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Case Report

Colorectal adenocarcinoma in pregnancy: intraoperative finding in a patient with intestinal obstruction

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ABSTRACT

Colorectal cancer, a common malignancy with significant morbidity and mortality, is infrequently encountered during pregnancy. This rare overlap of conditions creates a formidable diagnostic. The therapeutic approach is equally complex, involving difficult decisions on whether to delay treatment until after delivery or to pursue immediate intervention, all while considering the impact on both maternal and fetal health. This case highlights the need for heightened awareness among clinicians, as well as the development of clear protocols to guide the management of colorectal cancer in pregnant patients. In the current case report we describe and document the incidental intraoperative findings of a colorectal adenocarcinoma in a 27-year-old patient with 20 weeks of pregnancy presenting with clinical symptoms of intestinal obstruction. We present the difficult diagnostic and therapeutic approach involving the decision on the treatment of an acute pathology as is intestinal obstruction. As well as to assess whether or not to start systemic oncological therapy and whether or not to end the pregnancy.

Keywords: Colorectal cancer, Pregnancy

INTRODUCTION

Colorectal cancer, a common malignancy with significant morbidity and mortality, is infrequently encountered during pregnancy, with an incidence of just 0.07%. This rare overlap of conditions creates a formidable diagnostic challenge, as the symptoms often mimic those of normal pregnancy, potentially delaying a timely diagnosis.[1] Moreover, the need to limit fetal exposure to radiation further complicates the diagnostic process, requiring clinicians to employ alternative imaging strategies or rely heavily on clinical judgment. The therapeutic approach is equally complex, involving difficult decisions on whether to delay treatment until after delivery or to pursue immediate intervention, all while considering the impact on both maternal and fetal health.[2] The involvement of a multidisciplinary team is critical to navigate these challenges and ensure the best possible outcomes. This case highlights the need for heightened awareness among clinicians, as well as the development of clear protocols to guide the management of colorectal cancer in pregnant patients.[3]

CASE REPORT

We present the case of a 27-year-old female patient with a normally developing pregnancy of 20.6 weeks of gestation, who presented to the emergency room with a history of 15 days of bowel movement arrest, abdominal distension, nausea, vomiting of biliary contents and diffuse abdominal pain with a score of 8/10 on the visual analogue scale. She denied any significant surgical or personal pathological history. Upon questioning about organs and systems, the patient reported a 2-year history of asthenia and adynamia, in addition to an unintentional weight loss

of approximately 20 kg in the 5 months prior to admission. Her family history was inquired about, which was denied.

On directed examination, a globose abdomen was observed at the expense of the pregnant uterus, pain on superficial and deep palpation in a diffuse manner, tympanic on percussion and with the presence of peristaltic sounds increased in intensity and frequency, a collapsed ampulla on rectal examination, with no presence of feces in a witness glove. Based on these findings, the patient was admitted and an abdominal X-ray was taken in a standing position, which showed dilatation of the intestinal loops throughout their entire length and of the entire colonic framework (Figure 1).

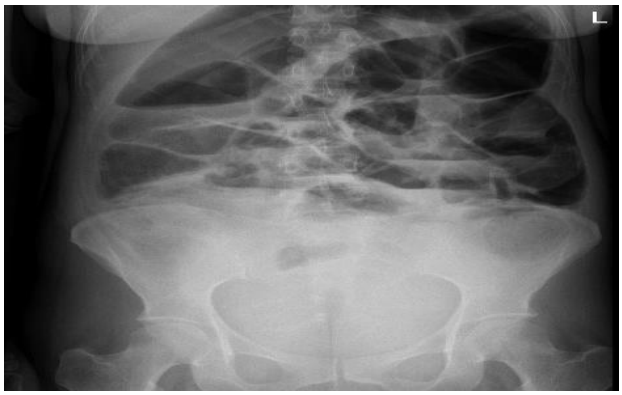

Figure 1: Abdominal X-ray in standing position with dilation of small intestine loops with presence of air-fluid levels.

