Left fallopian tube primitive serous adenocarcinoma presenting as a cardiac tamponade - a case report and review of literature

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Summary

A 61-year-old woman presented to the emergency room complaining of anterior left thoracic pain and shortness of breath even after minor efforts. Her previous medical history was unremarkable. Pulmonary angiographic tomography showed a moderate bilateral pleural effusion that had collapsed inferior lung lobes, a large pericardial effusion, and several enlarged lymph nodes in the anterior mediastinum. Echocardiogram (ECG) showed a considerable pericardial effusion with some degree of heart function impairment. Pericardiocentesis and thoracocentesis revealed neoplastic cells in both pericardial and pleural fluids. Abdominal and pelvic ultrasound showed a complex cystic mass with a 13-cm diameter located at left adnexal region and another complex cystic tumor with five-cm diameter at right adnexal region, with small amount of peritoneal effusion. Surgical staging was performed. Pathologic diagnosis was primitive left fallopian tube serous adenocarcinoma with peritubal involvement and multiple peritoneal and lymphatic metastases (FIGO Stage IV; TNM pT3c M1). Chemotherapy was initiated. Death occurred 25 months after diagnosis, with secondary dissemination (breast and lung). No recurrence of pericardial effusion was registered after chemotherapy, suggesting a high susceptibility of pericardial metastasis.

Key words: Fallopian tube adenocarcinoma; Cardiac tamponade; Gynecological cancer.

Introduction

Although pericardial metastasis is frequently found in autopsies of patients whose cause of death was cancer, they are usually not symptomatic [1]. Sometimes enough quantity of pericardial fluid accumulates leading to cardiac tamponade which may be fatal if left untreated. Urgent pericardial drainage might be life-saving, but a work-up to find primary tumor's localization is necessary for proper management of the patient.

In women, those that most frequently complicate with cardiac metastasis are lung, lymphoma, breast, and pancreatic cancers [1]. Very few cases of cardiac tamponade originating from ovarian cancer have been reported [2-7]. No clinical cases of cardiac tamponade as the presenting manifestation of primary carcinoma of the fallopian tube have been previously reported, probably because it is one of the rarest malignancies of female reproductive tract [8]. Its estimated incidence ranges from 0.15%-0.30% to 1.1%-1.8% of all gynecological cancers [8-11].

Case Report

A 61-year-old woman presented to the emergency room complaining of anterior left thoracic pain and shortness of breath even after minor efforts. These symptoms had commenced a few days prior and came to the hospital when dyspnea of growing intensity began. She denied any recent fever, nausea or vomiting. Her previous medical history was unremarkable, except for asthma, but had been asymptomatic for the previous 15 years, and a depressive syndrome for which she was medicated with alprazolam and escitalopram for three years.

Blood samples were collected for analysis. Hemogram and ionogram showed no abnormalities; D-dimmers were 2,908 ug/l. Initial proposed diagnosis was pulmonary embolism, based on acute onset of the symptoms. Pulmonary angiographic tomography showed a moderate bilateral pleural effusion that collapsed inferior lung lobes, a large pericardial effusion, and several enlarged lymph nodes in anterior mediastinum.

The patient was admitted to the Intensive Care Unit (ICU) for further evaluation and therapy. Echocardiogram (ECG) showed a considerable pericardial effusion with some degree of heart function impairment. Pericardiocentesis and a thoracocentesis were then performed. Neoplastic cells were present in cytological analysis of both pericardial and pleural fluids. An abdominal and pelvic ultrasound showed a complex cystic mass with a 13-cm diameter located at left adnexal region and another complex cystic tumor with a five-cm diameter at right adnexal region, with small amount of peritoneal effusion. Enlarged lymph nodes in the right iliac chain – 2.5 cm was the largest diameter – were imaged with abdominal and pelvic tomography.

Twenty days after admission, complete surgical staging was performed. Pathologic diagnosis was primitive left fallopian tube serous adenocarcinoma with peritubal involvement and multiple peritoneal and lymphatic metastases (FIGO Stage IV; TNM pT3c M1).

The patient was scheduled for chemotherapy with paclitaxel 175 mg/m^2 and carboplatin every three weeks, commencing at 41 days after admission. No grade III toxicity was reported. After six courses of chemotherapy, a partial response was

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obtained with no recurrence of pericardial effusion. She was asymptomatic and chemotherapy was stopped. A second-line chemotherapeutic treatment was begun 12 months after initial admission due to abdominal disease progression with doxorubicin 50 mg/m^2 every two weeks. No response was documented after the third cycle of chemotherapy. A third-line chemotherapeutic treatment was attempted with carboplatin 300 mg/m^2 and cyclophosphamide 600 mg/m^2 every four weeks. Grade III toxicity with severe anemia and neuropathy developed and chemotherapy was stopped by the second course.

At 25 months after initial diagnosis, a left breast metastasis with cutaneous infiltration was diagnosed and confirmed by trucut biopsy. At that time, a pulmonary carcinomatosis was also diagnosed. She was no longer considered suitable for further chemotherapy and palliative care was proposed. The patient died 25 months after initial diagnosis as a consequence to cardio-pulmonary insufficiency with no signs of cardiac tamponade recurrence. No autopsy evaluation was done.

Discussion

As it was previously emphasized, primary malignancies of the fallopian tube are very rare diseases [8-12]. Most likely, this is the reason why the described case is, according to the authors' knowledge, the first clinical case reporting a cardiac tamponade as first manifestation of primary fallopian tube carcinoma.

In the present case, cancer cells in pericardial effusion were detected before any gynecological symptoms. The work-up of the patient showed a complex bilateral adnexal tumor. Staging laparotomy allowed the diagnosis of fallopian tube primitive serous adenocarcinoma.

The diagnosis of primitive fallopian tube cancer is very rare before surgery. Usually it is made during laparotomy for staging a suspicious adnexal tumor and is almost always considered an ovarian cancer. In the described case, the adnexal tumors were a delayed diagnosis, after cardiac tamponade, and they were assumed as ovarian cancer.

Most cases of primary fallopian tube adenocarcinomas are serous and diagnosed at FIGO Stage I [9, 13, 14]. FIGO staging for ovarian cancer has been adopted for primary fallopian tube cancer staging. Prognosis is strongly dependent on FIGO Stage [12]; Stage IV patients have a median survival time that can be as low as 20 months [11]. As in this presented case, diagnosis is usually made in menopause patients, in their fifth to sixth decades of life [9, 11, 13, 14]. However, fallopian tube carcinoma has been described in patients ranging from 14 to 85 years of age [8].

Initial treatment for primary fallopian tube adenocarcinoma is surgical [8, 11]. Hysterectomy with bilateral salpingo-oophorectomy is considered the standard therapy [12]. Less radical surgery has been attempted in some Stage I fallopian tube carcinomas, but this is a controversial approach [8, 15]. Adjuvant chemotherapy seems to increase survival and is advisable for patients with proper medical conditions [11]. Platinium-based chemotherapy should be the first-line treatment [8, 11]; other recommended agents are doxorubicin and cyclophosphamide [8]. Radiotherapy is a controversial treatment for primary fallopian tube cancer.

Individualized treatment for metastatic primary fallopian tube carcinoma should be offered to those patients and chemotherapy is usually the initial treatment. In the present case, after an initial partial response to chemotherapy, a progression of the disease was documented resulting in the patient's death 25 months after diagnosis. However, it is interesting to note that no recurrence of pericardial effusion was registered, suggesting a high susceptibility of pericardial metastasis to chemotherapy. This finding may be taken in account for other patients diagnosed with cardiac metastasis from primary fallopian tube carcinoma.

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