Enzyme-Linked Immunosorbent Assay, Not Agglutination, Is the Test of Choice for the Diagnosis of Neurobrucellosis

SIR—Oliveri et al. [1] described a case of polyradiculoneuropathy caused by neurobrucellosis in a man whose CSF and hematological findings were misleading. These authors reported that serologies for *Brucella* (a Wright agglutination test for IgG and a Coombs test of both blood and CSF) were repeatedly negative. However, *Brucella melitensis* was isolated in CSF cultures.

Negative results of agglutination tests for patients with brucellosis, especially those with neurobrucellosis, are not unusual. Our studies [2–12] of a large number of patients with neurobrucellosis have shown that agglutination tests had poorer sensitivity than ELISA and immunofluorescence assay and proved that ELISA is the most reliable test in such complicated cases, especially for patients with chronic brucellosis. For example, in one study of 10 patients with neurobrucellosis, *Brucella*-specific antibodies were detected with use of ELISA in the CSF of all patients, while agglutination tests detected antibodies in only six CSF specimens from these patients [3]. Thus, ELISA is the test of choice when brucellosis is clinically suspected, even when agglutination tests are negative.

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Clinical Infectious Diseases 1997;25:942

1058–4838/97/2504–0039$03.00

Reply

SIR—We appreciate the interest of Dr. Araj in our study [1]. He states that ELISA is the method of choice for the diagnosis of neurobrucellosis. However, some points of his comment should be addressed. Agglutination tests remain the standard method for diagnosing brucellosis [2], and when these tests are negative, the Coombs test is the recommended procedure [2]. In our study we performed both tests on blood and CSF; the results were repeatedly negative [1]. Then we decided to test CSF samples with a *Limulus* amebocyte lysate (LAL) assay (Chromogenix, Mölndal, Sweden), a nonserological, timely, and extremely sensitive (although nonspecific) tool, to establish the infectious nature of the disease in our patient. The LAL test indicated the presence of gram-negative endotoxin in the CSF, and CSF cultures yielded colonies of *Brucella* [1].

We agree with Dr. Araj that ELISA is the most sensitive of the serological tests for *Brucella.* Nevertheless, the agglutination test and the Coombs test have been used for many years, correlate well with clinical manifestations of brucellosis, and remain the standard against which other tests must be compared [3]. As stated by Young in a recent review [2], ''More experience is needed before it [ELISA] replaces the SAT [serum agglutination test] as the test of choice for brucellosis.''

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Clinical Infectious Diseases 1997;25:942

1058–4838/97/2504–0040$03.00