Excoriated Papules and Plaques—Part Two

Stephen Lee, MSc (Eng), MD, CIME; and Simon Lee, MD, FRCPC

A 40-year-old woman recently purchased some antique bedroom furniture including bed frame. Several weeks later, she and her husband developed a pruritic eruption on the face, arms and legs. They have difficulty sleeping at night.

Examination reveals numerous excoriated papules on the arms and legs. Some of the lesions display a linear arrangement. The couple also brought along a bug they found on their bed sheet.

Figure 1. Bug found on the bed sheet.

What is your diagnosis?

a. *Sarcoptes scabiei* (scabies mite)
b. *Cimex lectularius* (bed bugs)
c. *Pediculus humanus capitis* (head lice)
d. *Apis mellifera* (honey bee)
e. Ceratopogonidae (no-see-ums or sand flies)

Answer: Cimex lectularius *(bed bugs [BB])*

About BB

BB are highly adaptive and reproductive creatures well-suited for survival in adverse conditions. They are a common source of infestation worldwide, with a propensity for the lower socioeconomic classes of society. There is no sexual, racial nor age predisposition to attacks. However, public health issues may arise in suburban areas of concentrated dwellings and transient occupants.[1] BB belong to the Cimicidae family of the Hemiptera order of insects. All *Cimex* (bed bug) species have skin-piercing, blood-sucking mouthparts and are ectoparasites of mammals.

There is no sexual, racial nor age predisposition to attacks.

BB live in hidden crevices of the home such as floorboards, furniture, mattresses and cracks in the wall. They spend 90% of their life in hiding. They are nocturnal feeders and leave their habit to prey on hosts at night, drawn by the body heat, odour and sweat. BB are reddish brown crawling insects measuring approximately 5 mm in length with miniature wings (Figure 1). Feeding takes < 15 minutes. BB may survive up to one year on a single blood meal. A female may lay up to 300 eggs in her lifetime.

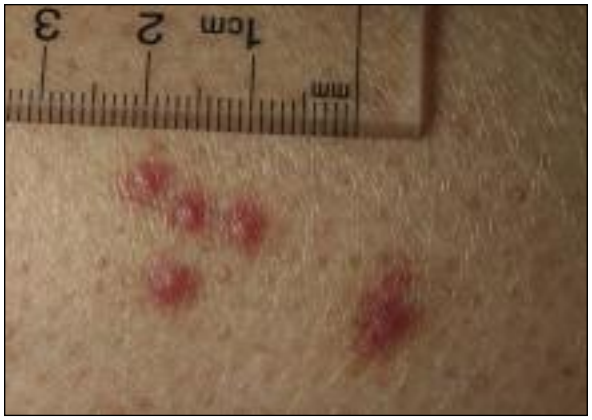

Figure 2. Lesions distributed in groups of three.

Physical examination reveals red macules and papules with focal excoriation or hemorrhage. Often the lesions are distributed in a linear pattern in groups of three, the so-called "breakfast, lunch and dinner" pattern (Figure 2). In order to facilitate feeding, BB inject many biologic substances including anticoagulants and digestive enzymes in their saliva. These proteins may cause localized allergic skin reactions including erythema, papular urticaria and ecchymosis. Complications include severe hypersensitivity reaction, cellulitis and lymphangitis.

The diagnosis is based on detailed history and clinical findings. Nocturnal pruritus is an important symptom. Patients may require a thorough search of their bedroom and surrounding environment to look for physical evidence of the insect. Specimens found may be sent in a dry container to a microbiology lab for identification. The major differential diagnosis includes scabies infestation. BB lesions tend to occur on exposed areas of the body including face and neck, which is unusual in scabies. Additionally, patients may find insects on the bed at nighttime during feeding. Other dermatologic conditions which the clinician should consider include allergic contact dermatitis, dermatitis herpetiformis and pemphigus vulgaris.

Patients are often extremely distressed and anxious. They should be reassured that the prognosis is excellent. The use of insecticides such as permethrin and diethyltoluamide are effective in the eradication of infestation and prevention of recurrence. Elimination of their natural habit and hiding places is of paramount importance. A pest control company may be required.

Patients are often extremely distressed and anxious. They should be reassured that the prognosis is excellent.

Management of symptomatic cutaneous lesions include topical steroids for relief of pruritus and antibiotic creams to prevent secondary infection. Oral antihistamines and antibiotics may be required for more severe cases and secondary infection. BB may theoretically transmit blood borne infections including Hepatitis B (although HIV is unlikely), therefore, patients at risk should be considered for testing. Dx

Dr. Stephen Lee is a Family Physician; a Medical Consultant to several private industrial firms; and a Certified Independent Examiner, Edmonton, Alberta.

Dr. Simon Lee is a Dermatologist, Richmond Hill, Ontario.

Resources
1. Toronto Public Health: Bed Bug Project.
2. Ter Poorten MC, Prose NS: The Return of the Common Bedbug. Pediatr Dermatol 2005; 22(3):183-7.