

Streaky lesions after insect bites

Monday, 01 January 2007

A 24-year-old man presented to our office because of fever and redness of his left lower extremity. The patient had been bitten at his left foot by an insect two days prior to his presentation. He could not recognize the kind of the insect. The patient used a local anti-allergic ointment at the site of the insect bite. He developed fever accompanied by rigors two days after the insect bite. Concomitantly, the patient started feeling a burning sensation on his left lower limb. Physical examination at presentation showed temperature of 38,7° C. The rest of the vital signs and of the physical examination were normal except for findings from the left lower extremity. He had an extensive area with redness, increased local temperature, and tenderness extending from the foot to the upper part of the thigh (Figure 1). On the lateral surface of the left ankle there was a small area of necrosis, at the site of the insect bite (Figure 2). In addition, there were palpable and tender lymph nodes of maximum 2 cm of diameter in the left inguinal area. Routine laboratory tests on admission were normal except for the white blood cells count [12,750 cells/il (neutrophils 81,5%, lymphocytes 11,9%)]. The rest of hematological and biochemical tests were normal.

What is the most likely diagnosis?

- A. Thrombophlebitis of the major saphenous vein
- B. Cellulitis
- C. Erysipelas
- D. Allergic reaction
- E. Lymphangitis

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The correct answer is E (lymphangitis). The distribution of the extensive erythematous lesion (i.e. its length and location) should make the clinician consider an inflammation related to a vessel. The high fever accompanied by rigors make an infectious etiology of the vascular inflammation more likely than a non infectious etiology (such as superficial thrombophlebitis). Furthermore, the absence of an indurated major saphenous vein, makes septic thrombophlebitis less likely than lymphangitis (1). This was verified by a triplex ultrasound testing of the veins of the lower extremities, which showed full patency of the major saphenous veins in both legs. In addition, the presence of an initiating lesion (insect bite area) and of tender inguinal lymph nodes makes lymphangitis quite more likely than thrombophlebitis (2).

Erysipelas (3) usually presents in less extensive distribution regarding the length of the affected area. In addition, there is usually a clear, well-demarcated margin between the inflamed and non-inflamed skin and subcutaneous tissue. The lesion in erysipelas is edematous and indurated, in contrast to the lesion of our patient. Compared to erysipelas, cellulitis affects deeper layers of the skin. However, it is usually manifested, as erysipelas does, in less extensive areas, regarding the length of the lesion, in contrast to the typical linear streaky lesion caused by lymphangitis, which was present in our patient.

The distribution of the erythema also makes the etiology of an allergic reaction to insect bite less likely, where someone would not expect streaky, lengthy lesions (4). Furthermore, the time of symptoms' presentation was not typical for allergic reaction, which usually present within 24 hours after an insect bite. Finally, high fever is not a manifestation of allergic reaction, except from a few cases in its systemic form, where other systemic signs such as hypotension and dyspnea would usually be present.

The patient received treatment with intravenous penicillin (3.000.000 IU every 4 hours) and clindamycin (5) (600 mg every 8 hours) which led to quick improvement of the infection. Specifically, the patient became afebrile within 24 hours after the administration of the antimicrobial agents. In addition, there was a gradual decrease in the intensity of the inflammatory signs of the affected area within 7 days after the start of the treatment.

Acute lymphangitis is usually due to α -hemolytic Streptococcus group A (*Streptococcus pyogenes*). Rare causes include other groups of Streptococci, *Staphylococcus aureus*, *Pasteurella multocida*, and *Spirillum minus* (rat-bite fever). The etiologic agents of acute lymphangitis are quite different than in the chronic lymphangitis, where parasitic (usually filariasis) and fungal (usually sporotrichosis) infections predominate.

Reference List

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- (4) Moffitt JE. Allergic reactions to insect stings and bites. South Med J 2003; 96(11):1073-1079.
- (5) Stevens DL, Madaras-Kelly KJ, Richards DM. In vitro antimicrobial effects of various combinations of penicillin and clindamycin against four strains of *Streptococcus pyogenes*. Antimicrob Agents Chemother 1998; 42(5):1266-1268.

Acknowledgment

1. This case was prepared for our website by Ioannis A. Bliziotis, M.D.
2. A modified version of this case will be published in the Journal "American Family Physician".