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CASE REPORT

Small bowel obstruction (sbo) following normal childbirth

Obstrucción intestinal delgada (oid) tras parto normal

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ABSTRACT

Small bowel obstruction (SBO) following normal childbirth is a rare condition with a high mortality rate. The symptoms are varied and nonspecific, including abdominal pain, abdominal distention, nausea, and vomiting, which means SBO has many differential diagnoses. Postoperative adhesions are the most common risk factor for SB. We present a case of SBO following normal vaginal delivery caused by an adhesion band leading to entrapment and volvulus of the ileum in a patient with a history of appendectomy and pelvic inflammatory disease (PID). A contrast-enhanced CT scan of the abdomen was instrumental in establishing the etiology and diagnosis of SBO. Surgical intervention was performed as the treatment. A 27-year-old woman, gravida 1 para 0, at 39 weeks of gestation, was referred by her obstetrician to the surgery department with complaints of vomiting since the onset of normal vaginal delivery. One day postpartum, her vomiting persisted. Her abdomen became distended and painful, and she was unable to pass gas. On physical examination, the patient appeared severely ill. She was hypotensive (BP: 94/62 mmHg), tachycardic (110 beats/min), tachypneic (26 breaths/min), and had an axillary temperature of 37,8°C. The patient had a history of an appendectomy 15 years ago, vaginal discharge, irregular menstruation several months before pregnancy, painful periods, and nonspecific intermittent abdominal pain that became more frequent in the third trimester of pregnancy, intensifying as labor approached. A complete blood count showed leukocytosis (11,33 x 10^9/L) and hyponatremia (129,9 mmol/L).

Keywords: Small Bowel Obstruction; Normal Childbirth; Pelvic Inflammatory Disease.

RESUMEN

La obstrucción intestinal del intestino delgado (OIID) tras un parto normal es una condición poco frecuente con una alta tasa de mortalidad. Los síntomas son variados y poco específicos, incluyendo dolor abdominal, distensión abdominal, náuseas y vómitos, lo que hace que la OIID tenga muchos diagnósticos diferenciales. Las adherencias postoperatorias son el factor de riesgo más común para la OIID. Presentamos un caso de OIID posterior a un parto vaginal normal, causado por una banda de adhesión que provocó el atrapamiento y vólvulo del íleon en una paciente con antecedentes de apendicectomía y enfermedad inflamatoria pélvica (EIP). Una tomografía computarizada de abdomen con contraste fue fundamental para establecer la etiología y el diagnóstico de la OIID. Se realizó una intervención quirúrgica como tratamiento. Una mujer de 27 años, gestante primípara, con 39 semanas de gestación, fue referida por su obstetra al departamento de cirugía por presentar vómitos desde el inicio del parto vaginal normal. Un día después del parto, los vómitos persistieron. Su abdomen se distendió y presentaba dolor, y era incapaz de expulsar gases. Al examen físico, la paciente se

encontraba gravemente enferma. Presentaba hipotensión (PA: 94/62 mmHg), taquicardia (110 latidos/min), taquipnea (26 respiraciones/min) y una temperatura axilar de 37,8°C. La paciente tenía antecedentes de apendicectomía hace 15 años, flujo vaginal, menstruaciones irregulares varios meses antes del embarazo, períodos dolorosos y dolor abdominal intermitente inespecífico que se intensificó en el tercer trimestre del embarazo, agravándose a medida que se acercaba el parto. Un hemograma completo evidenció leucocitosis (11,33 x 10^9/L) e hiponatremia (129,9 mmol/L).

Palabras clave: Obstrucción del Intestino Delgado; Parto Normal; Enfermedad Inflamatoria Pélvica.

