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Small bowel torsion due to adhesive band, causing blind loop in pregnancy and the prompt salvage: A case report

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Abstract

Small bowel obstruction during pregnancy is rare, yet a life-threatening condition for both mother and baby. Many authors in literature suggested prompt and appropriate surgical intervention rather than conservative treatment, as soon as total small bowel obstruction was diagnosed during pregnancy. We present herein a case of a 32-week pregnant woman with small bowel obstruction, who was admitted for severe abdominal pain and continuous vomiting, and eventually underwent emergency laparotomy which resulted in discharge of the healthy baby and resection of proximal jejunum with anastomosis.

Keywords: Acute abdomen in pregnancy, blind loop, emergencies of pregnancy, pregnancy, small bowel obstruction, surgical emergencies of pregnancy

Introduction

Small bowel obstruction (SBO) during pregnancy causes preterm delivery in almost half of the cases. In addition, it threatens both the mother's and baby's lives. Intra-abdominal adhesions due to previous abdominal surgeries are predominantly responsible for SBO of pregnancy, whereas internal herniations and volvulus are less blamed^{1, 2}. Abdominal pain and vomiting are observed as alarming clinical symptoms, whereas abdominal tenderness and distension are the classical diagnostic findings. Differential diagnosis is confirmed by abdominal magnetic resonance imaging (MRI) without contrast since abdominal ultrasonogram (US) images may be conflicting due to increased bowel gas. Patient's clinical picture may become worse and even proceed to sepsis within hours in case of delay in surgical intervention.

Case Report

This case report has been approved by a suitably constituted Ethics Committee of our institution within which the work was undertaken and that it conforms to the provisions of the Declaration of Helsinki. The patient gave informed consent for the share and scientific publication of all information relevant to her clinical condition. Patient anonymity was completely preserved.

A 43-year-old female, G7, P3+3, at 32 weeks and 6 days pregnancy, was admitted for observation and medical treatment under department of obstetrics for vomiting and abdominal pain. She had 3 cesarean sections with cervical cerclage in situ in the past. Her bowel functions were normal the day prior to her admission. Her abdomen was soft with a non-tender uterus; however, she had severe left-sided abdominal pain with localized tenderness when she was admitted.

An US of her abdomen had been completed on the first day of admission and had reported slightly dilated small bowel loop inferior to spleen with adjacent excess bowel gas. Due to excess bowel gas, left hypochondriac region was not well visualized. Otherwise US appeared normal. Laboratory studies showed leucocytosis of $15.56 \times 10^9/l$ and neutrophilia of 75.5%. Her C-Reactive Protein (CRP) was 29 mg/l. Her hemoglobin was normal and she had unremarkable liver function tests. Her urine dipstick indicated ketones 2+ and protein 1+. Her EKG and cardiac enzymes, as well as ecocardiography were normal. On the second day of admission, she was taken to ICU for meticulous observation and treatment.

During the following two days, despite IV antibiotics and several recommendations from various specialty departments for medical management, inflammatory markers had gradually raised and premature contractions started. Labs showed WBC: $22.5 \times 10^9/l$, CRP: 290mg/l, D-dimer: 676. Clinical picture turned to severe sepsis with dehydration, and her mental state deteriorated.

The case was discussed with the general surgeon available inhouse. Abdominal exam was recorded as “acute abdomen” from the surgeon’s aspect. Due to severe pain and in view of dilated small bowel loop and excess bowel gas on US, abdominal MRI without IV or oral contrast was advised for further evaluation. Axial and sagittal images of MRI showed dilated proximal small bowel loops (3.5-4 cm in diameter) on left side with fluid levels (blue arrow) with mesentery acting as transition zone (White arrow) between dilated proximal small bowel loops (Proximal jejunum) and collapsed distal small bowel loops. Crowding of mesenteric vessels with suspicious twisting was seen with normal flow voids. Mild inter-bowel free fluid with small bowel wall edema (Black arrow) (Mid jejunum) for a length of 6 cm was noted (Figure 1).

Based on clinical and imaging findings, diagnosis was acute SBO with possible adhesion band or internal herniation. Decision for urgent surgical intervention was made. She was taken to surgery for emergency laparotomy with lower segment cesarian section.

Under general anesthesia, midline abdominal incision from epigastrium to pubis was performed, uterus opened by transverse incision in lower segment, an alive baby boy of 1.660kg delivered as cephalic, baby handed over to pediatric team.

