Good Outcome of Early-Stage Rectal Cancer Diagnosed During Pregnancy

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Patient: Female, 30-year-old
Final Diagnosis: Early detection of rectal cancer in pregnancy with good outcome
Symptoms: Rectal bleeding
Medication: —
Clinical Procedure: —
Specialty: Obstetrics and Gynecology

Objective: Unusual clinical course

Background: Colorectal cancer (CRC) in pregnancy is very rare. It is often associated with poor prognosis which is contribut-
ed to delayed diagnosis due to the overlapping symptoms of CRC and pregnancy. The purpose of this case re-
port is to highlight the importance of early diagnosis and treatment of CRC in a young pregnant patient with
good maternal and fetal outcomes.

Case Report: A 30-year-old patient, gravida 3, presented at 9-week gestation with a history of sudden painless, fresh, rec-
tal bleeding with no aggravating factors such as constipation or hemorrhoids. Sigmoidoscopy showed a small
fungating, intramural mass, 40 cm from the anal verge, which easily bled upon touch. The rest of the colon up
to the terminal ilium was normal. The mass was completely removed during the sigmoidoscopy procedure, and
the histopathological diagnosis was a tubulovillous adenoma with focal intramucosal carcinoma. After the pol-
ypectomy procedure, the patient had an uneventful, bleeding-free pregnancy and delivered a healthy baby at
full term. The sigmoidoscopy procedure was considered to be both diagnostic and therapeutic since the entire
mass was completely removed.

Conclusions: Early diagnosis and intervention are critical in improving the overall outcome of CRC in pregnancy and requires
a high index of clinical suspicion. Taking a detailed patient history, exercising attentiveness, and conducting
thorough investigations of all symptomatic pregnant women are recommended. Treatment options should in-
volve a multidisciplinary team with consideration to the patient’s own choices.

MeSH Keywords: Colorectal Neoplasms • Pregnancy Outcome • Sigmoidoscopy

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Background

Colorectal cancer (CRC) is the second most common type of cancer in women and it is a leading cause of death in women of childbearing age [1]. About 20–30% of CRC cases have an identifiable predisposing factor. These factors include a family history of CRC, cancer-predisposing genetic syndromes, and inflammatory bowel diseases [2].

In pregnancy, the most common types of cancer are breast and cervical cancer, hematological malignancies, and melanoma, followed by thyroid cancer, lung cancer, carcinoma, and various types of sarcomas [3]. CRC in pregnancy is rare and it is estimated to occur in just 0.002% of all pregnancies [1,3–5], making it the seventh most common type of cancer in pregnant women [4,6].

The overlap between some symptoms of CRC and pregnancy (e.g., constipation, abdominal pain, nausea, vomiting, anemia, and rectal bleeding, which are often misattributed in pregnant women to the presence of hemorrhoids or anal fissures) and the reluctance of medical teams to conduct diagnostic tests due to potential risks to the fetus, often lead to a delayed diagnosis, thus complicating treatment and worsening the prognosis.

In fact, colon obstruction, perforation, and metastasis are more frequent in pregnant women with CRC than in non-pregnant women with CRC [4]. The purpose of this case report is to contribute to the body of data on the occurrence of CRC in young pregnant women (<40 years) and to highlight the importance of a higher index of suspicion and diligence in investigating non-obstetric causes of persistent and unusual symptoms during pregnancy, including malignancies. Our patient’s CRC was detected at a very early stage and very early in her pregnancy (at 9 weeks’ gestation). The mass was completely removed during a lower-gastrointestinal endoscopy and she vaginally delivered a healthy female infant with no complications.

Case Report

A 30-year-old patient, gravida 3, presented with a history of sudden painless, fresh, rectal bleeding twice during a period of 3 months, with no aggravating factors such as constipation or hemorrhoids. She had a history of 2 full-term, uncomplicated pregnancies and she was not known to have any previous medical conditions or surgeries.

The patient did not give a history of trauma, fever, weight loss, altered bowel habits, or drug use. She was admitted for further investigations. Results of laboratory tests, including a complete blood count and coagulation profile, were within normal limits.

Ultrasound confirmed fetal viability and gestational age. A multidisciplinary, high-risk pregnancy team was formed to thoroughly investigate the patient and found no compromising fetal organogenesis. The risks and benefits of all radiological procedures were explained to the patient, who decided not to have a CT or an MRI.

Sigmoidoscopy was done under conscious sedation and showed a small, fungating, intramural mass, measuring 3×4 cm, located 40 cm from the anal verge. The mass easily bled upon touch. The rest of the colon up to the terminal ilium was normal. The mass was removed during the sigmoidoscopy procedure and sent for pathological evaluation, which showed a tan, polyoid, and pedunculated mass, measuring 2×1.1×1 cm. The stalk measured 0.5×0.5 cm. Sections showed a tubulovillous adenoma with focal intramucosal carcinoma; stage: TisNX [7]. No stalk invasion was identified. The polyp was completely excised and the surgical resection margin was negative for dysplasia or carcinoma; thus, the procedure was considered diagnostic and eventually therapeutic.

