



# Uterine Prolapse as a Rare Cause of Intestinal Obstruction: A Case Report and Literature Review

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## Abstract

**Background:** The etiology of pelvic organ prolapse is multifactorial. Age and parity are especially the two most important risk factors for this condition. Small bowel obstruction is one of the most common clinical presentations to the emergency department that can result in significant morbidity and mortality.

**Case presentation:** A 79-year-old woman with a previous history of uterine prolapse and no previous history of intraabdominal surgery or malignancies presented with nausea and vomiting, abdominal pain, and constipation from 2 days ago. Upright and supine x-rays showed dilated small bowel loops and confirmed bowel obstruction. Due to primary obstruction, the patient was a candidate for surgery. During the surgery, we observed that 100 cm of the terminal ileum and the uterus protruded in the vaginal canal and the ileal loops were strangulated. We decided to perform a right hemicolectomy surgery.

**Conclusion:** In patients with uterine prolapse, we suggest a careful examination and consideration of the entrapment of small bowel loops in the prolapse site as a rare cause of small bowel obstruction.

**Keywords:** Case report, Intestinal obstruction, Pelvic organs prolapse, Small bowel obstruction, Uterine prolapse

## 1. Background

Pelvic organ prolapse (POP) is a displacement of pelvic organs, mostly slipping down from their normal position into the vagina. A woman experiencing symptoms due to the "downward displacement" of a pelvic organ must be diagnosed with POP based on good clinical evidence. The most important symptom is seeing or feeling a vaginal bulge. Other symptoms may be seen based on the prolapsed organ, such as bleeding, urinary incontinence, and sexual dysfunction symptoms (1). The etiology of POP is multifactorial. Age and parity are the two most important risk factors for this condition. According to the pelvic organ support study, each decade of life makes the risk double (2). Furthermore, parity and genetics play a role. Multiparous women have higher risks of POP compared to nulliparous women (3).

Small bowel obstruction (SBO) is one of the most common clinical presentations to the emergency department that can result in significant morbidity and mortality. Studies show that up to 20% of all surgical admissions for acute abdomen are secondary to SBO (4,5). SBO can result from intrinsic or extrinsic lesions. In advanced countries, adhesions from a prior laparotomy are the most prevalent causes,

whereas, in less developed countries, advanced hernias, volvuli, and intussusception are usually the underlying pathology. Overall, the most prevalent causes of SBO are adhesions, malignant tumors, hernia (internal or external), inflammatory bowel disease, and volvulus in descending order (6). In this article, we reported a case of small bowel obstruction and strangulation due to the entrapment of small bowel loops in the vaginal canal, which is a rare occurrence in uterine prolapse. According to our search, our patient was the first case of intestinal obstruction due to uterine prolapse that has been reported in Iran. We would therefore like to share our experience with this uncommon patient to gain a better understanding of its varied aspects. Our work has been documented by the CARE guidelines.

## 2. Case Presentation

A 79-year-old woman with a previous history of uterine prolapse presented with nausea, vomiting, and abdominal pain, and was admitted to our hospital. Her nausea and vomiting had started 5 days before and were accompanied by moderate periumbilical and epigastric pain upon presentation. She reported episodes of gas passing that day, although her last episode of defecation was 2 days

ago. She had no previous history of intra-abdominal surgeries, malignancies, or constipation. In physical examination, the patient was confused and lethargic. Her abdomen was moderately distended, and she had mild periumbilical tenderness in deep palpation. No rebound tenderness or abdominal rigidity was noted. A grade 4 vaginal prolapse was observed in the patient. Her vital signs were as followed: a pulse rate of 88 bpm, blood pressure of 100/70 mmHg, respiratory of 18 rpm, and temperature of 36.8°C.

Due to elevated levels of amylase enzyme,

pancreatitis was suspected. In addition, the patient had raised troponin levels and was monitored with serial troponin quantifications, which showed a significant rise. Table 1 shows the patient's lab findings. Based on suggestive symptoms and signs of obstruction, we requested a supine abdominal x-ray for the patient, which showed dilated small bowel loops (Figure 1.A). Considering the signs and symptoms of complete obstruction and according to laboratory tests and physical examinations, she was a candidate for surgery.

**Table 1.** Lab findings

Lab findings	Value
WBC ( $10^3/\mu\text{L}$ )	7.5
Hb (g/dL)	9.3
Platelet ( $10^3/\mu\text{L}$ )	134
PH	7.29
PCO <sub>2</sub> (mmHg)	34.6
HCO <sub>3</sub> (mEq/L)	16.8
Troponin I ( $\mu\text{g/L}$ )	8.8
Urea (mg/dL)	95
Creatinine (mg/dL)	2.0
Sodium (mEq/L)	140
Potassium (mEq/L)	3.8
Amylase (U/L)	119.9
Lipase (U/L)	11



A



B

**Figure 1.** A. Supine abdominal x-ray showing multiple dilated loops of the small bowel. B. Ileum, ileocecal valve, and ascending colon resected during the surgery

During the surgery, we observed that 100 cm of the ileum and the uterus protruded in the vaginal canal and the ileal loops were strangulated. We carefully placed the ileal loops and the uterus back in the abdominal fossa. Uteropexy was performed. Due to the signs of ischemic changes in the ileal loops that extended to the ileocecal valve, we decided to perform a right hemicolectomy surgery (Fig1.B). The ileocolic anastomosis was performed side to side and the colonic stump was closed. There was exudate present peripheral to the uterus; therefore, peritoneal lavage was performed with a warm

normal saline solution. Due to the patient's unstable condition, she was intubated and transferred to the intensive care unit. Despite adequate treatment and supportive care, the patient's condition worsened because of myocardial infarction and the patient passed away 2 days post-operation due to cardiopulmonary arrest.