INTRODUCTION

Small bowel obstruction (SBO) following normal childbirth is a rare condition with a high mortality rate.[1] The symptoms are varied and nonspecific, including abdominal pain, abdominal distention, nausea, and vomiting, which means SBO has many differential diagnoses.[2] Postoperative adhesions are the most common risk factor for SBO.[3] However, several other risk factors can also lead to SBO, such as a history of infections like inflammatory bowel disease, bacterial peritonitis,[4] and pelvic inflammatory disease (PID).[5] Additionally, internal herniation, small bowel volvulus, small bowel intussusception, small bowel malrotation, and other underlying causes can contribute to SBO.[6] Generally, 70 % of SBO cases are managed nonoperatively, with surgery indicated only if nonoperative management fails. Therefore, establishing the etiology and diagnosis of SBO promptly and accurately is crucial to provide appropriate treatment and avoid mortality.

CASE PRESENTATION

A 27-year-old woman, gravida 1 para 0, at 39 weeks of gestation, was referred by her obstetrician to the surgery department with complaints of vomiting since the onset of normal vaginal delivery. One day postpartum, her vomiting persisted. Her abdomen became distended and painful, and she was unable to pass gas. On physical examination, the patient appeared severely ill. She was hypotensive (BP: 94/62 mmHg), tachycardic (110 beats/min), tachypneic (26 breaths/min), and had an axillary temperature of 37,8°C. Physical examination revealed a McBurney incision scar, abdominal distension, increased bowel sounds, and tenderness upon palpation. A digital rectal examination revealed an empty rectal ampulla.

The patient had a history of an appendectomy 15 years ago, vaginal discharge, irregular menstruation several months before pregnancy, painful periods, and nonspecific intermittent abdominal pain that became more frequent in the third trimester of pregnancy, intensifying as labor approached. A complete blood count showed leukocytosis (11,33 x 10^9/L) and hyponatremia (129,9 mmol/L). An abdominal X-ray indicated a small bowel obstruction with a ground-glass appearance suggestive of a mass (figure 1). A contrast-enhanced CT scan of the abdomen revealed a small bowel obstruction with a closed-loop ileum suspicious for adhesion (figure 2).

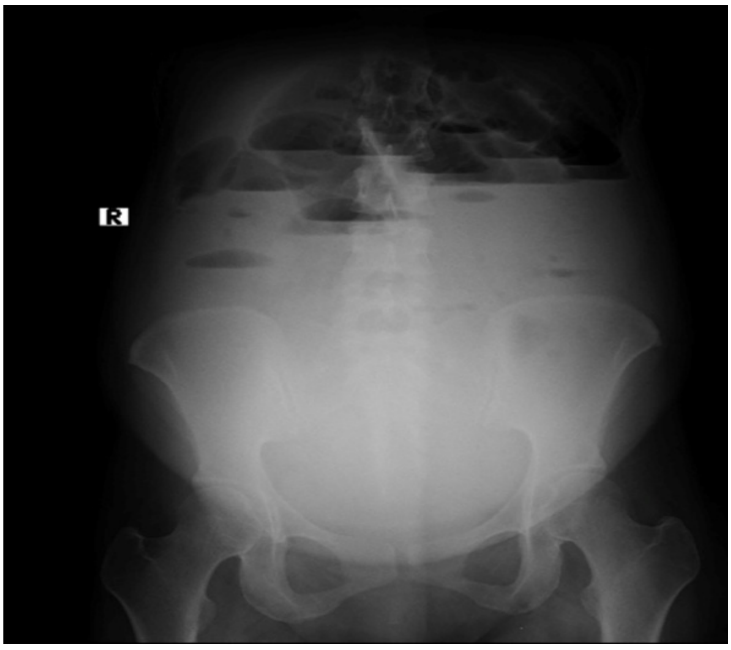

Figure 1. Abdominal X-ray shows a Stepladder sign and ground glass appearance indicating suspected small bowel obstruction due to a mass

Based on the history taking, physical examination, and supporting investigations, the patient was diagnosed with small bowel obstruction due to suspected adhesions and underwent an emergency midline laparotomy. During surgery, dilatation of the small bowel caused by an adhesion band between the right ovary and the mesentery was found, forming a loop in the ileum approximately 10 cm from the ileocecal junction (ICJ) extending orally for about 40 cm. The loop caused a closed-loop ileum and a clockwise volvulus. There were also grade 3 adhesions between the left fallopian tube and the sigmoid colon (figure 3). The adhesion band was released with Metzenbaum scissors, the volvulus was counter-rotated to its normal position, and the entrapped ileal segment was found viable, thus resection was not required (figure 4). Adhesions between the left fallopian tube and the sigmoid colon were also released. Postoperatively, the patient had a nasogastric tube in place until the 4th day and was discharged on the 5th day after surgery.

