

A Postoperative Complication Following Laparotomy For Ruptured Uterus

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Citation

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Abstract

Unexpected events during the recovery of a postoperative patient are rare. Here we present a case of early postoperative intestinal obstruction following a laparotomy for a ruptured uterus due to adhesions. Furthermore, we discuss other causes of early postoperative obstruction and prevention of adhesions. Preemptive use of computed tomography (CT) scans in seemingly doubtful cases of adhesions provide for definite diagnosis and avoid prolonged conservative management. A 25-year-old second gravida with a previous cesarean section displayed signs and symptoms of shock due to uterine rupture. She underwent an emergency laparotomy, which involved suturing her ruptured uterus. Her postoperative period was normal for 3 days, but on the 4th day, she developed abdominal distension and intermittent colicky pain. Her symptoms were managed conservatively for 2 days, but her condition worsened due to severe vomiting and obstipation. Upon performing a CT scan, she was diagnosed with an intestinal obstruction and immediately scheduled for a laparotomy. Intraoperatively, severe adhesions between the ileum and the jejunum were found. We also noted that her jejunum was distended. Adhesiolysis was performed during this procedure. Her postoperative period was uneventful and she was discharged home on the 8th day. Our early recognition and intervention prevented grave complications of intestinal obstruction.

INTRODUCTION

Intestinal obstruction is a grave complication of pregnancy and the postpartum period.

Obstruction is most likely mid-pregnancy, at term, and immediate postpartum when there is a sudden change in the uterine size. About 60-70% are due to adhesions from previous surgeries, the most common being cesarean sections. Multiple laparotomies increase the risk of adhesions. Thus, developing steps for adhesion prevention will play a major role in reducing morbidity and mortality. Mortality caused by intestinal obstruction is high due to error and delay in diagnosis. It is difficult to distinguish between paralytic ileus and obstruction in the early postoperative period, as the intestinal obstruction is usually associated with an ileus. Delay in treatment due to reluctance to re-operate may lead to grave complications. Preemptive use of computed tomography (CT) scans in seemingly doubtful cases of adhesions provide for definite diagnosis and avoid prolonged conservative management, which can lead to serious complications. Early intervention saves patients' lives.

CASE PRESENTATION

A 37-week pregnant, 25-year-old, second gravida patient from a remote rural area, came to the emergency department with severe pain in her abdomen for one day. The onset of pain was described as sudden and radiated throughout the abdomen. It was associated with giddiness, which increased in standing position. She was not able to perceive fetal movements for one day. She was married for one year. Her first pregnancy was uneventful despite irregular antenatal visits with a local doctor. She did not go into labor. Instead, she underwent a cesarean section at term. Her operative notes and discharge summary were not available, nor was she told about the nature of uterine incision, therefore the indication for her cesarean section is not known. There was no history of antepartum hemorrhage, postpartum hemorrhage, or blood transfusion. Her postoperative period was uneventful. She was not counseled about need for an elective section in next pregnancy. Advice regarding contraception was not given.

She conceived after 8 months of previous pregnancy. She had irregular antenatal visits. She had an obstetric scan one week prior to her arrival to the emergency department. This scan showed a single live intrauterine fetus with a cephalic

presentation and an expected fetal weight of 2.4 kg. The placenta was posterior and situated in the upper segment. Her medical history and personal history were not significant. Upon examination, the patient was conscious, irritable, and oriented to person, place, and time. She was moderately built, poorly nourished, and severely pale. Her pulse was 120 beats per minute, blood pressure was 86/60 mmHg, respiratory rate was 30 breaths per minute, and she was afebrile. Upon abdominal examination, a vertical subumbilical scar was noted, which is common even for lower segment cesarean sections performed in that area. Uterine contour was not evident, guarding and rigidity throughout the abdomen was present, and bowel sounds were sluggish. An ultrasonography indicated that the uterus was empty. The fetus and the placenta were lying outside the uterus.

Immediate resuscitation was performed with intravenous fluids and blood transfusions. She was scheduled for an emergency laparotomy. Intraoperatively, a preexisting classical uterine scar was found. A dead, 2500 g, male baby and placenta were removed from the abdominal cavity (Fig 1). Adhesions from her previous surgery were minimal. The ruptured classical scar of the uterus was closed (Fig 2) with Vicryl no.1 in three layers. Clots were removed from the peritoneal cavity. Peritoneal cavity was cleaned with normal saline. The patient's total blood loss was 2000 mL. Three units of packed cells were transfused. The parietal peritoneum was not closed and no adhesion barriers were used. The rectus sheath was closed with polypropylene no.1 and the skin was closed by vertical mattress nylon sutures.

Postoperative feeding with liquids started after 24 hours due to a prolonged operative time of 3 hours. The patient recovered well and passed stools on the third day. On postoperative day 4, she started having abdominal distention and colicky pain. Her bowel sounds were hypoactive. She was managed conservatively with nasogastric aspirations and nothing by mouth. Her electrolytes were normal, leukocyte count was $15000/\text{mm}^3$, and neutrophils were 72%. On the next postoperative day, her labs did not change significantly, but clinically her symptoms worsened with increase in pain, vomiting, and obstipation. An X-ray showed minimal air fluid levels. Her vitals were in normal range, but because her pain increased, a CT scan was ordered. Since plain CT films are capable of diagnosing acute intestinal obstruction, a contrast study was not done. She was scheduled for an emergency laparotomy. During the procedure, the abdomen was found to be full of adhesions,

but the cause of the obstruction was a constricting adhesion between the ileum and jejunum (Fig 3). The jejunum was distended and the ileum was collapsed. Adhesiolysis was performed and the abdomen was closed. The Peritoneum was not closed and adhesion barriers were not used. The patient recovered well and was discharged on the 8th post op day.

