Brucella sp. antibodies, despite falling to low levels, can remain measurable after recovery from acute brucellosis (1). Recently, several studies have shown the persistence of Brucella sp. DNA in both chronic brucellosis patients and asymptomatic subjects with a history of brucellosis (2–4, 6). However, to our knowledge, the association between serum antibodies and Brucella sp. DNA has not been investigated.

We screened a cohort of 38 subjects with a well-documented history of brucellosis for the presence of Brucella melitensis DNA and Brucella antibodies. For that purpose, we tested both a quantitative real-time PCR (qPCR) assay (2) and an immunocapture-agglutination test (Brucellacapt; Vircell SL, Granada, Spain) that was performed as specified by the manufacturer. The Brucellacapt test has been described as offering results comparable to those of the Coombs anti-Brucella test, the most often used technique for the diagnosis of chronic brucellosis (5).

Twenty-seven (71%) subjects were men, and 11 (29%) were women. The mean age was 49 ± 14 years (range, 26 to 83 years). The diagnosis of acute brucellosis was made between 3 and 33 years previously, according to one or both of the following criteria: isolation of Brucella spp. from blood or any sample of body fluid or tissue and the presence of a compatible clinical picture together with the demonstration of specific antibodies at significant titers (Wright test titer of ≥1:160 or Coombs anti-Brucella test titer of ≥1:320) or seroconversion.

According to their clinical course after the initial episode, subjects were divided into three groups. Group A consisted of 10 (26%) focal disease subjects. Group B comprised 8 (21%) nonfocal disease subjects complaining of nonspecific symptoms, such as fatigue, malaise, arthralgia, and/or myalgia. The remaining 20 (53%) subjects were asymptomatic (group C). Chronic brucellosis patients included all patients diagnosed with focal disease and those whose symptoms had persisted for more than 1 year after the initial episode. Results are expressed as means ± standard deviations. P values less than 0.05 were considered statistically significant.

We found an association between being B. melitensis DNA positive and being antibody positive. Among the 22 subjects with detectable B. melitensis DNA, 19 (86%) subjects had Brucella antibodies, while among the 16 subjects without B. melitensis DNA, Brucella antibodies were detected in 7 (44%) (P = 0.005; chi-square test). In the case of the asymptomatic subject group, the DNA-antibody concordance was not statistically significant (P = 0.264; two-tailed Fisher’s exact test).

The distribution of DNA-antibody results by group is shown in Table 1.

The chronic brucellosis patients harboring B. melitensis DNA are more likely to show a seropositive sample than the remaining subjects. These findings suggest that after the initial infection, either the viable Brucella or its antigenic and structural components persist in the host and may have diagnostic and pathogenic implications.

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We have no conflicts of interest.

REFERENCES

TABLE 1. Distribution of the qPCR and Brucellacapt results from 18 patients with chronic brucellosis and 20 asymptomatic subjects

<table>
<thead>
<tr>
<th>Brucellacapt titera</th>
<th>Focal disease patients (n = 10)</th>
<th>Nonfocal disease patients (n = 8)</th>
<th>Asymptomatic subjects (n = 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients/subjects with qPCR blood/serum resultb</td>
<td>+/−</td>
<td>+/+</td>
<td>−/+</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>80</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>160</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>320</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>≥640</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

a Reciprocal titers are shown.

b +, positive; −, negative.

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