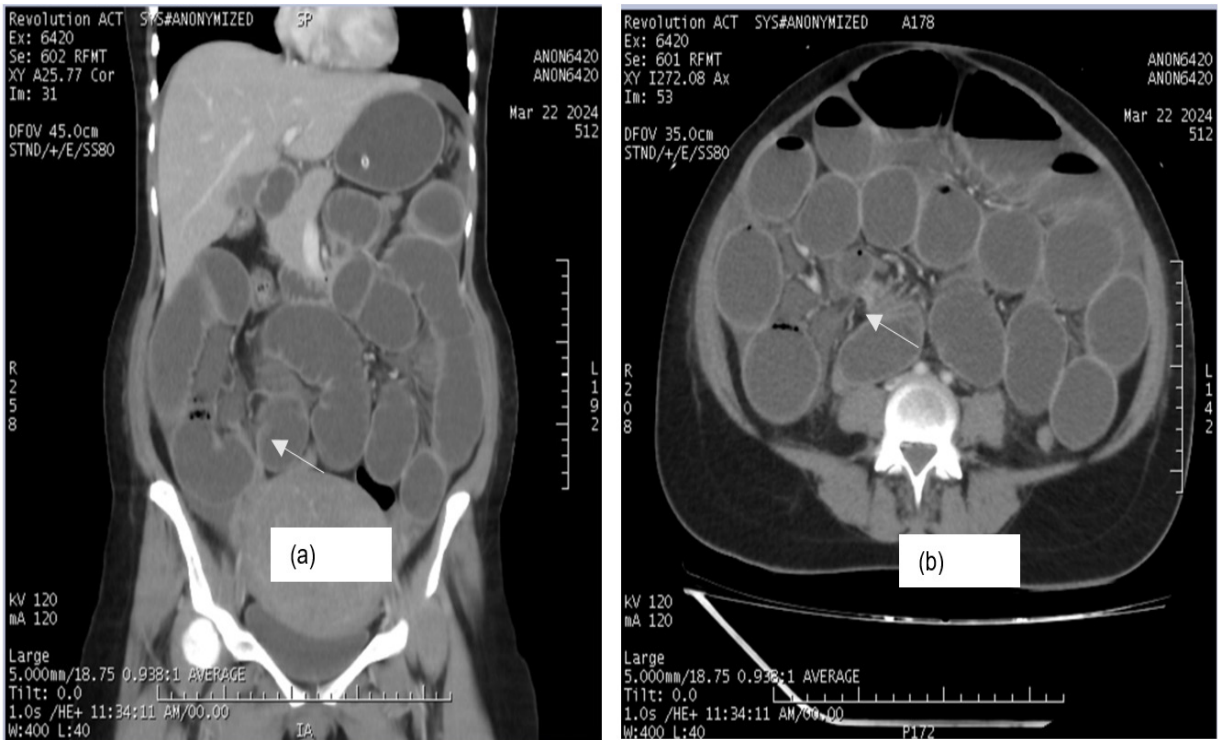

Figure 2. Abdominal CT with intravenous contrast (a) Coronal view (b) axial view shows dilatation of the small bowel obstruction accompanied by a closed loop ileum caused by suspected adhesion band as the lead point of the obstruction (arrow)

