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Case Report

Peripartum Rectal Cancer: A Case Report

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ABSTRACT

Colorectal cancer is a rare complication of pregnancy whose diagnosis is often obscured by common symptoms in pregnancy. We herein describe a case where metastatic colorectal cancer presented as refractory constipation, followed by large bowel obstruction during the third trimester of pregnancy. We highlight the challenges of diagnosis during pregnancy as well as a rare complication of gastrointestinal emergency following preterm labor and cesarean section. This case suggests that delaying diagnosis of colorectal cancer increases the risk of acute complications and preterm delivery.

Introduction

The presentation of colorectal cancer is a rare but challenging complication of pregnancy. The incidence of colorectal cancer during pregnancy is approximately 1-3 in 10,000 births [1]. The most common presentations include rectal bleeding, constipation, and abdominal pain. Some evidence suggests that colorectal cancer is most often diagnosed in the third trimester, but a recent review disputes this [2,3]. The average age of diagnosis in this population was 32 years. A minority of patients undergoes chemotherapy during pregnancy, and one third of patients undergo surgical resection of the rectum in the peripartum period. The average survival was 36 months, although there are significant limitations in follow up according to one meta-analysis [1]. Because colon cancer is a rare complication of pregnancy that often masks its symptoms with common complaints of pregnancy, it continues to be a diagnostic challenge for clinicians. We present a case of peripartum diagnosis of rectal adenocarcinoma with acute large bowel obstruction.

Case

The patient is a 27-year-old gravida three para two at 33 weeks 2 days gestation who presented as a transport from another facility with

severe abdominal pain and a history of refractory constipation. Her past medical history was notable for hepatic cancer that was resected at age 7, with no recurrence since surgical treatment. Records were unavailable. Since this patient was adopted her family history is unavailable. She was seen by her primary provider throughout her pregnancy for constipation that did not improve with stool softeners, suppositories, enemas, and multiple laxatives. In the month prior to her transfer, she noted worsening abdominal pain complicated by nausea and vomiting. At the outside hospital, an obstetric ultrasound was performed and confirmed a live intrauterine pregnancy with normal amniotic fluid and a normal appearing placenta. On admission, her vital signs were all within normal limits. Her exam on admission was notable for distention, non focal tenderness, and normoactive bowel sounds. Digital rectal exam was not performed initially as the patient noted passage of some small stools with enema administration and she had no bright red blood per rectum. Fetal status was reassuring, with consistently category I fetal heart tracing with preterm contractions noted but a closed cervix. Laboratory findings that included a complete blood count, comprehensive metabolic panel, and lipase were notable for thrombocytosis (537 K/uL) but were otherwise within normal limits. She was noted to have anemia, her hemoglobin was 10.4 gm/dL. The lower limit of normal

during the third trimester of pregnancy is 10.5gm/dL. An abdominal x-ray found air filled loops of large bowel, but no intraperitoneal free air. A following MRI was notable for air filled loops of bowel, no evidence of small bowel obstruction, and multiple hepatic lesions. The largest mass was noted to be 7.8 cm. There was a large amount of stool noted, but no mass identified. A nasogastric tube was placed, and general surgery was consulted. Her condition did not improve with bowel decompression, and she noted worsening contractions.

On hospital day 2 her contractions acutely worsened, and a pelvic exam was notable for 1cm dilation, 100% effacement. Secondary to breech position, preterm labor, and worsening maternal pain a primary cesarean section was recommended by the maternal fetal medicine service. A vertical midline incision was completed, and a low transverse cesarean section was performed without complication. A live female infant weighing 2010g and with Apgar scores of 5 and 8 was delivered. General surgery was present and completed an exploratory laparotomy. During their evaluation, they noted a large liver mass as well as a large mass in the rectum which was initially thought to be a stool ball. There were no peritoneal, serosal or diaphragmatic metastasis noted. The large bowel was distended from the cecum but appeared viable at this time. At the time of this initial evaluation, the general surgery team discussed the case intraoperatively with colorectal surgery who would be better suited to care for the complex disease noted during the case. After closure of the abdominal incision, a rectal exam was performed that was notable for a rectal mass and subsequent bright red bleeding. A rigid sigmoidoscopy was completed which identified numerous polypoid lesions and a polypoid mass that had previously been thought to be a mass of stool, and biopsy was obtained. The patient recovered from anesthesia without complications. However, she continued to complain of abdominal pain and was noted to be distended. Abdominal radiograph showed a dilated cecum measuring 10 cm. Colorectal surgery was consulted on hospital day 3 and performed an emergent sigmoidoscopy that found an obstructing polypoid mass approximately 7 cm from the Exploratory laparotomy and loop sigmoid colostomy was performed to alleviate the obstruction.

Postoperatively she was transferred to the intensive care unit where her diet was slowly advanced as she began meeting postoperative milestones. Computed tomography of the chest, abdomen, and pelvis was performed, and an incidental pulmonary embolus was noted despite postoperative venothromboembolism prophylaxis with enoxaparin. Using the American Joint Committee on Cancer Staging, she was diagnosed with Stage IVB colorectal adenocarcinoma, with an 8cm rectal mass, 3cm presacral and perirectal mass and multiple metastasis to the liver. Histology confirmed well differentiated adenocarcinoma, with intact Mismatch Repair protein expression. Her Carcinoembryonic Antigen levels were elevated at 69.8, Carbohydrate Antigen 19-9 was also elevated at 9834, and Cancer Antigen 125 level was 50. The placenta was examined, and it was pathologically normal. On hospital day nine, a liver biopsy was performed by interventional radiology that confirmed metastatic disease. Her postoperative course was otherwise uncomplicated, and she was transferred from the ICU on hospital day nine, and discharged home on hospital day 14. Prior to discharge, she was established with the medical oncology team, psychiatry and palliative care. She is now undergoing chemotherapy with 5-fluorouracil, leucovorin, and oxaliplatin (FOLFOX) and has plans to follow with radiotherapy for local control.

