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Figure 1. Dorsal surface: variegated white, orange, brown, and black markings. Scale: each blue mark on measuring tape equals 5 mm. Specimen collected in Orange County, CA, April 2007.



Figure 2. Ventral surface: dark brown with yellow and orange-red markings.



Figure 3. *Latrodectus geometricus*, the brown widow spider, crawling on a concrete wall. Another specimen collected in Orange County, CA, October 2008.



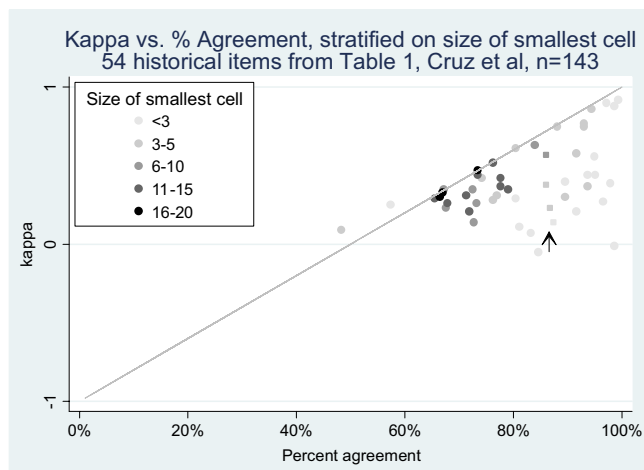
Figure 4. Comparative view of an indigenous black widow spider (*Latrodectus hesperus*; left), the spider depicted in Figure 3 (middle), and the index spider (right; colors faded from preservation in rubbing alcohol). Because of its relatively small size, the black widow specimen is probably immature, yet still has the normal adult markings. Used with permission of Jeffrey R. Suchard, MD, Department of Emergency Medicine, University of California, Irvine Medical Center, Orange, CA.

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A 52-year-old man presented to an emergency department (ED) in southern California after a spider bite to his left thumb. He had been working in his yard when he reported feeling a sharp sensation and looked down to see a patterned, brownish spider on his hand. He captured the spider and brought it to the ED in a plastic bucket. The patient's vital signs and physical examination results were unremarkable; the affected finger had no erythema, swelling, or notable bite mark. He reported only mild pain by the time of physician evaluation, approximately 2 hours after the bite. He declined opiate analgesics but was mostly concerned about identifying the spider species and determining whether antivenom therapy was indicated. The spider (Figures 1 and 2) had died either *en route* or during its capture, but was intact except for single leg dismemberment.

For the diagnosis and teaching points, see page 11.

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5. Finally, the following graph shows percentage agreement versus κ for the first 50 items in Table 1 of Cruz et al. The points are shaded to indicate how many subjects fall into the smallest cell in the 2×2 table.

(INT) A. Four lines in the table are denoted with square markers (near the arrow) on the graph (Is pain burning?

Does it radiate to the back? Does it radiate to the jaw? Does it radiate to the left arm?). Create (approximate) 2×2 tables for these 4 points. Can you explain why these tables have similar percentage agreement but varying κ s? Which do you believe is the better measure? Why do the κ s differ?

- (ADV) B. Can you comment on the relationship between the size of the smallest cell in the 2×2 table and the extent to which κ may deviate from percentage agreement?
- (INT) C. Given the problems with both percentage agreement and κ illustrated in these examples, do you think it would be better if investigators presented the 4 numbers in the inner cells of each 2×2 table, instead of reporting the percentage agreement or κ ?

Section editors: Tyler W. Barrett, MD; David L. Schriger, MD, MPH

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DIAGNOSIS:

Latrodectus geometricus (brown widow spider) bite. Five species of *Latrodectus* are found in the United States.¹ Three of these (*L. mactans*, *L. hesperus*, and *L. variolus*) are called black widow spiders, characterized by uniformly black bodies except for a red-orange ventral marking often resembling an hourglass. The red widow spider, *L. bishopi*, is found in Florida. *Latrodectus geometricus* (Figure 3), the brown widow spider, is a recently introduced species whose range in the United States is increasing.^{1,2} *L. geometricus* was first described in 1841 in South America and southern Africa, but its range has since spread. In North America, the brown widow had historically been limited to peninsular Florida.¹ Since 1980, reports have documented the brown widow's appearance in Hawaii, Japan, southern California, and Australia, associated with human activities and shipments of goods.² Within the United States, the brown widow spider has spread throughout Florida, into Georgia, South Carolina, and along the coast into Louisiana (first found in 2002), Mississippi (2005), and Texas (2007).¹

Brown widow spider bites tend to be less serious than those from black widows. Mild local symptoms were typical in a series of 15 brown widow spider bites in South Africa.³ Among 3 brown widow bites in Florida, only 1 patient's reaction was rated severe.¹ The treating physician in the current case first assumed the spider was an immature *L. hesperus*, the indigenous black widow (Figure 4). The spider was later positively identified as *Latrodectus geometricus* by an arachnologist (R. Vetter, written communication, April 2007). Physicians should not rule out the potential for systemic latrodectism solely according to the spider's lack of typical black widow markings. Serious envenomations by the brown widow would be treated identically as for black widow spider bites.

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