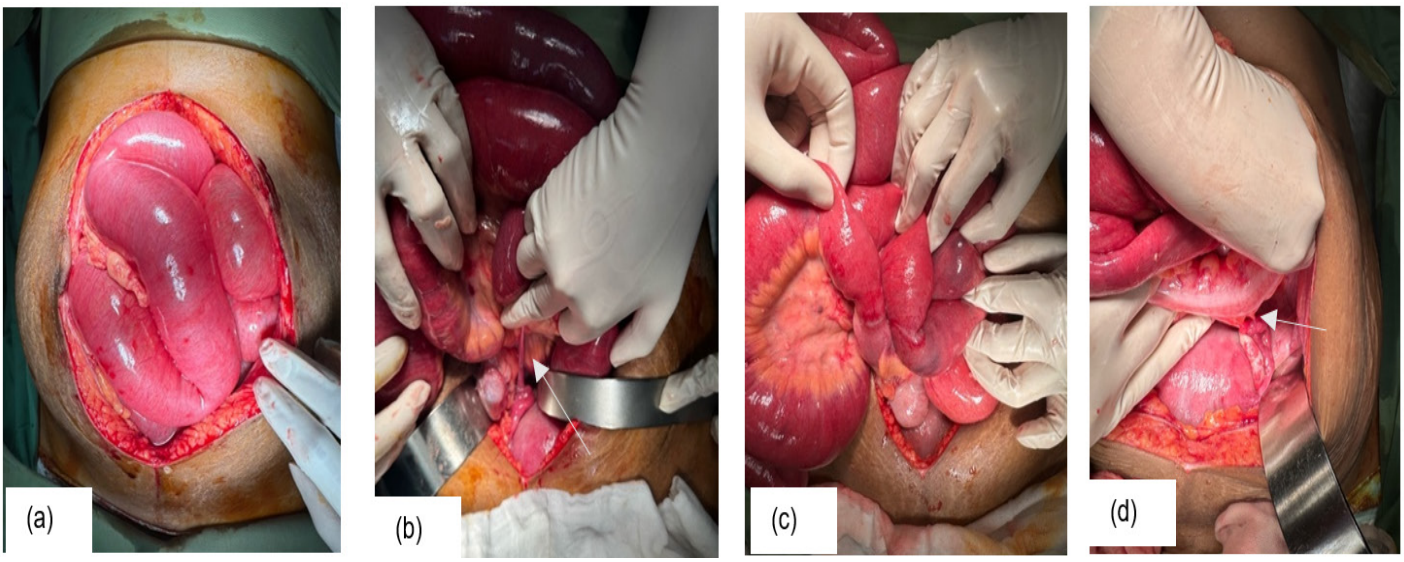

Figure 3. Surgical findings reveal SBO characterized by (a) small bowel dilatation due to entrapment (b) adhesion band as the lead point (arrow) on the right ovary with mesentery, resulting in (c) closed loop ileum and volvulus (d) adhesion of the left fallopian tube to the sigmoid colon (arrow)

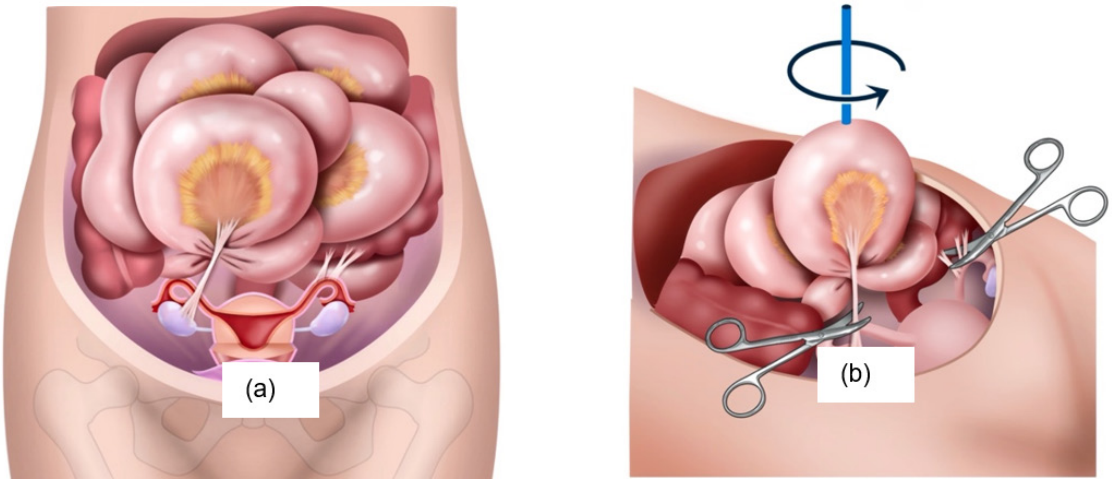

Figure 4. (a) Illustration of small bowel dilatation due to entrapment. (b)The adhesion band was released with Metzenbaum scissors and the volvulus was counter-rotated to its normal position

