

CLINICAL IMAGES

Two Cases of Progressive Erythematous Lesions of the Upper Extremity

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CASE #1

A generally healthy 39-year-old male presented to his local emergency department with a progressively enlarging area of erythema on his left upper extremity for three days. The patient worked at a water treatment plant and was reaching to grab something while working in a water tower when he saw a "brown spider with thin legs" bite him on the left arm. He stated he immediately knocked the spider away and was not able to find it for identification. The patient admitted to some chills, but no fevers, nausea, vomiting, or diarrhea. The remainder of the review of systems was negative. The patient had no prior medical history and took no medications.

Physical exam revealed a localized area of erythematous tissue at the site of the bite on the left forearm, with central necrosis and a well-demarcated border. The size of the lesion was approximately 3.5 x 3.5 cm (Figure 1).

He was treated with IV ampicillin/sulbactam and underwent a surgical debridement of the area. He required a skin graft at the site and subsequently did well in follow up.

CASE #2

A 44-year-old male truck driver presented to the emergency department with a skin lesion on his arm for four days. He notes the lesion appeared after waking from sleep. The lesion progressively got larger over the past three days. The patient stated he drives and delivers freight to the entire east coast of the United States and sleeps in his truck frequently. The lesion described in this case is similar to the case above.

The patient denied any fevers, chills, nausea, vomiting. He denied any significant past medical history. He took no chronic medications. The remainder of his review of systems was negative.

On physical exam, the lesion was approximately 1.5 x 1.5 cm (Figures 2 and 3).

He was advised by the emergency department physician that he should have intravenous antibiotic therapy, but due to his employment, he stated could not stay for IV antibiotics or admission. He, therefore, was started on oral doxycycline (>95% bioequivalency to IV formulation of doxycycline) and discharged to have a follow-up in 24 hours. The patient was advised to go to the nearest emergency department on his travels at any time for any worsening, progression, fevers, etc.

QUESTION

1. Given the presentations and physical examinations in Cases 1 & 2, which of the following is the most likely the diagnosis?
 - A. Methicillin-resistant *Staphylococcus Aureus* (MRSA)
 - B. Brown recluse spider bite
 - C. Cutaneous anthrax
 - D. Black widow spider bite

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FIGURE 1:



FIGURE 2:



FIGURE 3:



ANSWER

Given the presentations and physical examinations above, which of the following is the most likely diagnosis?

Correct answer: B) Brown Recluse Spider Bite.

This diagnosis is based on patient history and careful physical examination. Attention must be paid to rule out lesions that may present similarly. MRSA lesions are more commonly associated with localized abscess formation and possible surrounding cellulitis. Cutaneous anthrax may very easily be confused with brown recluse spider bites, as they may form localized necrotic, ulcerated lesions. However, these are usually not painful. Black widow spider bites usually cause systemic symptoms within 15 minutes, which often will require immediate hospital monitoring and supportive care.

DISCUSSION

While historically known to be in the Southern and Midwestern United States, Brown Recluse spiders (*Loxosceles reclusa*) have relatives in the Americas, Africa, as well as the Middle East. They may commonly be found hiding in dark environments, such as under rocks or in caves. Typically, they prefer these environments and pose little threat to humans unless threatened or found to be within direct contact with human skin. They can also rarely be found in homes especially in dark closets, basements, under furniture, or any hidden area with little light exposure. While human bites are uncommon, they are typically found on the abdomen, arms, and neck regions of the body.¹

The initial cutaneous presentation of the bite typically depicts a painless lesion with a stinging sensation. Within six to eight hours of the bite, vasospasm causes localized ischemia, causing the lesion to become painful and pruritic, often causing the patient to sense a localized hive-like reaction. Also, there is likely to be central induration surrounded by a pale zone of ischemia and an exterior zone of erythema.

In severe cases, the erythematous region may spread with the development of central necrotic tissue. An overlying eschar forms, which eventually sloughs off after several weeks. Scars may follow the more severe lesions. Other systemic symptoms are possible, but not the focus of this discussion.

Most patients do well with recommended conservative intervention. A limited number of patients may experience delayed healing with longstanding lesions taking up to several months to resolve.²

CONCLUSION

In the majority of patients, the Brown Recluse spider bite lesion may clear spontaneously in several days without treatment. Supportive care must be provided, and includes rest, application of ice or cool compresses, compression of the lesion, and elevation of the region of the body affected, if possible. Dapsone (diaminodiphenyl sulfone), an antibiotic and anti-inflammatory agent, may be helpful in preventing severe necrosis. However, the use of dapsone is usually reserved due to the risk of myelosuppression and bone marrow failure.¹ Debridement and local skin grafting may be necessary following cessation of the acute-inflammatory reaction, but if done hastily, may be harmful. Anti-venom is not used in brown recluse bites, as these bites are more often a localized reaction as mentioned in the presentation of the two patients above.¹

Primary care physicians should take a careful history of potential exposure to the Brown Recluse Spider when patients present with isolated cutaneous lesions similar to the ones described above. Prompt recognition and surgical debridement and repair can help prevent morbidity. Primary care physicians can also educate patients that might have exposure to spiders on measures to prevent being bitten such as wearing appropriate clothing to cover skin areas when working or recreating in areas that are common spider habitats.

AUTHOR DISCLOSURES:

No relevant financial affiliations.

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