For this reason, medical management for intestinal obstruction was started with fasting, intravenous hydration and nasogastric tube. The patient's evolution was unfavorable and on the 2nd day of hospital stay she continued to have abdominal distension and pain with the characteristics described above. For this reason, the risk-benefit ratio was assessed and a simple axial tomography was performed, which showed a transition zone at the rectosigmoid junction with significant dilation of the proximal intestinal loops (Figures 2a and b). Emergency surgery was decided upon, a decision based on clinical and imaging findings. Under general anesthesia and with constant monitoring of the maternal-fetal pair, a 10 cm infraumbilical incision was made, dissected in layers until reaching the peritoneum. Upon entering the cavity, the intestinal loops were immediately seen to protrude with dilation along their entire length (Figure 3c). The loops were eviscerated and the colon was inspected along its entire length, where a 5 cm stony tumor was identified at the level of the rectosigmoid junction, 15 cm from the anal margin (Figure 3a and b). The resection of 10cm of the sigmoid colon was continued, including the tumor. The gravid uterus no longer allowed further resection without compromising the fetus viability. Obtaining macroscopic free margins with 3 cm of margin proximal and 2 cm distal from the tumor. A manual end-to-end anastomosis was performed in two planes with subsequent defunctionalization by means of a loop ileostomy using the Brook technique. A Jackson Pratt drain was placed in the left pelvic cavity and the surgical procedure was completed. Histopathologic study, reported colorectal adenocarcinoma with free proximal margins and distal margins in contact with the neoplasia.

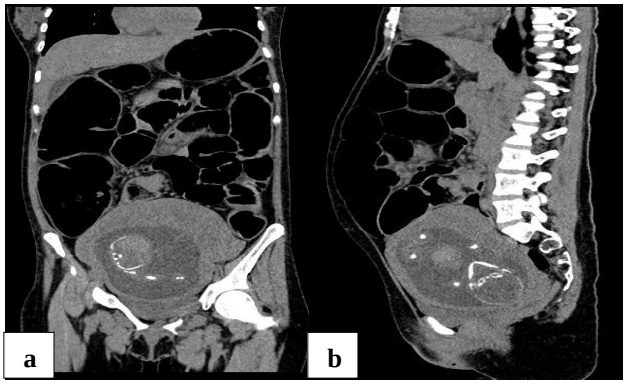

Figure 2: Simple abdominal tomography (a) evidence of dilation of intestinal loops, and (b) presence of transition site at the rectosigmoid junction.

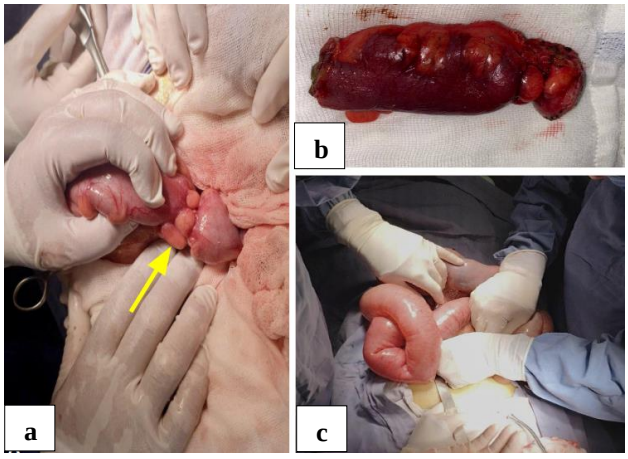

Figure 3: (a) Transition site at the rectosigmoid junction due to intraluminal tumor, (b) resection of 10 cm of sigmoid with negative proximal and positive distal margins, and (c) exit of intestinal loops upon entering the abdominal cavity.

Exophytic lesion protruding with light, hourglass-shaped lesion with contraction, moderately differentiated colon adenocarcinoma G2 stage T3N1A M0 (Figure 4a and b).

After the surgical event, the patient was discharged from the operating room to the joint hospitalization area with good clinical evolution and a fetal heart rate reported at 150 beats per minute. The ileostomy was patient with intestinal discharges.

Patient who continues with favorable evolution and was discharged with referral to the medical oncology service for therapeutic approach session.

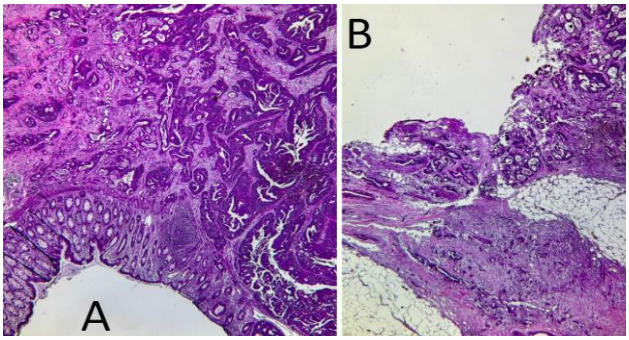

Figure 4: (A) Panoramic view from left to right, transition of apparently healthy colon, with ovoid glandular and preserved morphology towards the right side, neoplasia invades muscle forming lumens and finger-like projections; and (B) moderately differentiated adenocarcinoma with pleomorphism and moderate nuclear atypicality (grade 2) Invades muscle and pericolic adipose tissue (T3).