DISCUSSION

Small bowel obstruction (SBO) following normal vaginal delivery is an extremely rare condition, with an incidence of 1 in 3000 normal deliveries.[1] According to a literature review, only seven cases of postpartum bowel obstruction following normal delivery have been reported in the last 35 years.[2] The initial mortality rate of SBO is significant, ranging from 18 % to 25 %, primarily due to misdiagnosis or delays in diagnosis.[1]

Several case reviews show that approximately 92 % of SBO cases occur in the third trimester, with fewer cases, about 8 %, occurring in the second trimester.[1] Generally, 70 % of SBO cases are managed nonoperatively, with surgical intervention only if nonoperative management fails.[6] In a study of 217 cases of SBO in pregnancy, 92,2 % underwent surgery, with 22 patients failing conservative therapy and requiring surgical intervention. Of the 39 patients managed conservatively, only 8 received total parenteral nutrition (TPN). Surgery is typically performed within 24 hours after diagnosis.[6]

The signs and symptoms of SBO are nonspecific, often including abdominal pain and vomiting in pregnant patients, which can sometimes be mistaken for labor contractions or hyperemesis gravidarum.[7] In this case, the patient was referred to the surgery department by her obstetrician due to persistent vomiting that began as labor approached and did not improve one day after normal delivery. She also experienced intermittent abdominal pain in the third trimester, which increased in frequency as labor approached, leading her to assume these were normal contractions. Before pregnancy, she frequently experienced vaginal discharge, irregular menstruation, and painful periods. Although cervical swab cultures for Neisseria gonorrhoeae and Chlamydia trachomatis were negative, her history raised suspicion of pelvic inflammatory disease (PID); but other causes of PID could not be ruled out. This suspicion was reinforced by operative findings of adhesions on both ovaries. Adhesion formation in the adnexa can result from ascending infection in PID, causing epithelial damage and leading to adhesion and scarring.[8]

Other known causes of SBO include a history of infections such as inflammatory bowel disease, bacterial peritonitis,[4] PID,[5] internal herniation, small bowel volvulus, small bowel intussusception, small bowel malrotation, and other underlying causes.[6]

The patient had undergone an open appendectomy 15 years ago at the age of 12. Although the incidence of SBO following pediatric open appendectomy is very rare, at only 1,9 %,[9] almost 80 % of SBO cases are caused by adhesions following intra-abdominal surgery.[3] Another potential cause of postpartum obstruction in this patient, in addition to the factors mentioned above, could be the rapid reduction in uterine size postpartum, which may have shifted the area of adhesions and bowel, causing entrapment and forming a closed loop.

We performed a supporting abdominal X-ray examination on this patient. However, due to the nonspecific nature of postpartum abdominal pain, diagnosis and etiology were challenging to establish. Therefore, we proceeded with a contrast-enhanced CT scan of the abdomen. A CT scan is preferred modalities for diagnosing suspected SBO, with a sensitivity and specificity more than 90 %.[10] Moreover, the abdominal CT scan provides more detailed information compared to other imaging modalities, such as the transition zone, severity, and etiology of the obstruction, including adhesions, masses, or hernias,[11] which helps determine the subsequent management of SBO cases.

CONCLUSION

Small bowel obstruction (SBO) following childbirth is a rare occurrence. Most cases of SBO are managed

nonoperatively, with only 20-30 % requiring surgical intervention. We present a case of SBO following normal vaginal delivery caused by an adhesion band leading to entrapment and volvulus of the ileum in a patient with a history of appendectomy and pelvic inflammatory disease (PID). A contrast-enhanced CT scan of the abdomen was instrumental in establishing the etiology and diagnosis of SBO. Surgical intervention was performed as the treatment.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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