coming to the hospital. She had a sensation of burning and pruritus. Findings on examination were an area of erythema on the left side of her neck and upper left thorax, a central area of necrosis and lymphangitis toward the left axilla, and a swollen and painful lymph node on the same side.

Case 4

A 30-year-old man was bitten by a spider on his left forearm. He complained of pruritus. He was found on examination to have a central area of necrosis surrounded by a large area of erythema. There was also lymphangitis toward the left axilla (Figure 2).

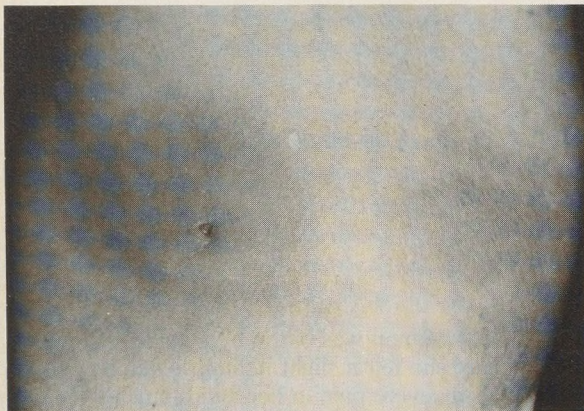


Figure 1. Case 2: A vast area of erythema with a central area of necrosis on the left buttock.

COMMENT

The spider's venom contains approximately eight separate proteins, mainly enzymes, from which levarterenol bitartrate, hemolysins, and hyaluronidase have been separated.¹ Other enzymes such as protease, esterase, and hyaluronidase, identified in the spider's venom, have also been found in snake venom.

The effects of a spider bite have been observed by electron microscopic studies in rabbits.¹ After 3 hours endothelial damage occurs followed by thrombocytopenia, decreased fibrinogen levels, and an increased partial thromboplastin time. Thrombi composed of leukocytes

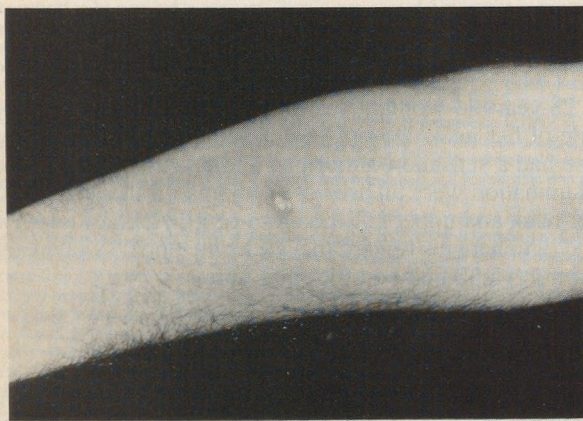


Figure 2. Case 4: Central area of necrosis and area of erythema on the left forearm.

and platelets were found to occlude small blood vessels, arterioles, and venules.

Atkins et al⁵ have injected the spider venom into the skin of rabbits and guinea pigs and observed hemorrhage in the dermis, capillary stasis, and thrombosis. After 24 hours, necrosis was observed in all layers of the skin, and there was a spreading region of hemorrhage and thrombi. After several days, a black eschar was present, with deeper necrosis into the fat, forming focal abscesses.

There are many recommendations for the early treatment of spider bites, including corticosteroids, antihistamines, phentolamine hydrochloride, and antibiotics.

Corticosteroids should not be given in all cases, but only in patients with systemic signs, fever, malaise, etc. Antibiotics are of value both prophylactically and therapeutically. Broad-spectrum antibiotics are recommended because they help to localize the inflammation and prevent infection secondary to the bite and the enlargement of the necrotic area.

In an article by Rees et al,⁴ the authors report on patients bitten by spiders who were treated with dapsone, brown recluse spider antivenom, or combination therapy. All patients also received erythromycin.

King and Rees⁶ treated a patient who was bitten by a spider by oral administration of dapsone 100 mg twice daily. After 2 days the patient was pain free, and there was reduction of the erythema and induration.

Another possible treatment of spider bites is surgery. When the bites are more severe, a mature, stable black eschar will develop within 5 to 7 days. Its healing may take several weeks. If there is a thick subcutaneous area under the involved skin, the eschar may never heal. The area of necrosis and the underlying tissue should be excised early and the area saucerized. The large erythema beyond the necrotic area should be left intact, since it disappears rapidly. A secondary closure must be performed 3 to 5 days later, using a split-thickness graft.^{1,7}

Hollabaugh and Fernandes⁸ suggested that a curettage of the brown recluse spider bite lesion must be performed in the early stages of development. This procedure prevents the continuing action of the toxin and allows healing.

Of the 12 patients, only one developed systemic signs (case 1); 9 patients were treated with erythromycin; and 2 patients underwent surgical treatment—wide excision of the necrotic area—with healing after 3 to 5 days.

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ZOVIRAX[®]

(ACYCLOVIR)
OINTMENT 5%

Before prescribing, please consult full package insert, a summary of which follows:

INDICATIONS AND USAGE: Zovirax (Acyclovir) Ointment 5% is indicated in the management of initial herpes genitalis and in limited nonlife-threatening mucocutaneous Herpes simplex virus infections in immunocompromised patients. In clinical trials of initial herpes genitalis, Zovirax Ointment 5% has shown a decrease in healing time and in some cases a decrease in duration of viral shedding and duration of pain. In studies in immunocompromised patients with mainly herpes labialis, there was a decrease in duration of viral shedding and a slight decrease in duration of pain.

