Reviewer’s report

Title: Sarcina ventriculi in blood: the first documented report since 1872

Version: 3 Date: 22 November 2012

Reviewer: Martin Laass

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There are some major compulsory revisions:

1. Sarcina ventriculi was identified by 16S rRNA:
"Using the 16S rRNA gene sequencing Sarcina ventriculi was identified." The whole case report based on that sentence. It is not said which part of the 16S rRNA was amplified, which reference strain was used, no PCR products are shown, and so on. All details should be given here to convince the reader they indeed have identified Sarcina ventriculi since diagnosis by PCR can easily be false positive.

2. It remains unclear, if Sarcina was also identified by its morphology. Is the picture with Sarcinae really from the patient?

3. The patient suffered from vomiting and diarrhoea. But: "Tests for viral enteritis or specific hepatitis pathogens were not done because her clinical presentation was septicaemia. (Hepatitis A is not an endemic infection in our country)." But in a case with diarrhoea this is essential to look for viruses.

They write: "Faecal pathogens or Clostridium difficile were not recovered.": Cl. difficile is also a pathogen, so avoid the "or".

The authors write that faecal pathogens were not recovered but they haven't looked for the most common ones, viruses? So it remains absolutely unclear if diarrhoea was not caused by virus infection. Adenoviruses for example can cause also fever and high CRP.

There is no discussion about the importance of the finding of Sarcinae ventriculi in this patient. Are the symptoms really caused by Sarcinae?

4. What are the other pictures for? Are the pictures with Candida parapsylosi and Finegoldia magna from the patient? Why is a picture of Sarcinae from the stool of another patient shown? It has nothing to do with the case report itself.

5. They finish the report by "We hope that the questions raised a century ago are finally resolved." It is not understandable which questions they mean.

There are also some minor compulsory revisions:

6. "This is the first documented report of septicaemia caused Sarcina ventriculi in a susceptible person." It is not clear why this person is a susceptible person.

7. There is a kind of disarrangement in the case report itself: "The abdominal
ultrasound examination, thyroidal functions were normal. Laboratory values are given in the first part, what has thyroid function to do with abdominal ultrasound.

8. The quotation of the second article from 1872 (from Bastian) doesn't make much sense. There are also two errors in the reference (see below).

9. Abbreviations like "aP-Lakt 3,40 mmol/l" or GT must be explained.

10. There are a lot of mistakes in the text (there are some more and reading of the report is impeded):
    - page 2, line 6: "Sarsinae" correct: "Sarcinae"
    - page 2 line 16 there is a by ...
    - page 3, line 17: the article is quoted wrong: "...the co-called Sarcina ventriculi" (correct: so-called... ventriculi...)
    - page 4, line 1: phylogenically, correct: phylogenetically
    - page 5, line 14: hyperglygemic, correct hypergycemic

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

No competing interests to declare