

What's Eating You?

Latrodectus mactans

(The Black Widow Spider)

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Identifying Characteristics

Latrodectus mactans (the black widow spider) is distinguished by its large, shiny, bulbous body and hourglass design on its abdomen (Figures 1 and 2). These spiders are frequently found in woodpiles and under outhouse seats. The spider's silk is particularly strong, and some people have described a characteristic snap associated with the breaking of black widow webs when wood is lifted from a woodpile. Certainly, that characteristic sound should serve as a warning that spiders may be near. Most cases of poisoning are related to a bite, although poisoning through conjunctival exposure to a fragment of a smashed spider has been reported.¹

Adverse Reactions

Latrodectus tredecimquittatus is a cause of latrodectism in Europe.² *Latrodectus curacavienis* causes a similar syndrome in South America.³ Black (*Latrodectus indistinctus*) and brown (*Latrodectus geometricus*) widow spiders are found in southern Africa and Madagascar.^{4,5} The symptoms of brown widow bites tend to be milder and restricted to the tissue near the bite. The red-black spider (*Latrodectus mactans hasselti*) is found in Australia and New Zealand.⁶

Black widow venom contains latrotoxins. Alpha-latrotoxin exerts its effects by depolarizing neurons, increasing calcium, and stimulating uncontrolled exocytosis of neurotransmitters.⁷ Divalent cation-dependent tetramers related to alpha-latrotoxin can insert into lipid bilayers, forming membrane pores.⁸ Calcium-independent



Figure 1. Black widow spiders have a shiny black bulbous abdomen and small cephalothorax.

receptors also have been identified.⁹ Black widow bites produce symptoms that mimic an acute surgical abdomen. Patients often present with agonizing abdominal pain and muscle spasm. Symptoms may be misdiagnosed as appendicitis, renal or biliary colic, meningitis, tetanus, or drug withdrawal. Associated signs and symptoms may include hypertension, a target lesion, and agitation.¹⁰ Latrodectism can induce rhabdomyolysis and priapism¹¹ and has been implicated as a possible cause of toxic epidermal necrolysis.¹² The development of herpes zoster at the site of a black widow bite also has been reported.¹³

Although a black widow bite is often relatively inconspicuous, a review of 2144 consecutive cases of latrodectism in Australia and New Zealand have revealed reports of local pain, redness, and swelling in

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Figure 2. Red hourglass design on abdomen.

most cases.¹⁴ Regional lymph nodes often became swollen and tender within 30 minutes. The local cutaneous changes can be particularly troublesome as *Latrodectus* bites are often associated with outhouse use, and males were bitten on the genitals or buttocks in approximately 10% of cases.¹⁴

Treatment

Black widow toxicity can be long lasting. Antivenin has been reported to produce rapid relief as long as 90 hours after envenomation.¹⁵ There are other reports of dramatic clinical responses to delayed administration of antivenin.¹⁶ Other therapeutic measures include use of benzodiazepines and intravenous calcium gluconate. In one study, calcium gluconate was shown to be superior to methocarbamol.¹⁷

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