

Are we taking antibody cross-reactivity into consideration? Comment on the first case report of *Bartonella henselae* sacroiliitis[☆]



¿Tenemos en cuenta las reacciones serológicas cruzadas? A propósito del primer caso de sacroileítis por *Bartonella henselae*

Dear Editor,

We read with interest the article recently published by Esteban Araos-Baeriswyl et al.¹ that presented an unusual case report of sacroiliac involvement associated with *Bartonella henselae* (*B. henselae*). Despite the fact that *Bartonella* spp. infections and *B. henselae* infections in particular are responsible for a broad and growing spectrum of clinical manifestations, this diagnosis caught our attention and we would like to share a number of considerations. This case report concerned a female patient with community-acquired pneumonia (CAP) of presumed bacterial aetiology, with mild hypertransaminasaemia and splenomegaly, whose only epidemiological history of interest was contact with cats. The aetiology of CAP is very broad and one of the microorganisms to consider is *Coxiella burnetii* (*C. burnetii*), causative agent of Q fever.² It is found all over the world and is responsible for a wide variety of clinical manifestations, ranging from asymptomatic or largely asymptomatic manifestations to flu syndromes with or without lung involvement, febrile hepatitis, endocarditis and osteitis-arthritis, to name but a few.^{2,3} As with *Bartonella* spp., *C. burnetii* infection is usually diagnosed using serological techniques, with indirect immunofluorescence being the standard technique used. However, one of the limitations of this technique is cross-reactions with other infectious agents. In fact, cross-reactivity between *C. burnetii* and *Bartonella* spp. is very common.⁴ Moreover, osteoarticular manifestations caused by *C. burnetii* are not unusual⁵ and certainly more common than with *B. henselae*. Despite the fact that *Bartonella* spp. give rise to a wide range of clinical manifestations, they are not usually causative agents of CAP and the few cases reported in the literature are associated with lymphadenopathy complications caused by cat scratch disease.⁶ In light of the above, and armed with the data provided by the authors, in our opinion it is a little risky to make the definitive diagnosis of *B. henselae* sacroiliitis. On the one hand, the microorganism was not cultivated or amplified using molecular biology techniques, and a simple antibody titre against *B. henselae*, outside of the appropriate clinical context, is not sufficient to confirm infection by this agent. Furthermore, determining antibodies against *Bartonella* spp. does not distinguish between the different species of *Bartonella*. On the other hand, they asked the question: what is the prevalence of antibodies against *Bartonella* spp. in cat owners in the patient's autonomous community? Its prevalence has been found to be high in Spain and in other parts of the world where it has been studied.⁷ Another question that occurred to us and is the main reason for

our letter is the following: do you not think that the patient may have had *C. burnetii* CAP with secondary osteitis and that the serological results obtained were due to a cross-reaction between the two microorganisms? Both are zoonotic agents found all over the world. *C. burnetii* is considered an emerging zoonosis in Chile. A recent article reported an estimated seroprevalence of 3%, peaking at 5.6% in adults over the age of 65 years.⁸

In conclusion, patients infected with *C. burnetii* or *B. henselae* may exhibit highly varied clinical manifestations that are difficult to distinguish, as well as a history of close contact with cats or other animals. In both, the laboratory diagnosis is primarily based on serological techniques and cross-reactivity between the two is common. In any case, some clinical sequences are more logical than others and everything should be assessed in the proper context.

Funding

No funding was received for this project.

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<https://doi.org/10.1016/j.eimc.2021.06.002>

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DOI of original article: <https://doi.org/10.1016/j.eimc.2021.06.003>.

☆ Please cite this article as: Pellejero G, Oteo JA. ¿Tenemos en cuenta las reacciones serológicas cruzadas? A propósito del primer caso de sacroileítis por *Bartonella henselae*. *Enferm Infecc Microbiol Clin*. 2021;39:535.