A Patient with Recurrent Breast Cancer Showing Long-Term Survival after Developing Pericardial Effusion and Cardiac Tamponade Caused by Carcinomatous Pericarditis

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Keywords
Breast cancer · Carcinomatous pericarditis · Pericardial effusion · Cardiac tamponade · Thoracoscopic pericardial window

Summary
Background: Malignant pericardial effusion caused by carcinomatous pericarditis is a complication of advanced malignancy. Breast cancer is the second most important cause of malignant pericardial effusion. Malignant pericardial effusion is the end stage of breast cancer, and the prognosis is very poor. Pericardial effusion may cause cardiac tamponade and sudden death if it is not controlled properly. There is a debate on which is the best method to control pericardial effusion. Case Report: We describe the clinical course of a 55-year-old woman with recurrent breast cancer, pericardial effusion, and cardiac tamponade caused by carcinomatous pericarditis. Thoracoscopic pericardial window was performed to control the pericardial effusion. The patient survived for about 5 years after being diagnosed with pericardial metastases. Conclusion: The observed long-term survival in such a patient with the development of pericardial effusions and cardiac tamponade caused by carcinomatous pericarditis attributable to breast cancer is rare. Thoracoscopic pericardial window was effective in controlling the pericardial effusion.

Introduction
Malignant pericardial effusion caused by carcinomatous pericarditis is a complication of advanced malignancy; however, this type of pericardial effusion is relatively uncommon.

Breast cancer is the second most important cause of malignant pericardial effusion [1–3]. In an autopsy series of patients with breast cancer, pericardial disease was reported in 19% of the patients [3]. Malignant pericardial effusion is the end stage of breast cancer, and the prognosis is very poor [1, 2, 4].
At this time, no metastatic lesions were observed in the important organs other than the pericardium. The patient received 6 cycles of chemotherapy with 5-fluorouracil, epirubicin, and cyclophosphamide. In January 2007, she experienced dyspnea, and chest radiography showed an enlarged cardiac shadow (fig. 3a). CT detected pericardial effusion in the right side of the heart (fig. 3b). Pericardiocentesis and thoracoscopic pericardial fenestration was performed on the right side of the heart. After the operation, she was treated with weekly paclitaxel.

In August 2007, metastasis was observed on her left breast. She was treated with capecitabine and cyclophosphamide for 5 months, weekly paclitaxel for 6 months, triweekly docetaxel for 7 months, vinorelbine for 5 months, irinotecan for 10 months, gemcitabine alone for 2 months, and a combination of gemcitabine and paclitaxel for 3 months. In addition to treatment with several chemotherapeutic drugs, she underwent radiotherapy and local excision. In February 2011, she died because of lymphangitic carcinomatosis of the lung. She survived for about 5 years after being diagnosed with pericardial metastases, and no recurrence of pericardial effusion was observed after the last operation.

Discussion

The prognosis of carcinomatous pericarditis associated with breast cancer is very poor [1, 2]. In our case, the patient survived for 5 years after developing pericardial effusions and...
cardiac tamponade caused by carcinomatous pericarditis. We believe that she showed a long survival period. We think that the reasons for the patient’s long survival were absence of metastasis in the organs other than the pericardium and a positive response to chemotherapy. The patient rejected adjuvant therapy despite it being very effective in suppressing the recurrence of breast cancer. If she had received appropriate adjuvant therapy, she could have survived longer.

Patients with malignant pericardial effusion disease have almost no chance of being cured; therefore, symptomatic relief is very important. There is a debate regarding the best treatment to control pericardial effusion [6–9]. In our case, we performed pericardial window by using a videothoracoscope and obtained a successful outcome. Our patient showed an atypical recurrence of pericardial effusion in only the right side of the heart after the initial operation, but there was no recurrence after the second operation. We encourage the use of pericardial window because it is minimally invasive and affords good control of pericardial effusion.

The survival period of breast cancer patients will become longer, and opportunities to treat pericardial metastases and pericardial effusion will increase with the progress in breast cancer treatments such as chemotherapy, endocrine therapy, or molecular-targeted therapy. In selecting the mode of treatment, we should consider not only the patient’s survival but also improvements in the quality of life.

**Conclusion**

Carcinomatous pericarditis associated with breast cancer shows a poor prognosis. We reported a case of long-term survival in a patient with recurrent breast cancer after developing pericardial effusion and cardiac tamponade caused by carcinomatous pericarditis. Thoracoscopic pericardial window was effective in controlling the pericardial effusion.

**Disclosure Statement**

The authors report no conflict of interests.

**References**