

BOWEL OBSTRUCTION IN A PREGNANT PATIENT WITH ILEAL POUCH-ANAL ANASTOMOSIS

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Bowel obstruction is a rare but serious complication of pregnancy for both the mother and the developing fetus. This report describes the case of 17-year-old girl with ileal pouch-anal anastomosis (IPAA). She presented at 36 weeks' gestation with a complete small-bowel obstruction. Because conservative management was unsuccessful, labour was induced to relieve the obstruction or simplify surgery. Soon after spontaneous vaginal delivery she began to pass copious amounts of flatus and stool. The bowel obstruction resolved within hours. This report illustrates how IPAA alters the anatomy of the gastrointestinal tract, placing the ileal pouch at risk from compressive obstruction by the gravid uterus. Induction of labour in a near-term fetus is a reasonable initial method of management in such women.

L'occlusion intestinale est une complication de la grossesse rare mais grave à la fois pour la mère et pour le fœtus. Ce rapport décrit le cas d'une jeune fille de 17 ans qui avait une anastomose entre poche iléale et anus (APIA). À sa 36^e semaine de gestation, elle s'est présentée avec une occlusion complète de l'intestin grêle. Comme le traitement conservateur n'a pas donné de résultat, on a provoqué le travail pour soulager l'occlusion ou simplifier l'intervention chirurgicale. Peu après un accouchement vaginal spontané, elle a commencé à éliminer des volumes importants de flatuosités et de selles. L'occlusion intestinale s'est résorbée en quelques heures. Ce rapport illustre comment l'APIA modifie l'anatomie du tractus gastro-intestinal : l'utérus gravide menace de bloquer la poche iléale par compression. L'induction du travail lorsque le fœtus est presque à terme constitue un premier traitement raisonnable dans de tels cas.

Bowel obstruction is a rare complication of pregnancy. The reported incidence ranges from 1 in 66 431 deliveries to 1 in 1500 deliveries.^{1,2} It has serious implications for both the mother and the developing fetus. Diagnosis is often delayed because many of the manifestations of intestinal obstruction such as nausea, vomiting and abdominal distension can be interpreted as symptoms of pregnancy. This delay in diagnosis is thought to be responsible for the high maternal death rate, which ranges from 6% to 20%.³⁻⁵ Errors in

diagnosis and a reluctance by surgeons to operate may also contribute to the maternal death rate.^{6,7}

The fetal death rate in this condition is alarmingly high, ranging from 26% to 50%.³⁻⁵ Major causes of perinatal death are prematurity and fetal hypoxia secondary to maternal hypotension.

The most common cause of bowel obstruction in pregnancy is adhesions. They account for 55% of the cases of intestinal obstruction.^{3,8} Other causes are volvulus 25%, intussusception 5%, carcinoma 3.7%, hernia 1.4% and appendicitis 0.5%. Other rarer causes ac-

count for the remaining 10% of cases of bowel obstruction.

We report an unusual case of bowel obstruction in a 17-year-old girl with previous colectomy and ileal pouch-anal anastomosis (IPAA) so that others may benefit from our experience. To our knowledge no such case has been reported before.

CASE REPORT

A 17-year-old primigravida with an uncomplicated pregnancy presented to the labour and delivery ward at 36

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weeks' gestation with the chief complaint of diffuse abdominal pain and vomiting. The pain had begun the previous night and was located in the epigastrium. The pain had increased in severity overnight, and that morning the patient started to vomit. She had had 4 episodes of emesis. Her last bowel movement was the previous day and it was normal in colour and consistency. She did not report any melena, bright red blood per rectum, new foods, contact with sick people or recent travel. She did not have any fever, chills or night sweats. She had not passed any flatus since the previous day. Review of her organ systems was negative for respiratory and urinary symptoms. With respect to her pregnancy, she was not having any contractions, vaginal bleeding or rupture of membranes. There was adequate fetal movement and the non-stress test was reactive.

This patient had undergone a total colectomy and mucosal proctectomy with ileal-anal pouch reconstruction at the age of 14 years. This procedure was performed for familial adenomatous polyposis. She had had an episode of a partial small-bowel obstruction 2 years before her pregnancy. The obstruction had responded to conservative management.

On physical examination, she was in no acute distress. She was afebrile, her blood pressure was 125/75 mm Hg and her heart rate was 80 beats/min. Her abdomen was soft and nontender, with no rebound, no guarding and no costovertebral tenderness. Bowel sounds were absent. Her symphysis-fundal height was 35 cm. Rectal examination did not elicit any tenderness, there were no masses and there was no stool. The findings on cardiorespiratory and neurologic examinations were within normal limits.