DISCUSSION

Colorectal cancer is the fifth most common new cancer diagnosis and cause of cancer-related death worldwide. In the United States approximately 153,000 new cases of large bowel cancer are diagnosed annually. This type of cancer remains one of the most common malignancies, with variations in incidence influenced by factors such as diet, genetics, and screening practices.[4] These patients may present in one of three ways suspicious signs and symptoms, asymptomatic individuals discovered by routine screening, or admitted through emergency secondary to intestinal obstruction, perforation or acute bleeding; as was the case with our patient that presents with an intestinal obstruction. Typical signs and symptoms include abdominal pain, anemia, and changes in bowel habits.[5,6] Changes in bowel habits are the most common symptoms present in 74 percent of the patients.[7]

The diagnosis is confirmed by histologic examination through biopsy during colonoscopy or from a surgical specimen as in the case of our patient. Parameters that are important to assess include grade, depth of penetration, number of total and positive lymph nodes, status of margins, lymphovascular invasion, perineurel invasion, and any tumor deposits.[8] Most of the cancers arising in the colon and rectum are adenocarcinomas. Currently most of the patients are found through screening however this isn't the case in our patient due to her young age and the absence of family history of colon cancer. Raising the question is it time to reduce the age to start screening? Another screening method is the computed tomography (CT) colonography that has a similar diagnostic yield for detecting cancer and large polyps. A CT was performed in this case not as a screening method but as diagnostic for the intestinal obstruction. However, the decision to perform this study was taken into consideration due to the exposure to radiation in a pregnant patient.[9] For staging the system of TNM (eight edition) combines American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC), being currently the method recommended for the staging. Following this staging system our patient presents a T3/N1c/M0 having a stage group IIIB.[10,11]

Surgery is the cornerstone of curative therapy for colorectal adenocarcinoma, this depends on the clinical stage, size, and location of the primary tumor.[11] However patients with advanced disease being T2 or greater can benefit from neoadjuvant therapy prior to local excision, even recurring adjuvant treatment after local excision. The Surgical management could be divided in three groups local resection, radical resection and multivisceral resection. Local resection is suggested in early stage disease (less than T2). Radical resection transabdominal surgery is usually advised, unless the patient refuses it, or has a medical comorbidity or severely limited life expectancy that precludes open surgery. Like our patient that specifically denied any procedure that could alter the fetus and emphasized wanting to continue with the pregnancy. The alternative treatments are low anterior resections with preservation of the sphincter or an abdominoperineal resection. Patients with invasive rectal adenocarcinomas who are not candidates for local excision should undergo radical transabdominal surgery. A tumor in the upper and middle rectum can usually be managed with a sphincter-sparing procedure, such as low anterior resection if a negative distal margin can be achieved. An abdominoperineal resection is the gold standard for invasive (T2 to T4) low-lying rectal cancers or patients with poor presurgical anorectal function, having the disadvantage of a permanent colostomy. Multivisceral resection procedures like total or partial pelvic exenteration is recommended in patients with T4 that invades adjacent organs or recurrent cancer.[12,13]

Despite screening and treatment previously described 20 percent of colorectal cancer presents as tumor-related emergencies this include bleeding, obstruction, and perforation. As is the case of our patient that presented with an intestinal obstruction.[14] Obstruction or perforation, carry a poor prognosis, independent of stage. As previously mentioned, advanced disease benefits from neoadjuvant therapy prior to local excision, even recurring adjuvant treatment after local excision.[15-17] However, in the case of our patient she emphasized in wanting to continue the pregnancy deferring adjuvant treatment until after the pregnancy is finished.

CONCLUSION

A multidisciplinary approach is of utmost importance in the management of a pregnant patient with oncological pathology requiring urgent abdominal surgery. Not only are there issues to be discussed regarding the most current evidence available, but also ethical and moral aspects that make the case even more complex, related to a pathology with an extremely rare incidence and that forces the treating physician to integrate an etiological diagnosis of

possible genetic syndromes related to colorectal cancer due to the early age of presentation. As well as to assess whether or not to start systemic oncological therapy and whether or not to end the pregnancy.

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