

## Response to the reviewer A

### Comments:

1. Zhang et. al reported a fascinating case of *Listeria monocytogenes* brain abscess; however, I have major reservations regarding what new information this brings to the medical literature.

**Reply:** Indeed, there have been some case reports of *Listeria* brain abscesses. The characteristics of this case are that the patient's initial symptoms were numbness and weakness of the right upper limb, accompanied by aphasia, with no fever. The patient was once diagnosed with acute cerebral infarction. We think this can be a warning to clinical work. For those patients with hemiplegia or aphasia who have high-risk factors for infection, we should consider the possibility of central nervous system infection. Changes in the text: We have written the importance and innovation of the article in the first paragraph of the discussion. See Page 4, line 19-23.

2. Title: Consider a synonym for "huge"

**Reply:** We thank the reviewer for pointing out this. Based on your comments and other reviewers' comments, we decided to delete "huge" in the manuscript. Changes in the text: We delete the "huge" in the title. (see Page 1, line 1)

3. Introduction: Page 1, Line 33-35: "*Listeria* is genus of gram-positive, facultatively anaerobic, rod-shaped bacteria with characteristic tumbling motility under microscopy and may occur as single cells or in short chains". I do not believe this information is relevant/innovative.

**Reply:** Thanks for your valuable comments and suggestions. Based on your comments, we reviewed the relevant literature again, made further revisions to the description here, and updated the references.

Changes in the text: we have modified our text as advised. (see Page 2, line 5-6)

4. I would focus the introduction in saying why selected host are at higher risk for bacteremia and CNS infection (and why meningoencephalitis but not so much brain abscess).

**Reply:** Risk factors affecting the survival and function of macrophages may increase susceptibility to *L. monocytogenes* in hosts. The patient in this case had a history of type II diabetes and a 20-day course of oral prednisolone (40 to 25 mg/day) due to iridocyclitis a month and a half ago. The patient's immune function is impaired. And the patient had a tooth extraction one month before the onset of symptoms. Because of this, we think this patient has high-risk factors for bacteremia and CNS infection.

Brain abscess is a further progression of meningoencephalitis, so brain abscesses are

less common. *L. monocytogenes* was shown to penetrate the intestinal mucosa and enter the blood circulation following oral infection. *L. monocytogenes* can invade the bloodstream via intestinal infection, cross the blood-brain barrier and invade the central nervous system. The epithelium of the choroid plexus allows this bacterium to gain access to the central nervous system (CNS) to induce meningitis, which is the most common CNS symptom of listeriosis. *L. monocytogenes* may reach the brain parenchyma via capillary endothelial cells and cause brain abscesses. The detailed pathogenesis can be seen in the Discussion.

Changes in the text: We add the reason why selected host are at higher risk for bacteremia and CNS infection in introduction. (see Page 2, line 12-13, line15)

5. *Case description: Page 5, Line 8-11: Please rephrase this sentence because it is difficult to follow.*

**Reply:** Thank you for pointing out this. We have made some modifications as advised.  
Changes in the text: See Page 2, line 24-26.

6. *Line 25-27: Repetitive*

**Reply:** Thank you for your comments. We removed the duplicate parts.  
Changes in the text: See Page 3, line 18-20.

7. *Line 37: Why meropenem?*

**Reply:** After a needle biopsy, we confirmed the diagnosis of a brain abscess was correct, but it took about 10 days to wait for bacterial culture results and drug susceptibility results, and we first empirically used the broad-spectrum antibiotic meropenem until culture results were available. After getting the susceptibility results, we switched the antibiotic to oral trimethoprim/sulfamethoxazole.

Changes in the text: See Page 4, line 2-7.

8. *Discussion: I would recommend starting your discussion saying why your paper is important/innovative. The first paragraph seems like another introduction.*

**Reply:** Thanks for this comment. Based on your comments, we have written the importance and innovation of the article in the first paragraph of the discussion.  
Changes in the text: See Page 4, line 20-24.

9. *Page 3, Line 18-22: consider moving this to the introduction*

**Reply:** Thank you for your comments. We move this part to the introduction as advised.  
Changes in the text: See Page 2, line 15-20.

## **Response to the reviewer B**

### ***Comments:***

1. *This is an interesting case of a patient presenting with focal neurologic deficits related to brain abscess caused by Listeria monocytogenes. You gave a good*

*description and discussion of the case. However, you did not explain the rationale for choosing to treat your patient with meropenem even when the organism was susceptible to ampicillin. In the attached copy of your manuscript, I have included comments and recommended edits. Consider revising your manuscript to address those comments.*

**Reply:** Thank you so much for your affirmation and comments of this study. We made the corresponding corrections in the manuscript based on your comments in the PFD file.

After a needle biopsy, we confirmed the diagnosis of a brain abscess was correct, but it took about 10 days to wait for bacterial culture results and drug susceptibility results, and we first empirically used the broad-spectrum antibiotic meropenem until culture results were available. After getting the susceptibility results, we switched the antibiotic to oral trimethoprim/sulfamethoxazole. We have modified other parts in the manuscript as your comments.

Thank you again for your detailed modifications which were available for our manuscript.

Changes in the text: See Page 4, line 2-7.

### **Response to the reviewer C**

#### ***Comments:***

*1. It is well structured and the case is a good addition to the literature. The only thing I would recommend to change is the word Huge in the title. The lesion was 3cm in diameter, that is not exactly "huge" and in my opinion there is no need to emphasize the size of the abscess with this exact word.*

**Reply:** We thank the reviewer for the affirmation and comments of this study. Based on your comments, we decided to delete "huge".

Changes in the text: We delete the "huge" in the title. (see Page 1, line 1)