

Gastric carcinoma presenting as pericardial tamponade during pregnancy

Gebelik sırasında perikardiyal tamponat ile kendini gösteren mide kanseri

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We describe a rare presentation of acute cardiac tamponade in a patient with gastric cancer in pregnancy. A 32-year-old woman developed dyspnea and tachycardia during the 28th week of her pregnancy. These symptoms were interpreted initially by the patient as a condition related to the normal state of pregnancy; however, her symptoms persisted over the next two weeks, and she was hospitalized for evaluation. The diagnostic work-up revealed metastatic gastric carcinoma to the pericardium associated with pericardial tamponade. Large pericardial and pleural effusions were the primary causes of her shortness of breath. Gastric cancer is very rare in pregnancy, and therefore may be not be suspected by physicians. Diagnosis may be further delayed because of overlapping symptoms occurring during normal pregnancy (nausea, vomiting, and shortness of breath). All these factors may contribute to a very high mortality of this malignancy during pregnancy.

Key words: Gastric cancer, pregnancy, pericarditis, cardiac tamponade

INTRODUCTION

Gastric cancer during pregnancy is rare (1). We describe a parturient with gastric carcinoma and associated pericardial tamponade, which presented initially as cough and dyspnea before it progressed to respiratory distress. The gradual onset of dyspnea and cough, which developed without any gastrointestinal symptoms, was initially thought to be due to respiratory infection. This report represents the first description of pericardial tamponade related to metastatic gastric cancer during pregnancy.

CASE REPORT

A 32-year-old pregnant woman (gravida 2, para 1)

Gebelik sırasında mide kanserli akut kalp tamponatı geliştiren bir olguyu sunuyoruz. 32 yaşında 28 hastalık gebe dispepsi ve taşikardi ile başvurdu. Başlangıçta gebeliğe bağlanmakla beraber bu yakınmalar 2 hafta daha sürünce hasta hastaneye yatırıldı. Tanısal incelemeler perikardiyal metastaz yapan mide kanseri nedeni ile kalp tamponatı geliştirdiğini gösterdi. Perikardiyal ve plevral effüzyonlar nefes darlığının ana sebepleri idi. Gastrik kanser tanısı gebelikte benzer yakınmalara (bulantı, kusma, nefes darlığı) yol açma nedeni ile gözden kaçabilir.

Anahtar kelimeler: Gastrik kanser, hamilelik, perikardit, kardiyak tampon

was admitted to Split University Hospital (Croatia) with dyspnea, cough and tachycardia (110 beats/min). Both the gynecological examination and the obstetrical ultrasound revealed a normal 28-week singleton pregnancy. Her dyspnea and cough, mostly present at night, gradually increased over the two weeks before her hospital admission. Because of “pulmonary” symptoms, she was referred to a pulmonologist who ruled out pneumonia; however, chest radiograph revealed a large right pleural effusion and an enlarged cardiac silhouette consistent with cardiomegaly.

On physical examination, she was tachypneic, dyspneic, and had distended neck veins in reclined

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position and enlarged supraclavicular lymph nodes. Blood pressure was 80/40 mm Hg and pulse rate was 130 beats/min. Electrocardiogram (ECG) showed sinus tachycardia of 125 beats/min and low voltage (amplitude of the QRS in most of the leads was 5 mm-0.5 mV) associated with pulsus alternans consistent with pericardial effusion. Magnetic resonance imaging confirmed large pericardial effusions as well as infiltrates of the right pulmonary hilus and large right pleural effusion. Echocardiogram was performed and confirmed the presence of 2.2 cm pericardial effusion (Figure 1) restricting heart expansion and consistent with pericardial tamponade. Because of the rapid worsening of her cardiorespiratory symptoms, pericardiocentesis under echocardiographic visualization was performed, and 800 ml of hemorrhagic fluid was drained. This resulted in immediate normalization in ECG voltage and disappearance of electrical alternans. Following pericardiocentesis, her heart rate decreased to 95 beats/min, and blood pressure increased to 110/85 mm Hg. Because of the residual dyspnea, an ultrasound-guided pleurocentesis was also performed and 2,000 ml of hemorrhagic fluid was obtained. This intervention resulted in immediate improvement of her dyspnea. The cytological analyses of pleural and pericardial aspirates were consistent with metastatic adenocarcinoma, and gastroscopy confirmed the presence of large gastric carcinoma. Laboratory results were: lactate dehydrogenase (LDH) in pleural and pericardial exudates >5,000 IU/L, blood LDH 1,589 IU/L (normal: 120-240 IU/L), serum GOT 155 IU/L (normal: 5-20 IU/L), GPT 257 IU/L (normal: 7-25 IU/L), sodium 129 mmol/L (normal:

139-150 mmol/L), cancer antigen 125 (CA125) 300 IU/ml (normal, <35 IU/ml), and carcinoembryonic antigen 43 ng/ml (normal, <5 ng/ml). Needle biopsy of the enlarged supraclavicular lymph node confirmed the cytological diagnosis of metastatic gastric adenocarcinoma.