The patient remained under close observation and follow-up throughout her pregnancy, with no recurrent rectal bleeding. Ultrasound examinations performed regularly throughout the pregnancy showed a well-growing fetus with no anomalies. An IPS integrated screening test was not available in our center. Ultrasound for fetal nuchal translucency was performed at 12 weeks’ 4 days’ gestation and showed normal measurements: CRL=59 mm and NT=1.0 mm. Second trimester anatomy scans performed at 21 weeks’ gestation showed normal growth and fetal structure.

The patient refused any follow-up CT or MRI assessments during her pregnancy, despite reassurances of their safety in the second and third trimesters. Hence the histopathological findings of the completely excised polyp were reassuring and the patient’s symptoms had completely disappeared, the colorectal surgical team decided that unless further symptoms appeared
antenatally, radiological assessments would be postponed till after the delivery.

At 40 weeks’ gestation, the patient presented in spontaneous labor and vaginally delivered a healthy baby girl with normal Apgar scores. The placenta was examined and appeared to be normal.

The postpartum period was uneventful and the patient was seen by the colorectal surgical team before discharge and then

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Figure 2. (A) Few foci of high-grade dysplasia are noted and show glandular budding, irregular branching of the crypts, and depletion of goblet cells. (B) Other areas show back-to-back glands and invasion limited to the lamina propria (i.e., carcinoma in situ/intramucosal carcinoma). H&E stain, magnification ×100.

Figure 3. (A, B) High-power magnification microphotographs show severe nuclear atypia with nuclear enlargement, and nuclear hyperchromasia, as well as vesicular nuclei with prominent nucleoli and nuclear pseudostratification. Several mitoses are also seen. H&E stain, magnification ×200.
2 weeks after delivery in the outpatient clinic. She was advised to repeat the colonoscopy procedure after 1 year and then every 3 years thereafter.

Discussion

The carcinogenesis of colorectal cancer in pregnancy is not fully understood, but increased estrogen and progesterone receptors may be involved in the pathogenesis [8]. Colorectal cancer can occur in young women during pregnancy, even without a family history [2]. Furthermore, rectal tumors in the young are usually poorly differentiated, with a higher metastatic potential, resulting in a poor prognosis.

Despite the current low incidence of CRC in pregnancy, the rate is expected to increase due to the increasing number of women delaying childbirth and because the incidence of CRC in younger patients (<40 years) is also on the rise. The mean age of women with CRC during pregnancy has been reported to be 31 years (range, 16-48 years) [4,5].

CRC in pregnancy poses a significant challenge to the medical team, the patient, and her family, with a paucity of data and insufficient clinical experience to confidently advise patients. Its clinical symptoms are often masked by those of pregnancy, thus delaying the correct diagnosis. In addition, the options for safe diagnostic tests are limited and most available treatment modalities, including surgery, which is the mainstay of treatment, radiation therapy, and chemotherapy (depending on the stage of the cancer), pose risks for either the fetus or the mother. Furthermore, in some uncommon circumstances where one is compelled to save either the mother’s life or the baby’s life, ethical and religious deliberations also pose a challenge. It is reported that only 25 out of 32 cases of CRC during pregnancy resulted in healthy live-born infants [1,3,6]. There are no reports of adverse fetal outcomes due to the malignancy itself, even in widespread metastatic diseases [9]; rather, fetal deaths are due to a stillbirth, prematurity, or termination of pregnancy [1,3,6].

Choosing the optimal investigative methods and radiological techniques is a priority during pregnancy to correctly stage patients and limit risk to the fetus. Colonoscopy, although relatively contraindicated during pregnancy [4] due to the possible adverse complications (e.g., placental abruption from the mechanical pressure applied to the uterus, fetal exposure to potential teratogenic medications, or fetal injury resulting from maternal hypoxia or hypotension during the procedure) is the gold standard for a definitive diagnosis. In cases of suspected rectosigmoid cancer during pregnancy, a gentle flexible rectosigmoidoscopy is preferred [4] Abdominal CT is not recommended during the first trimester due to the risk of radiation [1,10,11]. Although abdominal ultrasound and MRI can be employed, the detection of micrometastasis by sonography in not as accurate as CT and although MRI is generally a safe procedure, the use of contrast agents during pregnancy may carry an unverified potential risk [5,12].

The present case report differs from other reported cases of CRC in pregnancy in that our patient was young (30 years) with no family history of CRC and the cancer was discovered very early during her pregnancy. Most of the previously published cases reported advanced stages of CRC that were diagnosed late and had poor prognosis. In many of these cases, the patients had to undergo abortion, chemotherapy and surgical resections.

Clinical guidelines on the management of CRC in pregnancy state that if the diagnosis is made in the first 20 weeks of pregnancy, a delay in treatment can lead to disease progression and endanger the mother’s life. Therefore, the recommendation is to discontinue the pregnancy followed by the appropriate treatment modality based on the stage of the tumor, as in non-pregnant patients [4]. However, our patient’s tumor was detected at an early stage, which prompted a complete resection during a sigmoidoscopy procedure, without endangering the gravid uterus.

Conclusions

Establishing the diagnosis of CRC during pregnancy can be difficult, and a delay in the diagnosis or treatment leads to disease progression and poor outcomes. To the best of our knowledge, this is the first case report on the detection of intramucosal CRC in a polyp during a first-trimester pregnancy with a favorable outcome for both mother and fetus. Although our patient was not at high risk for CRC, a screening program for pregnant women or high-risk women planning a pregnancy may be helpful for early detection and management.

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Conflict of interest

None.
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