
Peer Review File

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Reviewer A

1. PNS is a very rare disease and is even rarer in that it was caused by occult breast cancer.

Have you done a detailed study on PNS?

For example, have you tested for anti-neural antibodies?

And, did you detect any CD4 cell or CD8 cell infiltration in your pathology?

Reply: Thank you very much for your precious comments. PNS is a very rare disease and even rarer which was caused by OBC. For this case, we have done some detailed studies on PNS. We have reviewed a lot of literature and done a lot of related laboratory tests. For example, we tested the autoantibodies in the blood such as antinuclear-nuclear antibody, anti-Sm antibody, and the onconeural antibodies, but the results are all negative. In the pathology, we didn't detect the CD4 cell or CD8 cell infiltration. This is also a pity for us. In the future, we will do relevant tests for patients.

Changes in the text: We added the blood tests in the text. (see page 2, line 49-54)

2. Also, briefly describe the treatment of PNS.

Reply: Thank you for your valuable comments. We briefly described the treatment of PNS in the text.

Changes in the text: We added the treatment of PNS in the text. (see page 4, line 86-90)

3. Does removal of a malignant tumor cure many of them?

Reply: The removal of a malignant tumor can be beneficial for the PNS, especially if instituted during the time of symptom progression rather than after deficits have been fully established. If the neurologic syndrome isn't relieved after treatment, it may be due to irreversible neuronal damage that occurred before the diagnosis was made and treatment begun.

Changes in the text: We added some data in the text. (see page 4, line 88-90)

Reviewer B

1. The author should describe the findings of the patient's mammography no matter what was it, not just said that the axilla mass was not scanned by the mammography.

Reply: Thank you very much for your valuable comments. As we all know, mammography is very important for the diagnosis of breast diseases. For this patient, the mammography found

no masses and signs of malignant calcification in the breasts.

Changes in the text: We added the results of mammography in the text. (see page 2, line 56-57)

2. Breast MRI is an important tool for evaluating occult breast cancer. The author should explain why this patient didn't receive a breast MRI before surgery.

Reply: Thank you for your precious comments. Breast MRI is a valuable tool for evaluating breast diseases especially for the OBC. For this patient, we made an appointment for the enhancement breast MRI, but the appointment was about a month later. Then the patient did a whole-body PET-CT and needle biopsy of the axilla mass. After the biopsy, the patient wanted to do the surgery as soon as possible, so there was no MRI data before surgery. This is also a pity for this case. If there is another patient like this, we will definitely find a way to get the patient to do MRI before surgery.

Changes in the text: no.

3. The results of electrophysiological examinations should be described in more detail, not just "electromyography demonstrated neurogenic injury".

Reply: Thank you for your valuable comments. The patient did the electromyography and sural nerve biopsy tests. EMG examination suggested peripheral nerve injury, mainly involving sensory nerves, axonal myelin injury, mainly axonal injury, and the sural nerve biopsy considered the pathological changes of sensory neuron neuropathy.

Changes in the text: We added some data in the text. (see page 2, line 39-41)

4. Onconeural antibody is essential in the diagnosis of paraneoplastic neurological syndrome. I recommend that the author supplement more information about that to robust the diagnosis of PNS.

Reply: Thank you very much for your valuable comments. PNS is a very rare disease and we have done some detailed studies on PNS. Onconeural antibody is essential in the diagnosis of PNS but not all the PNS patients had positive onconeural antibody. For this patient, we did some antibody tests, such as antinuclear-nuclear antibody, anti-Sm antibody, and the onconeural antibodies including anti-Hu, Ri, Yo, CV2, PNMA2, amphiphysin, but the results were all negative.

Changes in the text: We added the antibody tests in the text. (see page 2, line 52-54)