A consensus among physicians was to provide a supportive therapy for the next two weeks in order to achieve better fetus maturation. Twelve days after her admission, the patient's condition acutely deteriorated, her spontaneous breathing ceased, and she required tracheal intubation and mechanical ventilation. Cardiotocography of baby's heart tones as well as uterine contractions became "silent type". An emergent cesarean section was performed, and a male newborn, 45 cm long and weighing 1,950 grams, was delivered. The Apgar scores were 4 and 5 in the first and fifth minutes. Arterial blood gas was obtained (pH = 6.94; pO_2 = 55.5 mm Hg; pCO_2 = 45.8 mm Hg; BE = -22.3 mmol/L) and his trachea was intubated. Six weeks later the child was discharged from the hospital in satisfactory condition.

The examination of the patient's abdominal cavity after the cesarean section revealed an inoperable and widely disseminated gastric cancer. A pathophysiologic analysis confirmed an anaplastic adenocarcinoma. After surgery, the patient was readmitted to the intensive care unit. Seven days later, despite all the supportive therapy, she became asystolic and died.

DISCUSSION

Gastric cancer typically occurs during the sixth decade of life and is rarely encountered before the age of 40 (2). Only 2% of gastric carcinomas affect patients younger than 30 years (3) and only 0.1% occur during pregnancy (1). It is not known whether pregnancy may accelerate the growth of gastric neoplasia, but it has been suggested that more aggressive biological behavior of this tumor in pregnant patients could be the reason for poor prognosis (4). In addition, insidious onset, associated with symptoms that can be attributed to pregnancy (nausea, vomiting, tachycardia, shortness of breath), may contribute to the late diagnosis resulting in high mortality. Other conditions may be associated with pericardial effusion and tamponade: infections (bacterial, viral, and fungal), chest trauma, collagen vascular diseases (rheumatoid arthritis, systemic lupus erythematosus), uremia, hypothyroidism, and malignancies. Among malig-

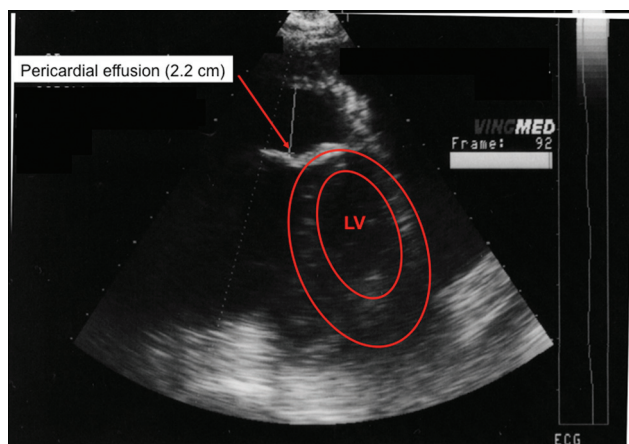


Figure 1. Para-apical short axis image of the left ventricle (LV). The probe is angulated to the right to show the 2.2 cm pericardial effusion.

nant tumors most frequently associated with pericardial metastases are carcinoma of the breast, melanoma and lymphoma. Our case is the first report of a patient with metastatic gastric adenocarcinoma causing pericardial tamponade during pregnancy. The onset was insidious with nonspecific respiratory symptoms of dyspnea and cough, while our patient lacked any gastrointestinal symptoms. Initially, the patient attributed her shortness of breath to advanced pregnancy; therefore, she did not seek medical attention. When she presented to us she was in respiratory and cardiovascular distress caused by a large pleural effusion and acute pericardial tamponade related to advanced stage metastatic gastric carcinoma.

Although very rare in pregnancy, (1) almost all reported cases of gastric cancers in parturients were diagnosed in later stages (5, 6). For example, Ueo *et al.* (6) reported that 59 of 61 patients were diagnosed at an advanced stage, with ability to do resection in only 47.5% of patients. The diagnosis of gastric carcinoma in a parturient may be difficult because pregnancy is frequently associated with various gastrointestinal symptoms. Notably, minor epigastric discomfort with nausea and vomiting are common during pregnancy. Fazeny and Marosi (7) advocated an extensive diagnostic workup in all pregnant women with atypical or prolonged gastrointestinal symptoms before initiation of any therapy (antacids or H₂ blockers). However, this approach may be prohibitive from an economic standpoint, as 1,000,000 gastroscopies would be necessary to diagnose only 9 gastric carcinomas *per year* in pregnant females in the United States

(8). In addition, there is a great hesitation in subjecting pregnant women to extensive diagnostic tests (9).

Gastric cancer has a uniquely negative impact on maternal prognosis (9). Fazeny and Marosi (7) reviewed literature for all published cases (n=102) of gastric cancers during pregnancy and found a short median survival. The delay in diagnosis results in a poor prognosis, and according to one report (10), 88% of women died within 1 year. Ueo *et al.* (6) reported a series of pregnant patients with gastric carcinoma during pregnancy or within 12 months of delivery, and the 3-year survival was 21%. They proposed guidelines for treatment which depended on both the stage of disease and pregnancy. They recommended that when gastric cancer is diagnosed before the 24th week of pregnancy, surgery should be performed immediately. Between the 25th and 29th week, the decision depends on resectability of the cancer; if it is resectable, the surgery should be performed regardless of the risk to the fetus. After that time, the fetus should be delivered first, followed by cancer operation.

In conclusion, we describe herein the first case in the literature of a pregnant woman with gastric carcinoma that presented with acute pericardial tamponade. Gastric cancer in pregnancy has a poor prognosis because the vast majority of cases are diagnosed in the late stage. The delay in diagnosis may occur because presenting symptoms are nonspecific and are usually attributed to symptoms associated with pregnancy.

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