Her infant's neonatal course was notable for mild respiratory distress syndrome, hyperbilirubinemia, and hypoglycemia. Infant was discharged at corrected gestational age 35 weeks 2 days without any overt complications of prematurity.

Discussion

The delay in diagnosis and advanced staging of cancer at presentation in this case further establishes that pregnancy masks the symptoms of colon cancer. This is similar to what is described elsewhere. Other case reports in the literature describe rectal bleeding as the first symptom reported, but this patient did not have bleeding prior to her presentation with acute abdominal pain and constipation. Interestingly, she had no change in stool caliber. Her constipation was refractory to common treatments used in pregnancy, and unfortunately the patient had no additional evaluation prior to her acute presentation. There is no evidence that her primary obstetrician completed a rectal exam.

When symptoms of colorectal cancer are noted during pregnancy, a colonoscopy with referral to a specialist is recommended [4]. The patient should be counseled on the risk of sedation for the fetus, and appropriate fetal monitoring is recommended. When possible, ultrasound and MRI are preferred over computerized tomography, as there is decreased radiation exposure to the fetus [4,5]. However, MRI may not be able to distinguish stool from a mass. This was true in our patient and contributed to the delay in diagnosis.

Once the diagnosis is confirmed, treatment recommendations are made based on staging as well as gestational age. Colorectal cancer diagnosed during pregnancy is more commonly advanced [6]. Outside of pregnancy, neoadjuvant chemotherapy is often the indicated treatment of unresectable Stage IV colorectal cancer [8-10]. The decision to start chemotherapy during pregnancy is a challenging decision and should include thorough discussions with the patient and her family concerning maternal and fetal consequences of antepartum treatment. A multidisciplinary approach is essential to supporting the patient through treatment options. A team of providers including the surgical oncologist, neonatologist, medical oncologist and maternal-fetal medicine specialist are integral when addressing Chemotherapy is not recommended in the first trimester, and termination prior to therapy may be considered [11]. The rate of congenital malformations decreases with gestational age, and is 16%, 8%, 6% in the first, second and third trimesters respectively [4]. FOLFOX is a common regimen that is recommended for advanced colorectal cancer, and it has been used in pregnancy without adverse outcomes [12]. Notably, there is limited evidence to support this, as it is described in case studies alone.

In pregnancies complicated by earlier stage colorectal cancer, surgery may be considered with curative intent [5]. The second trimester is the optimal time for surgical intervention, as it poses the least risks to the developing fetus. Optimal surgical approach should be determined by the surgical oncologist, and a recent Cochrane review demonstrated no difference between laparoscopic and open approaches [13,14]. Again, the second trimester is optimal in consideration of the gravid uterus and laparoscopic approach. In the literature, the majority of surgical interventions occur after delivery or termination [6,15]. Rarely, surgical intervention is warranted secondary to an emergency such as bowel perforation or ileus [16].

The timing of delivery should be based on maternal and fetal indications [17]. If feasible, preterm delivery should be avoided. In this case, worsening maternal condition and preterm labor did not make expectant management prudent. Although experts recommend avoiding preterm delivery and its associated neonatal morbidity, the majority of women diagnosed with cancer in pregnancy undergo iatrogenic preterm delivery with the malignancy cited as the cause [4,5]. Antenatal corticosteroids for fetal lung maturity should be given prior to delivery whenever possible. Of note, neonatal morbidity and mortality is associated with the consequences of prematurity, and there is no evidence that neonates are adversely impacted by maternal malignancy [18]. In this case, pathologic examination of the placenta was unremarkable.

In the postpartum period, continued involvement of obstetrician gynecologists is important in order to counsel patients about future reproduction and contraceptive options. This is especially important of the cases of ovarian metastasis which occurs in up to 25% of colorectal cancers diagnosed during pregnancy [9]. When desired by the patient, fertility sparing treatment is generally possible. The patient may also consider consultation with a reproductive, endocrine, and infertility specialist to explore egg and embryo banking [4]. Colorectal cancer is not an absolute contraindication for any method of contraception, but efficacy and increased thrombotic risk should be reviewed with the patient during counseling [19]. Survivors are recommended to be 2 years disease-free prior to conceiving any future pregnancies [4]. In successful pregnancies after remission, obstetric outcomes are similar with the exception of increased cesarean section rates [17].

Although a rare complication of pregnancy, the presentation of colorectal cancer provides a challenge in diagnosis and management that requires a multidisciplinary approach. A clinical suspicion of malignancy is important for obstetricians, especially when confronted with symptoms that do not resolve with conventional management. In addition, when a diagnosis is confirmed, early involvement of specialists and thorough counseling concerning therapeutic options is important in optimizing maternal and fetal outcomes. As discussed in this case, the obstetrician is often the first provider faced with addressing the symptoms of malignancy and has the opportunity to aid in the early diagnosis and may help guide the patient-centered team necessary after a cancer diagnosis. Finally, obstetricians have specialized knowledge in contraception and reproductive healthcare crucial in helping women make reproductive decisions after delivery.

Conflict of Interest

The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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