CASE REPORT

Obstructed ileostomy in the third trimester of pregnancy due to compression from the gravid uterus: diagnosis and management

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SUMMARY

Ileostomy obstruction in pregnancy, although rare, is a significant complication with associated morbidity and mortality. Early studies recommended immediate surgical intervention for cases of ileostomy obstruction in pregnancy. We present a case of ileostomy obstruction at 29-week gestation in which a laparotomy was performed for presumed adhesions. When adhesiolysis failed to resolve the obstruction, it became clear that the obstruction was caused by external compression from the enlarging gravid uterus. The remainder of the pregnancy was successfully managed by daily aspiration of bowel contents using a large bore drainage tube, and total parental nutrition. Recent studies have utilised MRI to distinguish between adhesions and uterine compression as the cause of ileostomy obstruction in pregnancy. In the few cases of obstruction caused by uterine compression, patients have been safely managed with conservative therapy, thereby avoiding the risks of surgery.

BACKGROUND

Crohn's disease affects women in their reproductive years and is increasing in prevalence.^{1 2} For some patients, the management of Crohn's disease involves bowel resection and the formation of an ileostomy. Ileostomy obstruction in pregnancy is a rare complication associated with increased maternal and fetal morbidity and mortality. The evidence base for appropriate management of this complication in the obstetric population is limited. Early studies suggest immediate surgical intervention in all cases of ileostomy obstruction.^{3–5} In contrast, recent case reports suggest that ileostomy obstruction caused by the enlarging gravid uterus rather than adhesions may be more common than previously recognised, and can be treated conservatively.^{6–8}

CASE PRESENTATION

A 33-year-old woman, gravida 5 para 1, presented to her local regional hospital emergency department at 29-week gestation with abdominal pain, nausea and vomiting.

A colectomy and defunctioning ileostomy had been performed for Crohn's disease 6 years earlier. The Crohn's disease had since been quiescent. Two years prior to her presentation, the woman had a normal vaginal delivery of a healthy female infant at 34-week gestation following the development of severe pre-eclampsia.

In the emergency department the patient was rehydrated and discharged home with presumed gastroenteritis and dehydration. The following day the patient re-presented with hyperemesis (>20 vomits) and an absence of stomal output for 10 h.

INVESTIGATIONS

An abdominal X-ray did not reveal any pathology. Despite the X-ray finding, a small bowel obstruction was clinically suspected and transfer to a major metropolitan hospital was arranged.

DIFFERENTIAL DIAGNOSIS

The small bowel obstruction was presumed to be a consequence of adhesions and emergency surgery was planned.

TREATMENT

A course of antenatal corticosteroids was administered prior to surgery in preparation for possible preterm delivery. At the time of the vertical midline laparotomy, a few adhesions between the ileum and abdomen were noted. Significant stretching of the small intestine over the gravid uterus to the stomal orifice was also observed. The gut was mobilised and the adhesions divided.

OUTCOME AND FOLLOW-UP

The patient recovered well and had appropriate stomal output the following day. The stoma remained mostly active during the next week, and the patient progressed from clear fluids to a low-residue diet. She was discharged home on day 7 postlaparotomy.

The patient was readmitted to hospital 2 days later following a 24 h period of absent stomal output, nausea and vomiting. The patient did not regain spontaneous stomal output for the remainder of her pregnancy and was started on total parental nutrition (TPN). Management of ileostomy obstruction during this period was with a 24 Fr gauge indwelling catheter inserted through the stoma enabling aspiration of bowel contents daily. Despite being on TPN, the patient lost weight at approximately 1 kg/week. An induction of labour was performed at 37-week gestation and a healthy female infant was born vaginally without complications weighing 2730 g.

The stoma was slow to regain function postpartum. An abdominal CT scan with oral contrast performed 5 days after the birth suggested an ileus with terminal ileitis. Conservative management was

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continued (daily drainage and TPN). The patient was discharged home on day 9 postpartum following the return of normal stomal function. A follow-up visit 2 weeks later found the patient to be tolerating a full diet with the stoma functioning normally. The baby was healthy and breast feeding without issue.

DISCUSSION

The patient's obstructed ileostomy was initially presumed to be the result of adhesions. The subsequent emergent laparotomy was in keeping with the early literature that recommended immediate surgical intervention for any ileostomy obstruction in pregnancy.³⁻⁵ Unfortunately, the laparotomy did not resolve the obstruction. In retrospect, the obstruction was caused by external compression from the 29-week enlarging uterus against the tethered end of the small intestine. Several recent case studies have also documented this phenomenon as a cause for ileostomy obstruction in the third trimester.⁶⁻⁸ In all cases, laparotomy was avoided.

Since 2007, two cases have been published in which MRI was used to correctly diagnose ileostomy obstruction caused by compression from the gravid uterus.^{6,8} In both cases, surgical intervention was avoided and there was return to normal stomal function immediately postpartum. It should be noted that adhesions (assumed to be the major cause of bowel obstruction in pregnancy) are not visible on MRI cross-sectional images; their presence is inferred from the absence of obstructing lesions such as a gravid uterus.⁶ In the situation where uterine compression cannot be demonstrated on MRI, early surgical intervention should be considered.

It is extremely important to distinguish between ileostomy obstruction caused by adhesions and those caused by mechanical compression since treatment for the latter is conservative rather than surgical. Stenting and drainage of the blocked ileostomy by tube or variant has been used in several cases with no complications.^{8,9} In one study a wide bore drainage tube was used to bridge the compressed portion of bowel.⁸ In another, a size 10 endotracheal tube was used to unblock the distorted nipple valve of a Kock pouch that became obstructed by the enlarging uterus at 26 weeks.⁹ Other non-surgical techniques reported to be successful include ileal lavage, massage, hot water bottles and an elemental diet.^{7,10,11}

By recognising external compression by the gravid uterus as a possible mechanism for ileostomy obstruction in the third

trimester, and using MRI to correctly distinguish this cause from that of adhesions, clinicians will be better able to manage patients conservatively and avoid unnecessary surgical interventions.

Learning points

- ▶ Ileostomy obstruction in pregnancy, although rare, is a significant complication with associated morbidity and mortality.
- ▶ MRI enables the clinician to characterise the cause of the obstruction, and in particular, distinguish between adhesions and compression by the enlarging uterus.
- ▶ Non-surgical management of obstruction is safe and avoids the maternal and fetal risks associated with surgical exploration.

Competing interests None.

Patient consent Obtained.

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