After all obstetric procedures were completed, general surgery team took over to explore the abdomen. Sample collected from pus containing abdominal fluid. Blind loop formation observed on the mid-jejunal segment, small bowel loops were dilated and partially gangrenous at this location (Figure 2). After blunt dissection of adhesions, a small adhesive band was found to compress all blood circulation and causing the small bowel loop to twist (Figure 3). Adhesions were released and necrotic bowel segment which was 30 cm long was resected (Beginning at the 30 cm distal to duodenum). Side to side anastomosis completed with no: 75 linear stapler. Also it was observed that caecum and right colon were partially covered with a membrane (Similar to cocoon syndrome). Abdomen irrigated with warm diluted betadine, and warm saline, hemostasis provided, 1 large drain tube placed near the anastomosis line, draining out on the left lateral abdomen. Abdomen closed in 3 layers, operation ended.

All vital parameters and laboratory values dramatically improved following resection of gangrenous bowel loop. She was taken to normal ward room from ICU on the postoperative day 2. Liquid oral intake started on the day 4. On the day 7 she was tolerating normal diet, abdominal drain was removed and she was discharged home with no complaints. New born baby was fine under the care of neonate ICU specialists of our hospital.

Discussion

Small bowel obstruction in pregnancy is rather uncommon clinical situation which is reported in literature by few authors. Majority of these rare cases in the literature are due to peritoneal adhesions and obstruction due to adhesive

bands are observed more commonly in the third trimester of pregnancy, as this was the case in our patient. Surgical treatment was applied for approximately 80% of such cases in the literature. Intestinal obstruction in 42% of pregnant women was attributed to small bowel torsion secondary to adhesions. Bower *et al.* recorded that indications for emergency surgery for SBO during pregnancy were no different than for women who were not pregnant. They noted that causes of SBO other than adhesions mandated emergency surgery, whereas SBO due to adhesions should undergo initial conservative approach, especially when the obstruction is only partial and the clinical picture is not severe³. However, our patient demonstrated complete obstruction, blind loop syndrome and severe sepsis which made surgical intervention mandatory.

Main key in avoiding bowel gangrene and resection in complete SBO is taking immediate action and proceeding to surgical intervention as early as within the first hours of obstruction. Delayed intervention despite clear diagnosis will obviously cause high risk to mother’s and baby’s lives.

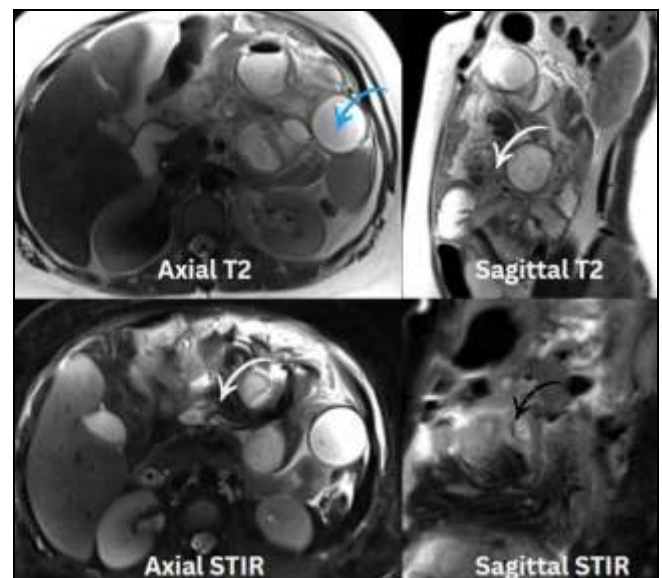


Fig 1: MRI of abdomen without contrast

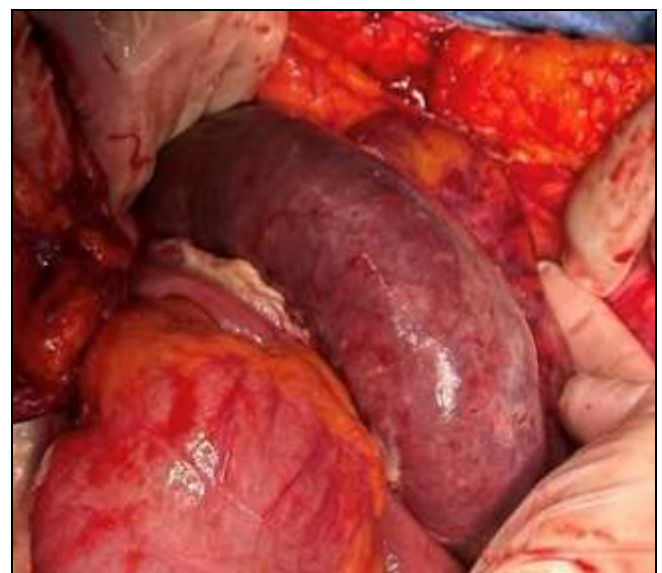


Fig 2: Strangulated and gangrenous jejunal loop



Fig 3: Adhesion band causing obstruction

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Conflict of Interest

Not available

Financial Support

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Disclosure

Authors declare no conflict of interest.

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