Reviewer's report

Title: A case report of misdiagnosed Murine typhus infected patient presented with multiple cerebral infarctions and hemorrhage

Version: 3 Date: 18 May 2015

Reviewer: Marina Eremeeva

Reviewer's report:

Thank you very much for providing additional details and clarifying the history of the case described in the manuscript.

Please, address the following issues to clarify some discrepancies throughout the text of the revised manuscript.

Background: Please, update the references regarding the prevalence of endemic typhus in China. Although, the review published by Fan et al. in 1987 was a state of the art paper at the time, it is obviously quite outdated and the current status needs to be provided.

Case presentation: Please, clarify and provide a table or chart of patient symptoms so reader can better understand the timeline of events and symptoms. As written it is not very clear if this patient was seen first on April 10 and treated symptomatically w/o success, and then he was admitted to neurology on April 24. Then only on the third day after hospitalization a rickettsial disease was suspected and appropriate antibiotic therapy was started (17 days after onset?), and blood was tested for anti-rickettsial antibody 2 weeks after onset. If the latter is true, why was treatment not started earlier?

Lines 81-87: It is indicated that this patient had an eschar on his leg, and this was used a clue to start antibiotic therapy. However, an eschar is not a typical symptom for murine typhus, but would rather be indicative of a spotted fever group infection. Please, provide necessary comments in the discussion section (therapy would be the same even if which rickettsial etiology was incorrect).

Lines 94-95: Please, clarify what antigens the antibody titers were detected to? It is stated that 4 different antigens were used for testing, but which ones had the antibody response detected?

Lines 98-99: Please, submit nucleotide sequence of the fragment amplified from the patient blood to GenBank and include the accession number in the manuscript. Even if it is identical (as claimed by the authors) to the reference sequence, it is critical to provide a sequence of this unique voucher sample for however many nucleotides were obtained. Please, provide the reference or primer sequences for the method used for PCR detection and amplification.

Table: Please, indicate the exact days when each test was performed so the
timeline is clearly seen. Why were the results of testing with rickettsial antigens not included?

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

No conflict of interests