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Gastric carcinoma during pregnancy: Report of a case

Gebelikte saptanan mide kanseri: Olgu sunumu

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Background/aims: *Gastric cancer in pregnancy is extremely rare and often diagnosed at advanced stages. Well-recognized pregnancy-related symptoms, such as nausea and epigastric discomfort, can be the first symptoms of gastric cancer. Thus, the diagnosis of gastric cancer in pregnancy is difficult. We herein report a case of gastric cancer in pregnancy to alert clinicians to this rare possibility.* ***Materials and methods:*** *A 22-year-old nulliparous woman was examined by a gynecologist with a complaint of low abdominal pain. An abdominal ultrasound of the patient revealed 7th week of gestation and also showed massive ascites. She was referred to a hospital for further evaluation. Her other symptoms included loss of appetite, early satiety, and postprandial fullness. Gastroscopy demonstrated a tumor originating from the cardia and invading throughout the distal corpus. The histopathological diagnosis was gastric carcinoma with signet ring cells and her pregnancy was terminated. An explorative laparotomy revealed an unresectable gastric cancer and multiple peritoneal implants. Tumoral invasion was detected in pancreas and spleen. She was admitted to the medical oncology clinic and received a palliative chemotherapy. Bilateral double-J-stent placement was performed because of obstructive uropathy. A nasogastric tube was inserted for intestinal decompression, and total parenteral nutrition was administered. An adequate pain medication was given. To date (3 months after the diagnosis) the patient has been well without any signs of progression.* ***Conclusion:*** *Early diagnosis of gastric cancer is very important for a better outcome. The diagnosis may be delayed because mild gastrointestinal symptoms are common during pregnancy. Clinicians should take this into consideration in the differential diagnosis of persistent epigastric complaint during pregnancy. Suspicion and early upper gastrointestinal endoscopy are necessary.*

Key words: Gastric cancer, pregnancy, chemotherapy

Amaç: *Gebelikte mide kanseri çok nadirdir ve sıklıkla ileri evrelerde tanı koyulur. Bulantı, epigastrik rahatsızlık gibi gebelikle ilişkili olduğu iyi bilinen semptomlar, mide kanserinin ilk semptomları olabilir. Bu nedenle, gebelikte mide kanseri tanısı zordur. Burada, bu nadir olasılığa klinisyenlerin dikkatini çekmek amacıyla, gebelikte mide kanseri tanısı almış bir olgu sunulmaktadır.* ***Yöntem:*** *22 yaşında kadın hasta kasık ağrısı şikayetiyle bir jinekolog tarafından muayene edildi. Karın ultrasonografisinde 7 haftalık gebe olduğu saptandı ve ayrıca yoğun miktarda asit görüldü. Hasta daha ileri değerlendirme amacıyla bir hastaneye yönlendirildi. Hastanın kasık ağrısı dışında iştahsızlık, erken doyma ve yemek sonrası şişkinlik şikayetleri vardı. Yapılan gastroskopide, kardiyadan köken alan ve tüm distal korpusu invaze eden tümör saptandı. Histopatolojik incelemede taşlı yüzük hücreli mide karsinomu tanısı koyuldu ve hastanın gebeliği sonlandırıldı. Exploratif laparotomide unrezektabl mide kanseri ve multiple peritoneal implantlar saptandı. Tümörün, pankreasa ve dalağa invaze olduğu görüldü. Tıbbi onkoloji kliniğine kabul edilen hastaya palyatif kemoterapi verildi. Obstrüktif üropati nedeniyle bilateral double-J-stent yerleştirildi. İntestinal dekompresyon için nazogastrik sonda takıldı ve total parenteral beslenme uygulandı. Yeterli ağrı palyasyonu yapıldı. Şimdiye kadar (tanıdan 3 ay sonrasında) herhangi bir progresyon bulgusu gözlenmeyen hastanın durumu iyidir.* ***Sonuç:*** *Mide kanserinin erken tanısı, daha iyi sonuçlar elde edilmesi açısından çok önemlidir. Tanıda gecikmeler olabilir çünkü hafif gastrointestinal semptomlar gebelikte sık görülür. Klinisyenler, gebelikte sürekli olan epigastrik şikayetlerin ayırıcı tanısında mide kanserini de düşünmelidir. Tanı için, mide kanserinden şüphe duyulması ve erken gastroskopi yapılması gereklidir.*

