

Pulmonary Stasis or Metastases Spreading in Patients with Congestive Heart Failure

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Abstract

Endometrial carcinoma (EC) as the most common gynecologic malignancy of the female genital tract which is commonly spreading through pelvic lymph node and paraaortic lymph node or adnexa and pelvic viscera to pulmo, rectum, ovaries, fallopian tubes and to bladder. Chest radiography is the initial imaging modality used in the detection of suspected pulmonary metastasis, but chest computed tomography (CT) scanning without contrast is more sensitive than chest radiography. Metastatic spreading of EC into the lung are rare cases, like ours case report, when pulmonary metastases are a random finding of previously unknown EC. We present the case of 64 ages women with symptoms of congestive heart failure and several comorbidities, hypertension, hypothyreosis and uterine fibroids. The heart decompensation and increased risk of atherosclerotic disease were confirmed by chest X-ray radiography and these subsequent markers: brain natriuretic peptide (BNP) = 14838 pg/mL and homocysteine = 31.5 μ mol/L. Elevated level of CA 125 tumor marker (332.5 U/mL) and normal levels of another tumor markers: CA 15.3, CA 19.9, cytokeratin 19 fragments (CY-FRA 21-1), CEA and AFP were laboratory confirmed. There was an evident increase in D-dimer (3060 to 6490 ng/ml) in two days. Pulmonary metastasis and feeding vessel sign and pleurosis calcare was found on CT scan presented as soft tissue attenuation, well circumscribed, rounded lesion in the lung periphery with feeding vessel sign as a prominent pulmonary vessel into metastasis. We conclude that CT scan estimation is very important for early detection of metastatic dissemination in patients with positive history.

Keywords: Endometrial Carcinoma (EC); Computed Tomography (CT)

Introduction

Endometrial carcinoma (EC) is the most common gynecologic malignancy of the female genital tract with favorable prognosis, 13% of all EC recur more than 70% of recurrences occur within 3 years [1]. In distant metastasis, endometrial cancer is commonly spreading through pelvic lymph node and paraaortic lymph node or adnexa and pelvic viscera. Pulmonary metastasis is seen in 20 - 54% of extrathoracic malignancies [2]. Lungs are the second most frequent site of metastases from extrathoracic malignancies. Twenty percent of metastatic disease is isolated to the lungs [2,3]. Imaging plays an important role in the screening and detection of pulmonary metastases. Chest

radiography is the initial imaging modality used in the detection of suspected pulmonary metastasis in patients with known malignancies or a random finding an undiscovered metastatic source. Chest computed tomography (CT) scanning without contrast is more sensitive than chest radiography. The usual image pattern of pulmonary metastatic reveals multiple pulmonary nodules, and solitary pulmonary nodule with cavitations is rare [3-5]. Sometimes this type of tumor nodule is difficult for differentiating it from primary lung cancer in chest imaging diagnosing, especially for cases that have not previously been gynecologically examined and diagnosed for EC. There are rare cases, like ours, when pulmonary metastases are a random finding of previously unknown EC.

Case Report

Female patient of 64 ages with shortness of breath, weakness, rapid and irregular heartbeat, swelling of her abdomen, lack of appetite with nausea and edema in her legs, ankles and feet was examined in the ambulance of internal medicine, 6 days before hospitalization. She was treated with cardiotonics, bronchodilators, corticosteroids, diuretics, nonselective beta blocker and antibiotics 4 days, but with any apparent improvement, except for the reduction of the swelling. The patient was formerly treated by symptoms of decompensate heart failure several times in our hospital, with an average hospitalisation of 9.3 ± 2.5 days. She was splenectomized before 12 years ago, after traffic trauma. A myoma of the uterus was also diagnosed more than 6 years ago. In the following period there was no repeated gynecological examination because there was no frequent bleeding.

These are just some of the pre-established diagnoses from her medical chart: Dg. Bronchitis chr. Obstructiva. Cardiomyopathy chr. decompensata. Tachyarrhythmia cordis. HTA. Hypothyreosis. Myoma uteri.