Laboratory investigations revealed a leukocyte count of $8.1 \times 10^9/L$, a

hemoglobin level of 109 g/L and a platelet count of $237 \times 10^9/L$. Electrolyte levels were all within the normal range as was the serum lactate level. The findings on urine microscopy were normal. Three views of the abdomen, however, demonstrated multiple air-fluid levels and dilated loops of bowel, findings that were consistent with small-bowel obstruction (Fig. 1).

Since she was afebrile, had no leukocytosis, no tachycardia and no localizing abdominal tenderness, conservative management was indicated. Initial management included insertion of a nasogastric tube, intravenous hydration, frequent clinical reassessment and monitoring of her serum electrolyte levels and leukocyte count.

The following day, the patient's degree of abdominal discomfort and pain had increased. She remained afebrile, there was no increase in her leukocyte count and her electrolyte levels were all within normal limits. However, on physical examination she was now tender over the left side of



FIG. 1. The single fetus is in the vertex position. There are multiple air-fluid levels with predominantly fluid-filled small bowel, consistent with distal small-bowel obstruction.

her abdomen periumbilically. There was no rebound or guarding. Repeat abdominal radiography failed to demonstrate any resolution of her small-bowel obstruction. Given the unusual anatomy of the small intestine extending deep into the pelvis, we considered the possibility of direct uterine compression of her pouch as a cause of the obstruction. We decided that induction of labour was a reasonable course to relieve the obstruction. Even if the delivery did not relieve the obstruction, it would simplify any subsequent surgical procedure. If delivery did not occur within 24 hours, a cesarean section was planned with concurrent surgical management of the obstruction.

Induction of labour began at 1000 with 2 mg of prostaglandin gel in the vagina. In 4 hours the patient was in early labour. Her membranes were ruptured and an oxytocin infusion was started. The patient was fully dilated in 6.5 hours and she had a 51-minute second stage. She was delivered of a live baby girl, with Apgar scores of 9 and 9, at 1 and 5 minutes respectively.

Within minutes after delivery the patient passed copious amount of flatus. Within the next 4 hours she had 4 loose watery bowel movements. Her abdominal pain, nausea and vomiting resolved. The following morning the patient had repeat abdominal radiography, which demonstrated complete resolution of her bowel obstruction. Her remaining post-partum course was uncomplicated. She was discharged home well on post-partum day 3.

DISCUSSION

To our knowledge this is the first reported case of bowel obstruction in a pregnant patient with a previous IPAA. This is a procedure that is being increasingly performed for surgi-

cal treatment of either ulcerative colitis or familial adenomatous polyposis.⁵ The average age of women having this procedure is 32 years. This means that a significant number of women with an IPAA will be in their reproductive years.⁹ Pregnancy and delivery have been reported to be safe in women with IPAA. In a series of patients from the Mayo Clinic,¹⁰ 70 women had completed at least 1 pregnancy after IPAA. Stool habits were not significantly altered by pregnancy and childbirth, and there were no reports of bowel obstruction during pregnancy.¹⁰

The fact that no cases of bowel obstruction were reported in the Mayo series is surprising and is probably a function of the small sample size. In general, bowel obstruction in patients with IPAA is common, with 20% of patients being affected at some time after surgery.¹¹ Theoretically, pregnancy would increase the chance of bowel obstruction in these patients, because the creation of the IPAA alters the anatomy of the gastrointestinal tract, placing the ileal pouch at risk of compressive obstruction from the gravid uterus. This risk would be greatest near term, as in our case, particularly with engagement of the fetal head as it wedges itself into the pelvis. This situation is also seen in the normal pregnant population in which bowel obstruction is most common at 16 to 20 weeks' gestation when the uterus ascends out of the pelvis and at 32 to 36 weeks when the fetus enters the pelvis.^{12,13}

Small-bowel obstruction in pregnancy often results in surgery. In a series of 9 bowel obstructions in pregnancy reported by Meyerson and colleagues,¹⁴ 8 (89%) patients required surgery. In our case, conservative management with induction of labour obviated the need for surgery. Delivery of the fetus relieved the uterine

compression on the ilial pouch. Furthermore, even if the obstruction had not been relieved, delivery would have facilitated any future surgical procedure. When the fetus is mature and the patient can be managed conservatively, induction of labour is probably the best initial management. Some authors, such as Donaldson and Parkinson,¹⁵ believe that inducing labour and decreasing uterine size could increase the risk of strangulation. However, there is no evidence to support this theory.

In conclusion, small-bowel obstruction is a rare complication of pregnancy. In patients with IPAA the risk of bowel obstruction is high and may be increased by pregnancy. In patients with bowel obstruction who are close to term, induction of labour may relieve the obstruction and should be considered as part of the initial management.

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