Anahtar kelimeler: Mide kanseri, gebelik, kemoterapi

INTRODUCTION

Gastric cancer during pregnancy is extremely rare, with a reported incidence of 0.1% (1). This reflects its tendency to manifest with advancing age and its male preponderance (2). The diagnosis of gastric cancer in pregnancy is very often delayed. In 97% of the cases, patients were found to be at advanced tumor stage when curative therapies are not possible (3). Its prognosis is generally poor. Early diagnosis of gastric cancer is very important for a better outcome (3). The diagnosis of

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gastric cancer in pregnancy is difficult, because early symptoms will usually be misinterpreted as the common pregnancy-induced nausea, mild epigastric pain, fullness, etc. (2). We herein report a patient who suffered from advanced gastric cancer during the first trimester of pregnancy, to alert clinicians to this rare possibility. The differential diagnosis of pesistent epigastric discomfort associated with pregnancy must include gastric cancer. Suspicion and early upper gastrointestinal endoscopy are necessary for the diagnosis (2).

CASE REPORT

A 22-year-old nulliparous woman was examined by a gynecologist with a complaint of low abdominal pain. An abdominal ultrasound of the patient revealed 7th week of gestation and also showed massive ascites. She was referred to a hospital for further evaluation. Her other symptoms included loss of appetite, early satiety, and postprandial fullness. There was a history of gastric cancer in her grandfather. Upper gastrointestinal endoscopy demonstrated a tumor originating from the cardia and invading throughout the distal corpus. The histopathological diagnosis was gastric carcinoma with signet ring cells, and her pregnancy was terminated. Computerized tomography of the abdomen showed a huge mass in the stomach, massive ascites and retroperitoneal lymphadenopathies. Tumoral invasion was detected in pancreas and spleen. An explorative laparotomy revealed an unresectable gastric cancer and multiple peritoneal implants. She was subsequently admitted to the medical oncology clinic for systemic chemotherapy.

On admission, the patient was experiencing significant abdominal pain, general malaise, nausea, vomiting, and constipation, and was unable to tolerate oral intake. On physical examination, we found a cachectic patient with a prominent abdomen, epigastric tenderness and ascites. In laboratory examinations, a normocytic anemia with thrombocytosis (hemoglobin 9 g/dl, platelet 600,000/µL, and white blood cell count 7,600/µL) was detected. Renal function tests were compatible with acute renal failure: blood urea nitrogen 114 mg/dl, serum creatinine 9.31 mg/dl, serum sodium 129 mmol/L, and potassium 5.33 mmol/L. Liver function tests were normal except for hypoalbuminemia (serum albumin 2.5 g/dl). Abdominopelvic ultrasonography showed bilateral dilation of the urinary tract. A double-J-stent placement was performed because of the obstructive uropathy. Her creatinine levels decreased to normal in seven days. The upright abdominal radiograph of this patient revealed stepladder air-fluid levels distributed throughout the abdomen. Based on the diagnosis of an acute mechanical small bowel obstruction, a nasogastric tube was inserted for intestinal decompression, fluid and electrolyte replacement was performed, and total parenteral nutrition was administered through a central venous catheter.

The patient received supportive treatment, adequate pain medication and a palliative chemotherapy. The chemotherapy regimen comprised a 2-h infusion of folinic acid (400 mg m^{-2}), then a bolus injection of 5-fluorouracil (400 mg m^{-2}) on day 1, followed by a 46h infusion of 5-fluorouracil (2400 mg m^{-2}). Epirubicin (75 mg m^{-2}) was administered on day 1 as a 30-min infusion. Cisplatin was not administered because of renal impairment. The regimen was repeated every two weeks. To date (3 months after the diagnosis), the patient has been well without any signs of progression.