By contrast, in studies of recurrent herpes genitalis and of herpes labialis in nonimmunocompromised patients, there was no evidence of clinical benefit; there was some decrease in duration of viral shedding.

Diagnosis: Whereas cutaneous lesions associated with Herpes simplex infections are often characteristic, the finding of multinucleated giant cells in smears prepared from lesion exudate or scrapings may assist in the diagnosis. Positive cultures for Herpes simplex virus offer a reliable means for confirmation of the diagnosis. In genital herpes, appropriate examinations should be performed to rule out other sexually transmitted diseases.

CONTRAINDICATIONS: Zovirax Ointment 5% is contraindicated for patients who develop hypersensitivity or chemical intolerance to the components of the formulation.

WARNINGS: Zovirax Ointment 5% is intended for cutaneous use only and should not be used in the eye.

PRECAUTIONS:

General: The recommended dosage, frequency of applications, and length of treatment should not be exceeded (see DOSAGE AND ADMINISTRATION). There exist no data which demonstrate that the use of Zovirax Ointment 5% will either prevent transmission of infection to other persons or prevent recurrent infections when applied in the absence of signs and symptoms. Zovirax Ointment 5% should not be used for the prevention of recurrent HSV infections. Although clinically significant viral resistance associated with the use of Zovirax Ointment 5% has not been observed, this possibility exists.

Drug Interactions: Clinical experience has identified no interactions resulting from topical or systemic administration of other drugs concomitantly with Zovirax Ointment 5%.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Acyclovir was tested in lifetime bioassays in rats and mice at single daily doses of 50, 150 and 450 mg/kg/day given by gavage. These studies showed no statistically significant difference in the incidence of benign and malignant tumors produced in drug-treated as compared to control animals, nor did acyclovir induce the occurrence of tumors earlier in drug-treated animals as compared to controls. In 2 *in vitro* cell transformation assays, used to provide preliminary assessment of potential oncogenicity in advance of these more definitive lifetime bioassays in rodents, conflicting results were obtained. Acyclovir was positive at the highest dose used in one system and the resulting morphologically transformed cells formed tumors when inoculated into immunosuppressed, syngeneic, weanling mice. Acyclovir was negative in another transformation system.

No chromosome damage was observed at maximum tolerated parenteral doses of 100 mg/kg acyclovir in rats or Chinese hamsters; higher doses of 500 and 1000 mg/kg were clastogenic in Chinese hamsters. In addition, no activity was found in a dominant lethal study in mice. In 9 of 11 microbial and mammalian cell assays, no evidence of mutagenicity was observed. In 2 mammalian cell assays (human lymphocytes and L5178Y mouse lymphoma cells *in vitro*), positive response for mutagenicity and chromosomal damage occurred, but only at concentrations at least 1000 times the plasma levels achieved in man following topical application.

Acyclovir does not impair fertility or reproduction in mice at oral doses up to 450 mg/kg/day or in rats at subcutaneous doses up to 25 mg/kg/day. In rabbits given a high dose of acyclovir (50 mg/kg/day, s.c.), there was a statistically significant decrease in implantation efficiency.

Pregnancy: Teratogenic Effects. Pregnancy Category C. Acyclovir was not teratogenic in the mouse (450 mg/kg/day, p.o.), rabbit (50 mg/kg/day, s.c. and i.v.) or in standard tests in the rat (50 mg/kg/day, s.c.). In a non-standard test in rats, fetal abnormalities, such as head and tail anomalies, were observed following subcutaneous administration of acyclovir at very high doses associated with toxicity to the maternal rat. The clinical relevance of these findings is uncertain.² There are no adequate and well-controlled studies in pregnant women. Acyclovir should not be used during pregnancy unless the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Zovirax is administered to a nursing woman.

ADVERSE REACTIONS: Because ulcerated genital lesions are characteristically tender and sensitive to any contact or manipulation, patients may experience discomfort upon application of ointment. In the controlled clinical trials, mild pain (including transient burning and stinging) was reported by 103 (28.3%) of 364 patients treated with acyclovir and by 115 (31.1%) of 370 patients treated with placebo; treatment was discontinued in 2 of these patients. Other local reactions among acyclovir-treated patients included pruritus in 15 (4.1%), rash in 1 (0.3%) and vulvitis in 1 (0.3%). Among the placebo-treated patients, pruritus was reported by 17 (4.6%) and rash by 1 (0.3%).

In all studies, there was no significant difference between the drug and placebo group in the rate or type of reported adverse reactions nor were there any differences in abnormal clinical laboratory findings.

OVERDOSAGE: Overdosage by topical application of Zovirax Ointment 5% is unlikely because of limited transcutaneous absorption (see Clinical Pharmacology).

DOSAGE AND ADMINISTRATION: Apply sufficient quantity to adequately cover all lesions every 3 hours 6 times per day for 7 days. The dose size per application will vary depending upon the total lesion area but should approximate a one-half inch ribbon of ointment per 4 square inches of surface area. A finger cot or rubber glove should be used when applying Zovirax to prevent autoinoculation of other body sites and transmission of infection to other persons. **Therapy should be initiated as early as possible following onset of signs and symptoms.**

HOW SUPPLIED: Zovirax Ointment 5% is supplied in 15 g tubes (NDC 0081-0993-94) and 3 g tubes (NDC 0081-0993-41). Each gram contains 50 mg acyclovir in a polyethylene glycol base. Store at 15°-25°C (59°-77°F) in a dry place.

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