



Abnormal Liver Function Tests in a Pregnant Woman with Metastatic Colon Adenocarcinoma: A Case Report

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Abstract

Introduction: Colon cancer is the third leading cause of cancer death in women. Symptoms of colon cancer, such as nausea, abnormal bowel movements, and rectal bleeding, overlap with the symptoms of pregnancy, which may lead to delays in diagnosis and treatment. In this study, a case of abnormal liver function tests in a pregnant woman with metastatic colon adenocarcinoma was reported.

Case Presentation: A 26-year-old woman, nulligravid (gestational age: 28 weeks and 6 days) was referred to our hospital with suspected preeclampsia and the possible HELLP syndrome. In evaluation of laboratory tests, hemoglobin decreased and aspartate aminotransferase, alanine aminotransferase, lactate dehydrogenase, bilirubin total, alkaline phosphatase increased. Ursodeoxycholic acid was prescribed to the patient due to impaired liver function tests and suspected cholestasis, and the patient was discharged due to the decline in liver function tests. After 18 days, the patient presented with a complaint of premature onset of labor pain, which was initially transferred to the operating room for emergency cesarean section due to fetal heart failure. After cutting the abdomen, a large amount of purulent fluid was removed and extensive adhesions were observed. Biopsy of lesions, metastatic adenocarcinoma in the intestine with metastases to the right ovary, peritoneum, liver and appendix was reported. Finally, PCR test for COVID-19 was positive and the patient died of sepsis.

Conclusions: It is recommended that the occurrence of gastrointestinal symptoms, pruritus, pain and abnormal liver function tests in pregnancy be considered as an important alarm and also in the differential diagnosis of gastrointestinal malignancies.

INTRODUCTION

Recently, malignancies during pregnancy have become one of the main causes of maternal death in developed countries. The incidence of malignancy during pregnancy has 0.07–0.1% of all malignant tumors [1, 2]. Colon cancer is the third cause of cancer-related deaths in women [3]. The prevalence of colon cancer in pregnant women is 1 in 13,000(1). More than 80% of

colon cancer in pregnant women occurs in the rectum [4]. Colon cancer occurs during pregnancy even in young women without a family history. Patients may mistake colon cancer symptoms such as nausea, abnormal bowel movements, and rectal bleeding for symptoms of pregnancy, which may lead to delays in diagnosis and treatment. These tumors are usually

associated with poor differentiation and a higher metastatic potential, resulting in a poor prognosis [5]. Colon cancer treatment during pregnancy is challenging and complex and depends on tumor stage and gestational age. In addition, there is very limited information about the efficacy and safety of treatment methods during pregnancy [6, 7]. Diagnosing colon cancers during pregnancy is complicated due to possible risks of imaging methods. Colonoscopy is the main method for diagnosing colon cancers. It is believed that its use in pregnancy has little risk [8]. When staging colon cancer during pregnancy, maternal interest should be weighed against fetal risk, and non-ionizing methods should be prioritized. Abdominal ultrasound can detect liver metastases larger than one centimeter, but it has an average sensitivity of 50-76%, which requires further research [9]. In this study, a case of abnormal liver function tests in a pregnant woman with metastatic colon adenocarcinoma is reported.

CASE PRESENTATION

A 26-year-old pregnant woman (gestational age: 28 weeks and 6 days) was referred to our hospital (Bent Al-Hoda Bojnourd Hospital in 2021) with suspicion of preeclampsia and possible HELLP syndrome. The history taken from the patient showed that the patient had no peridermal symptoms, was itchy, and had a slight pain in the lower right part of the abdomen, and was diagnosed with gestational diabetes 10 days ago, which was controlled with diet. In laboratory tests, hemoglobin: 7.3 g/dL, hematocrit: 24.5%, platelets: 457 thousand, white blood cell count: 12.1%, Creatine: 0.55, urea: 24, aspartate aminotransferase: 108, alanine aminotransferase: 153, lactate dehydrogenase: 348, total bilirubin: 1.7, alkaline phosphatase: 1102, PT: 13, INR: 1, hematology and internal consultation was requested for the patient. The hematologist diagnosed anemia and prescribed 2 pack cell units for the patient. In the internal consultation, the internist requested an abdominal ultrasound and liver tests for the patient. In the ultrasound examination, the gestational age was 29 weeks and 4 days. The liver had a normal shape and size and echo, the gallbladder had a normal volume and current thickness and contained a brief amount of sludge, and no ectasia was observed in the bile duct and intrahepatic, and no stones were observed. In the re-evaluation of laboratory tests, hemoglobin (6.4 g/dL), hematocrit (21.2 percent), platelets (341 thousand) decreased and aspartate aminotransferase (135), alanine aminotransferase (195), lactate dehydrogenase (348), total bilirubin (1.7), alkaline phosphatase (1002) increased, and according to liver function tests disorder and suspicion of cholestasis, ursodeoxycholic acid was prescribed to the patient. Laboratory tests were reviewed. Four days after the administration of ursodeoxycholic acid (aspartate aminotransferase (68),

