Reviewer’s report

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

Version: 3 Date: 15 November 2012

Reviewer: Dora Lam-Himlin

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The authors report a very compelling case of culture-proven Sarcina septicemia. This is a particularly interesting report, since Sarcina organisms have not been reported in the blood in the recent literature, but have been associated with significant gastrointestinal symptoms and disease.

Major Compulsory Revisions

1. The history of Sarcina is very interesting, and given the findings of deadly abomasal bloat in the veterinary literature, as well as the presence of emphysematous gastritis documented in the human literature, this patient’s gastrointestinal (GI) presentation with extensive vomiting warrants comment. A recent human series (see reference below and attached), documents the presence of Sarcina organisms in the upper gastrointestinal tract, and concludes that the organism likely causes disease by utilizing sites of pre-existing mucosal injury (erosions and ulcers, anastomotic sites) to further cause injury and disease.

The patient reported in this case presented with extensive vomiting and other gastrointestinal symptoms. In the absence of other possible sources of hematologic infection (the authors have excluded IV drug use, etc.), it seems reasonable to consider that the gastrointestinal tract may have been a source of entry for this organism into the blood stream—an important piece of the puzzle in this patient’s disease process. Would the authors kindly comment on this.

2. The conclusion for this case report of “the questions raised a century ago are resolved” is weak and does not do justice for this thought-provoking case. For example, the classification and elucidation of Sarcina have been well established since the time of Ferrier’s report, so these questions raised by Ferrier have been resolved prior to this case report.

However, this is an important case report specifically because there has been a recent resurgence in the frequency of Sarcina in the human gut (again, reference below), and this case report demonstrates that septicemia can result from GI involvement, a finding not previously documented. I believe an appropriate conclusion for this article would be that “This case report emphasizes that septicemia can be a serious sequela of Sarcina, in addition to the previously reported emphysematous gastritis and sarcinous vomiting. This case highlights the importance of recognizing the clinical presentation (intractable sarcinous
vomiting) for a potentially serious and deadly Sarcina infection. In addition, given the severity of disease, recent resurgence of Sarcina seen in the human gut, and the gut being a known access point for hematologic invasion, increased recognition of this entity is important.

Reference

Minor Essential Revisions
1. Regarding the figure legend demonstrating the comparative size of Sarcina to other organisms, it would be useful to state the size range of Sarcina (microns).
2. Page 2, Line 6: delete “an”
3. Page 2, Line 11: should read “48-year-old”
4. Page 2, Line 12: delete “was”
5. Page 2, Line 16” should read “caused by Sarcina”
6. Page 3, Line 2: Should this maybe read “college” instead of “colleague”? 
7. Page 3, Line 7: delete “a”
8. Page 3, Line 9: should read “7-10 days, or in”
10. Page 3, Line 19: change “At those days” to “At that time,”
11. Page 4, Line 16: should read “from the blood”
13. Page 5, Line 2: should read “48-year-old”
14. Page 5, Line 6: should read “symptoms, and her”
15. Page 5, Line 9: expand “iv” to “intravenous”
16. Page 5, Line 9: change “Nobody from” to “None of”
17. Page 5, Line 10: change 51mg/l, she” to “51mg/l, and she”
20. Page 5, Line 15” change “examination, thyoidal functions were” to “examination and thyroid function tests were”
21. Page 5, Line 18: should read “septicaemia, and because Hepatitis A is not endemic in this region.”
Discretionary Revisions

1. If possible, please comment on the quality of the vomiting. Sarcina organisms cause such a characteristic bubbly and frothy vomit, owing to the gas-forming fermentative properties of the organism, that this vomit was termed “Sarcinous vomit” with its earliest descriptions in the 1800’s. It would add immensely to your story, if there are any clinical notes describing the quality of the vomit (whether bilious, stercoraceous, frothy, etc.).

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare I have no competing interests.