Peer Review File

Article information: https://dx.doi.org/10.21037/acr-23-104

Reviewer #A ： This is an interesting and well written case. As rightly mentioned by the authors, breast cancer is a common malignancy and metastatic disease precludes the curative intent treatment. It is interesting to see cure like outcome with metastatic disease. Authors acknowledged the need for further case series and data to validate. Keep up the good work.

Reply: We are very honored to receive your approval, and we will continue to work hard.

Reviewer #B

Comment 1. Lines 57-59：The prognosis of metastatic breast cancer varies greatly depending on HER2 status and hormonal status, so please describe the data for metastatic HER2-positive breast cancer.

Reply: As you said, the prognosis of metastatic breast cancer is different for different molecular types. We added the data for metastatic HER2-positive breast cancer. (see Page 5, line 57-58)

Comment 2. Lines 118-120：The PHEREXA trial (PMID: 28437161) denied any additional benefit of pertuzumab in trastuzumab-resistant cases of breast cancer. Please explain why you chose trastuzumab monotherapy as maintenance therapy for this case, along with supporting data.

Reply: We consider the patient's current curative effect remarkable (the primary lesion has reached PCR, and the metastatic lesions have disappeared on imaging examination). Furthermore, there is no evidence of drug resistance. We also refer to the Chinese Society of Clinical Oncology Breast Cancer (CSCO BC) guidelines on "Recommendations for adjuvant therapy for HER2-positive patients after neoadjuvant therapy", which recommends continuing dual-targeted anti-HER2 therapy or switching to trastuzumab single-targeted maintenance therapy for patients who have achieved PCR after using trastuzumab and pertuzumab anti-HER2 therapy. So we offered the patient two choices: to continue dual-target or to switch to single-target. The patient finally chose single-target maintenance therapy. The main reasons for recommending single-target therapy are as follows: the patient's current efficacy is remarkable, there is no evidence of drug resistance in the systemic examination, and it is also in line with the recommendations of the CSCO BC guidelines; in the later stage, once resistance occurs, it can also be added with double-targeted therapy with pertuzumab; and at the same time, combining with the patient's economic situation, it saves the patient's cost.

Comment 3. Lines 124-126：The worst prognosis is for brain metastases. Compared to which metastases, liver metastases have a poorer prognosis?

Reply: We appreciate your suggestions. We should be more specific on this. Bone, lung, liver, and brain are the most frequent sites of distant metastasis in breast cancer. Among them, the prognosis of liver metastasis is poorer, and the overall survival rate is lower than that of bone metastasis and lung metastasis.

We have added some data as advised (see Page, line 131-133)

Comment 4. Lines 159-161：You should add the results of the JCOG1017 trial to the discussion section.

Reply: As you suggest, this study is well worth discussing. The JCOG1017 phase III randomized controlled clinical trial is the last large phase III randomized controlled prospective clinical study in patients with *de novo* stage IV breast cancer, after the TATA study, the MF07-01 study, the ABCSG-28 study, and the ECOG-ACRIN E2108 study. Moreover, the number of enrolled cases in the JCOG1017 study ranked first among the five studies. The JCOG presented its results at the 59th Annual Meeting of the American Society of Clinical Oncology (ASCO) in June of this year. We have added this part to the text as advised (see Page 10-11, line 177-185)

Comment 5. Line 202：Nutrients. 2022;14.→ Nutrients. 2022;14:2376.

Reply: We thank the reviewer for the reminder. we have modified our text as advised (see Page 12, line 220).

Comment 6. HER2-positive breast cancer with liver metastases may show cystic transformation of liver metastases during the clinical course. PET may be more appropriate than CT to assess response to treatment (PMID: 37152012). You should describe in the clinical presentation whether or not PET evaluation was performed in this case. Also, please include a discussion of the advantages and disadvantages of each of the evaluation methods, PET and CT.

Reply: As you suggest, PET is more appropriate than CT for evaluating treatment response. We have also recommended this examination for the patient. However, the patient did not opt for this examination due to financial constraints because PET is a costly test in our country. Furthermore, I have stated in the case presentation that the patient failed to undergo a PET evaluation (see Page 7, line 97-106).
The advantages and disadvantages of each of the evaluation methods, PET and CT.

（1）The CT image is clearly defined, has high resolution, has a clear anatomical relationship, and has a clear lesions visualization. Moreover, it is cheap, easy to examine, painless, and non-invasive.

（2）PET is highly sensitive. It is a reflection of molecular metabolism imaging when the disease is in the early stage of molecular level changes, the morphology and structure of the lesion area has not yet presented abnormalities, CT examination cannot be a precise diagnosis, PET examination can be found where the lesion is, and can obtain three-dimensional images, but also quantitative analysis, to achieve an early diagnosis, which is currently incomparable to other imaging examinations.

（3）PET has high specificity. It is difficult to judge whether a tumor is benign or malignant when it is found in an organ by CT examination. However, PET examination can diagnose malignant tumors based on the high metabolism of the tumors.

（4）PET is a whole-body image. It is a one-time whole-body imaging examination that allows you to obtain images of all areas of the body.

（5）PET is safe. The dose of radiation exposure from a PET whole-body examination is much smaller than that from a conventional CT examination of a single site, making it safe and reliable but expensive.