A Case of Cat Scratch Disease Diagnosed by Serologic Tests Specific for *Bartonella henselae*

Sir,

Cat-scratch disease (CSD) is a benign, usually self-limited infection, characterized by a primary papulopustular skin lesion at the site of the scratch and is usually accompanied by an enlarged, localized lymph node. Traditionally, the clinical diagnosis of CSD was made when three of the following four criteria were met: (i) cat contact confirmed by the presence of cat scratch or primary skin lesion, (ii) other causes of lymphadenopathy ruled out, (iii) a positive CSD skin test found, and (iv) characteristic histopathologic features in a lymph node biopsy specimen present. However, the CSD skin test is still not standardized; it is not readily available everywhere; it is unreliable; and such skin testing is seldom used today. Moreover, a histopathological analysis of the lymph node requires invasive procedures. *Bartonella henselae* (Bh) is a newly recognized causative agent found in the majority of CSD cases. A culture of Bh from CSD patients has proved to be very difficult and therefore cannot be used in a routine diagnosis of CSD. Recently, several studies describing the detection of Bh DNA in lymph node biopsy specimens by polymerase chain reaction (PCR) have been reported (1, 2). Such a PCR test for Bh DNA would thus be useful in the diagnosis of CSD; however, a lymph node biopsy is still required. Many investigators have suggested the possibility that a positive serology finding by an enzyme immunoassay (EIA) test could replace both a surgical biopsy of the lymph node and skin testing for establishing the diagnosis of CSD (3, 4). Here we present a patient with CSD who was diagnosed based on the use of serologic tests specific for Bh.

A healthy 39-year-old man presented with a 2-week-old painful mass in his right axilla. Soon after the mass appeared, he developed headaches, general malaise and a low-grade fever lasting 1 week. The physical examination disclosed a tender fluctuant lymph node measuring 3 cm in the right axilla and an erythematous papulopustular, centrally crusted, skin lesion on the base of the right 5th finger (Fig. 1). The skin lesion had been present for about 3 months, and initially appeared as a pustule. The patient had frequently played with his pet kitten, and his right 5th finger had been scratched by the kitten. The skin lesion thereafter appeared at the site of the scratch on his finger. A 4-mm punch biopsy specimen of the erythematous papulopustular skin lesion showed an ulceration of the epidermis, crust formation, and focal dermal necrosis with polymorphonuclear cells and macrophages, which were consistent with but not conclusively diagnostic for CSD. A cytologic analysis of the aspirate from a fluctuant lymph node demonstrated no malignant cells. Cefpodoxime proxetil, 200 mg daily, was thus administered, but the patient discontinued it after 3 days because he found it to be ineffective. Over the next 2 months the primary skin lesion and axillary lymphadenopathy gradually resolved without any complications. A serum sample from the patient 2 weeks after the initial presentation was analysed using EIA for Bh-specific antibodies. Anti-Bh IgM (17 units) and Anti-Bh IgG (19 units) were positive (cutoff value for probable infection, >15 units). Based on the positive serology results, a final diagnosis of CSD was thus made in this patient.

Fig. 1. A primary skin lesions at the site of cat scratch on the base of the right 5th finger.

Before developing a serologic test for Bh-specific antibodies, the diagnosis of CSD primarily depended on the presence of characteristic clinical features. However, atypical cases can cause diagnostic problems and often require extensive clinical and laboratory investigation. The use of a serologic test specific for Bh may help to avoid the need to perform invasive procedures in these patients. The demonstration of Bh-specific antibodies may be useful in most cases, although certainly not in all, because some patients produced high levels of both IgG and IgM, while others produced only high levels of IgM, and a few patients produced only low levels of antibodies (5). Finally, we believe that in patients with clinically suspected CSD the detection of Bh-specific antibodies in the serum by EIA is useful in establishing the diagnosis. Such a serologic test can also be done by the primary care physician to confirm the diagnosis of CSD.

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Accepted May 7, 1998.

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 ISSN 0001-5555