### 3. Discussion

A rare cause of SBO is an internal hernia. There are at least seven types of internal hernias described by

Meyers, based on the location that in the order of frequency of occurrence include para-duodenal hernia, peri-cecal hernia, hernia through the foramen of Winslow, trans-mesenteric hernia, trans-mesocolic hernia, inter-sigmoid hernia, and retro-anastomotic hernia. Internal hernias cannot be diagnosed by clinical evidence, for which age or gender is not a risk factor (7). In the current case presentation, the ileal loops herniated through the defect caused by uterine prolapse. Although we did not find an exact similar case in our search, one study in 2022 reported a 50-year-old woman with long-standing high-grade POP who presents with urine retention and abdominal pain. Despite the fact that the symptoms improved initially with repositioning of the prolapsed organ, the patient returned 2 days later with obstipation and abdominal pain and underwent a total hysterectomy due to the adhesion of bands between the rectum and the isthmus region of the uterus as well as the resection of 20 cm of gangrenous small bowel proximal to the ileocecal junction (8). Another two studies reported vaginal vault prolapse associated with small bowel obstruction post-hysterectomy. Carley et al. (9) reported an 83-year-old woman with a previous history of endometrial carcinoma who underwent a total abdominal hysterectomy, bilateral oophorectomy, and multiple episodes of radiation in 1983. The patient presented 17 years later with SBO symptoms that had started 2 years prior in association with a vaginal vault prolapse and worsened. In a laparoscopic examination, it was revealed that a loop of small bowel adhered to the apex of the vaginal vault, which was resected due to present necrosis. In our case, there was no history of previous malignancies, surgery, or radiation, and no adhesion was noted between the uterus and ileal loops. Another study reported a 57-year-old woman with a previous history of hysterectomy and post-anesthesia respiratory complications presented with vaginal vault prolapse and SBO symptoms. Because of contraindications for surgery, the patient was treated with a reduction of the prolapse, and the SBO symptoms resolved consequently (10). A similar study in 2019 reported a 77-year-old woman with a history of total abdominal hysterectomy who presented with SBO symptoms and a cystocele, which was managed by manual reduction of the cystocele and a herniated portion of the small bowel by gynecology, with eventual resolving of the symptoms (11).

Multiple studies reported small bowel loops herniation or evisceration following pelvic operations, such as Sacrocolpopexy or sacrospinous fixation. A study in 2013 reported a 62-year-old multiparous woman with a previous history of hysterectomy who underwent Sacrocolpopexy and presented with an enterocele in the vagina several months later, which progressed to vaginal evisceration and acute SBO. As a result, the patient underwent surgery, and a defect in the left side of the

vaginal vault, because of the previous surgery, was detected and repaired. The trapped segment of the small bowel was resected (12). The authors also reviewed two other similar studies, in which patients presented with vaginal evisceration following sacrospinous fixation (13, 14). In another study by Kiby et al. in 2021, an 83-year-old woman with a previous history of radical cystectomy presented with the symptoms of SBO and an incarcerated prolapse. She underwent surgery due to the adhesion of a small part of the bowel to the prolapse (15). It is important to note that early recognition of evisceration in the latter study preserved the herniated loops. In another study in 2012, a 72-year-old woman with a previous history of total hysterectomy and bilateral oophorectomy, and Sacrocolpopexy presented with a pink mass protruding from her vagina, which was managed conservatively at first but became more painful and symptomatic later, and finally, underwent resection of strangulated loops based on the diagnosis of acute SBO (16).

In our case, there was no previous history of intra-abdominal or intra-pelvic surgeries. However, all the cases mentioned in our discussion cited pelvic floor weakness (which was iatrogenic) as a potential cause for the herniation or evisceration of small bowel loops. Pelvic floor weakness is by itself the major etiology for pelvic organ prolapses, and all the related risk factors, such as age and parity, affect pelvic muscle strength. In our case, the patient had a long history of untreated uterine prolapse, which showed pelvic floor weakness. Thus, in addition to many other complications of uterine prolapse, SBO can also be a fatal one. We suggest early management of uterine prolapse and inclining the female population to visit their physician as soon as the symptoms appear. It is also recommended to take uterine prolapse into account as a cause for small bowel obstruction in emergency department patients who have a previous history of pelvic organ prolapse.

#### 4. Conclusion

Small bowel obstruction is a life-threatening condition in emergency departments and may have numerous intrinsic and extrinsic causes. In patients with symptoms of uterine prolapse, we suggest early recognition and thorough care as well as inclining the female population to visit their health care provider in the event of recognizing such symptoms. We also suggest a careful examination and consideration of the entrapment of small bowel loops in the prolapse site as a rare cause of small bowel obstruction.

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## Footnotes

**Conflicts of Interest:** All authors declare no conflicts of interest.

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