Routine laboratory analyzes showed the following results: Hemoglobin = 132 g/L, Red blood cell = 4.5×10^{12} /L, Platelets = 240×10^9 /L, Leucocytes = 11.3×10^9 /L, Urea = 41.5 mmol/L, Creatinine = 189 μ mol/L, TSH = 9.130 μ U/mL, FT4 = 17.5 pmol/L, Glycemia = 9.9 mmol/L, Total cholesterol = 3.04 mmol/L, High density lipoprotein cholesterol = 0.75 mmol/L, Low density lipoprotein cholesterol = 1.80 mmol/L, Triglycerides = 1.22 mmol/L, C-Reactive Protein = 277.7 mg/L, Natrium = 131 mmol/L, Potassium = 4.8 mmol/L, Chlor = 95 mmol/L, alanine aminotransferase = 106 U/L, aspartate aminotransferase = 64 U/L, alkaline phosphatase = 209 U/L, lactate dehydrogenase = 304 U/L, gamma-glutamyl transferase = GGT = 181 U/L.



Figure 1: Ultrasound images of congestive liver with a dilated inferior vena cava and dilated hepatic veins, and dilated portal vein.

In this female patient with severe congestive heart failure, elevated pressure in the hepatic veins was been transmitted through the dilated sinusoids into the portal veins. The portal vein diameter was 14.3 mm, and diameter of inferior vena cava was 25.6mm. We confirmed this cardiac decompensation and increased risk of atherosclerotic disease with subsequent markers: brain natriuretic peptide (BNP) = 14838 pg/mL and homocysteine = 31.5 μ mol/L.



Figure 2: Pulmonary congestion on chest X-ray radiography (AP projection) 3 hours after hospitalization.

Compensatory redistribution of pulmonary blood flow with increased artery-to-bronchus ratio in middle lobes because of the congestive heart failure and pulmonary stasis is evident in figure 2.

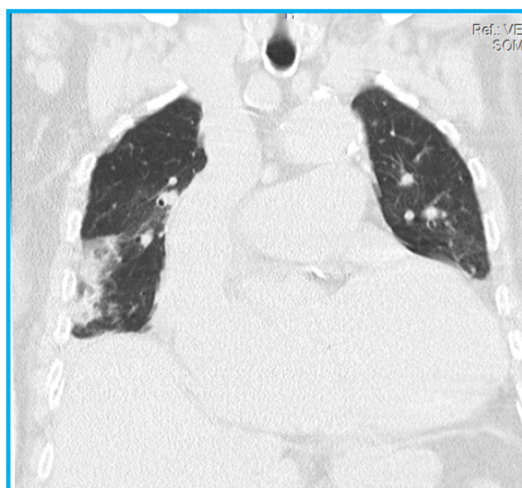


Figure 3: CT scan of pulmonary metastasis from endometrial carcinoma and pleurosis calcare.

Typically, metastases on CT scan appear of soft tissue attenuation, well circumscribed, rounded lesion, more often in the lung periphery. Feeding vessel sign as a prominent pulmonary vessel into metastasis has frequently been noted (Figure 3 and 4).

We found an elevated level of CA 125 tumor marker (332.5 U/mL) and normal levels of these tumor markers: CA 15.3 = 13.5 U/mL, CA 19.9 = 22.0 U/mL, cytokeratin 19 fragments (CYFRA 21-1) = 1.4 ng/mL, CEA = 1.9 ng/mL and AFP = 2.9 IU/mL. There was an evident increase in D-dimer in the 1st (3060 ng/ml) and 2nd (6490 ng/ml) day of hospitalization.



Figure 4: Pulmonary metastasis and feeding vessel sign on profile CT scan.



Figure 5: CT scan of the lung (sagittal section) at the level of the lower lobes demonstrates initial metastases and pleurosis calcare.

Due to congestive heart failure, acute cardio-respiratory insufficiency and clinical instability of the patient, further investigations were not possible. After a visit to cardiopulmonary reanimation and resuscitation, the patient ended fatal. The type of malignant disease was not proven either histologically or with autopsy.

Conclusion

We concluded that despite the rare occurrence of metastases in the lungs that originate from the women's genital tract, we should always suspect that we are doing control CT scan, especially in women who give anamnesis or symptoms from the genital tract. In this way, we will provide early diagnosis, so that our case report will not be the fatal when metastases are detected in a terminal stage. Educational lesson: The presentation of this case report to be a stimulus for earlier detection of metastases in gynecological and in all other malignancies.

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