alanine aminotransferase (134), alkaline phosphatase (671), the patient was discharged in good general condition due to the downward course of liver function tests. After 18 days, the patient was again referred to our hospital with the complaint of premature onset of labor pains (gestational age: 31 weeks and 3 days), who was transferred to the operating room for an emergency cesarean section due to fetal heart rhythm disorder upon arrival. After abdominal incision, a large amount of purulent fluid was discharged and extensive adhesions were observed, meanwhile the surgeon was called. The surgeon came immediately and examined the adhesions, and noticed an abscess and infectious collection in the appendix and cecum. After searching the abdomen, metastatic areas were seen in the liver and abdominal wall, and biopsies from these areas were sent for pathology. During the release of the adhesions, the colon was damaged, but due to the poor condition of the patient, a colostomy was not implanted and the patient was sent to a more equipped hospital after the surgery. Biopsy of the lesions revealed metastatic adenocarcinoma in the intestine with metastasis to the right ovary, peritoneum, liver and appendix. Finally, the patient's PCR test for Covid-19 was positive and the patient died due to sepsis. This study has been registered in the Research Ethics Committee of North Khorasan University of Medical Sciences (ethics code IR.NKUMS.REC.1400.074).

DISCUSSION

The present study is a case report of abnormal liver function tests in a pregnant woman with metastatic colon adenocarcinoma. Our patient was 26 years old and had no risk factors for colon cancer. Having colon cancer at a young age often appears in a more advanced and aggressive stage [10, 11]. Compared to the general population, colon cancer in pregnancy is usually diagnosed at a more advanced stage and is more associated with perforation and obstruction [6, 12]. This may be due to delayed diagnosis and rapid tumor growth during pregnancy. It is assumed that the physiological changes that support normal pregnancy, such as the increase of growth factors, including malignant cells, will lead to rapid tumor growth [13]. In addition to the increased incidence, young people (less than 40 years old) with colon cancer have a worse prognosis than older patients. The reasons for these observations are not clear but may be related to the aggressive biology of the tumor [14]. Our patient had experienced abdominal pain and itching in the 28th week of pregnancy and had not shown any symptoms until that moment [15]. Symptoms of colon cancer usually include nausea, vomiting, abdominal pain, and changes in bowel movements [16, 17]. Early diagnosis of colon cancer during pregnancy is difficult because the disease does not show specific symptoms and its

symptoms in the absence of obstruction or perforation are similar to physiological changes during pregnancy [18]. In our patient, there was an abscess and collection in the appendix and cecum. Therefore, this necessitates at least a simple rectal examination in suspected cases, and most of them (60%) are in the third and advanced stages and are associated with poor pregnancy outcomes in the second and third trimesters of pregnancy [19]. In the present study, due to the disturbance in the liver function tests and the suspicion of cholestasis, the patient was prescribed ursodeoxycholic acid drug, and after the administration of this drug, the liver function tests decreased. The results of studies in the field of the most accurate and efficient biochemical tests for the diagnosis of metastasis are contradictory. Liver function test and carcinoembryonic antigen are often evaluated in the follow-up of patients with colon and rectal carcinoma [20]. Finally, it is suggested that the evaluation of anemia in similar patients be done more carefully. In the follow-up of chronic anemia, it may be helpful to perform more tests such as the evaluation of occult blood in the stool.

CONCLUSION

Physiological and anatomical changes in pregnancy may overlap with the clinical manifestations of colon cancer and lead to delayed diagnosis. Therefore, it is recommended that the occurrence of gastrointestinal

symptoms, itching, pain, and the abnormality of liver function tests in pregnancy should be considered as an important alarm, and attention should also be paid to gastrointestinal malignancies in the differential diagnosis.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

ETHICAL CONSIDERATION

In the writing of the article, the confidentiality of the patient's personal information, records and radiograph was respected. Also the study is registered with code of ethics IR.NKUMS.REC.1400.074.

AUTHOR CONTRIBUTION

Conceptualization: FRF, KH N

Collected the data: FRF, KH N, SH M

Contributed data or analysis tools: FRF, K A

Wrote the paper and editing: FRF, KH N, SH M, K A

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