DISCUSSION

A case of a 22-year-old woman at the 7th week of gestation who suffered from advanced gastric carcinoma is herein presented. Gastric cancer during pregnancy is extremely rare. It was first reported by Fujimura and Fukunda in 1916 (4). In 1998, Fazeny and Marosi (5) conducted a 30-year review of the world's medical literature. Among 100 reports of pregnancy-associated gastric cancer, only one survivor was detected. Maternal survival of 9-19 months after diagnosis in pregnancy was observed for all other cases. The predominance of a far advanced disease characterized by poorly differentiated adenocarcinomas with presence of peritoneal metastases, as in our case, was detected.

While in older patients the majority of carcinomas are of the intestinal, usually well differentiated type, the tumors in young patients are mainly poorly differentiated carcinomas of the diffuse type with signet ring cells and peritoneal metastasis. These characteristics were more pronounced in the pregnancy-associated cases (6). In our patient, the histopathological diagnosis was also gastric carcinoma with signet ring cells.

The pathogenesis of relationship of pregnancy and gastric cancer remains idiopathic. Besides environmental and genetic etiology, factors associated with the pregnancy itself are considered in the

pathogenesis. Furukawa et al. (7) reported that pregnancy in young females might accelerate the growth of gastric cancer. The promoter effect of sex hormones on carcinogenesis was demonstrated experimentally in the stomach of rats. It was reported that the development and growth of gastric cancer were enhanced by changes in the hormonal circumstances associated with pregnancy (5). However, the effect of estrogen and the results of anti-estrogen treatment in clinical trials are controversial. Jaspers et al. (2) reported that the features and prognosis in gastric cancer associated with pregnancy were the same as in other young patients. Currently, whether or not pregnancy accelerates gastric neoplasia is unknown.

Endoscopic examination has been reported to be safe in pregnancy. Risk factors which were present in most of the reported cases might be helpful for the indication of upper gastrointestinal endoscopy. These include a family history of gastric cancer, a personal history of gastric or duodenal ulcer, immunosuppressive diseases or drugs, and severe smoking (2). In our patient, there was a history of gastric cancer in her grandfather and she had also been suffering from early satiety, postprandial fullness and loss of appetite for several months, which necessitated the urgent upper gastrointestinal endoscopy for early diagnosis of gastric cancer.

Chronic infection with *Helicobacter pylori* (*Hp*) is associated with an elevated risk of developing gastric carcinoma (8). For the diagnosis of the infection in primary care, it is strongly recommended that urea breath test or stool antigen test be used. Screening for *Hp* inside and outside of pregnancy is only advisable for dyspeptic patients. Patients with alarm symptoms and signs require prompt endoscopic investigation (9). Unfortunately, the *Hp* status of our patient could not be assessed because upper gastrointestinal endoscopy was not performed in our hospital and the patient refused a second endoscopic investigation.

In any case of gastric cancer in pregnancy, a patient's management should be planned according to the guidelines summarized by Ueo et al. (3). In early pregnancy, termination must be discussed to allow optimal treatment. As in this case, in advanced gastric cancer diagnosed in the first trimester, the standard approach is palliative chemotherapy following termination of pregnancy. Thus, herein, the patient's pregnancy was terminated before the chemotherapy. Beyond 24 weeks of gestation, the decision depends on the stage of gastric cancer. If the cancer is advanced and considered resectable, immediate resection of the gastric cancer is recommended despite the risk to the fetus. After week 30, the fetus should be delivered followed by radical operation on the gastric cancer (3).

In conclusion, the only means of possibly improving the prognosis of gastric cancer in pregnancy is detect it at earlier stages. Although rare under the age of 30, clinicians should take this into consideration in the differential diagnosis of persistent epigastric complaint during pregnancy. An extensive diagnostic workup including upper gastrointestinal endoscopy is advisable in patients at risk before empiric treatment with antacid medications.

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