Figure 1

Figure 1: Baby in abdominal cavity through ruptured uterus



Figure 2

Figure 2 Site of rupture

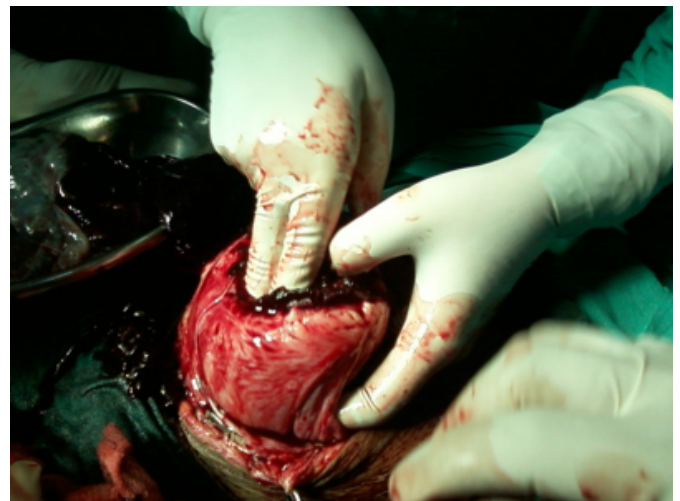
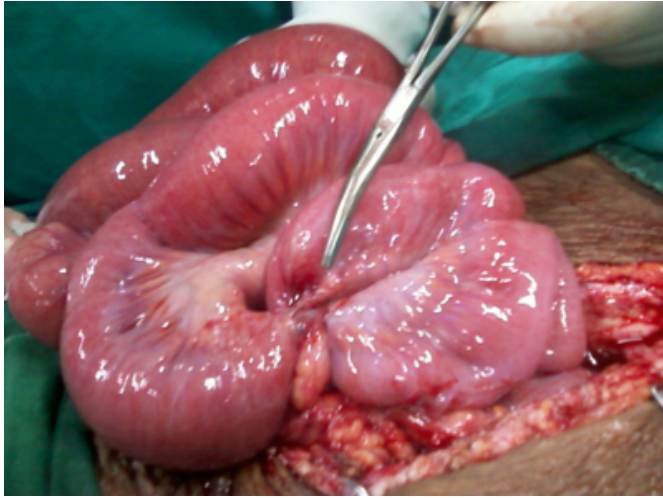


Figure 3

Figure 3 Site of obstruction due to adhesion



DISCUSSION

Postoperative adhesions account for 64-79% of patients with small bowel obstructions[1].

Cessation of flatus or bowel movements after their resumption after operation defines immediate postoperative intestinal obstruction[2]. The exact risk factors are not known. Adhesions can occur after one laparotomy, but the risk increases with multiple laparotomies. The absolute risks of postoperative adhesions and intestinal obstruction after cesarean is low, but should be discussed with women requesting cesarean deliveries[3]. Limiting packing, crushing, and manipulation of tissues decreases the likelihood of adhesions. Adhesion barriers like polytetrafluoroethylene (Gore-Tex), oxidized regenerated cellulose (Interceed) help prevent adhesions[4]. Interceed helps only if haemostasis is perfect. In the presence of blood, Interceed increases adhesions.

Surgical treatment of adhesions could cause further intestinal adhesions and should only be carried out if conservative methods fail. Surgery is required for 49% of patients with immediate postoperative intestinal obstruction[2].

Laparoscopy decreases the risk for adhesions. Adhesiolysis can be carried out laparoscopically, but laparotomy is preferred if the patient has previously undergone two abdominal operations[5]. Barmparas G et al[6]. studied the incidence and risk factors for post-laparotomy adhesive small bowel obstruction. Gynecological surgeries were responsible in 11%, cesarean in 0.1%, abdominal hysterectomy in 16%, and laparoscopic hysterectomy in 0%. There was no association with age or gender. There has been

a longstanding debate regarding peritoneal closure versus non-closure. Shi Z et al[7]. found that closure of peritoneum reduces the risk of adhesions in cesarean sections in their systematic review. A 16-year study by Weerawetwat W et al[8]. did not find differences between these two groups, but peritoneal closure was associated with dense adhesions. Apart from adhesions, there are reports of intestinal obstruction in the postpartum period caused by other factors. Harma M et al[9]. reported a case of a 27-year-old primigravida developing ileo-ileal invagination on second day after cesarean delivery. Safai K et al[10]. reported the first case of Chilaiditi's syndrome after cesarean section, leading to occlusion and necrosis of the small intestine. Chilaiditi's syndrome is the interposition of the large colon or small intestine between the lower side of diaphragm and liver. The patient developed Chilaiditi's syndrome one day after a cesarean section. It was diagnosed by a CT scan. Busch FW et al[11]. reported a case of large bowel obstruction with no mechanical cause. Prompt diagnosis and tube cecostomy prevented cecal perforation. Singh S et al[12]. reported a case of acute colonic pseudo obstruction with perforation. Ogilvie syndrome or colonic pseudo obstruction is an adynamic colonic ileus and 10% reported cases follow delivery. It can be treated with colonic decompression with colonoscopy. Poncet[13] and associates reported the use of neostigmine infusion for Ogilvie syndrome. In a randomized control trial, Chantarasorn V et al[14]. found that early feeding within 8 hours after cesarean decreased paralytic ileus from 31% to 19% compared to conventional feeding after 24 hours. In our patient, surgery was indicated for repairing a ruptured uterus, therefore we started feeding after 24 hours. Teoh W H et al[15]. compared effects of feeding within 30 minutes with effects of feeding after 2 hours in patients who have undergone a cesarean section under regional anesthesia. They found patient satisfaction and return of bowel activity was better in the early feeding group, except for nausea. There is reluctance to re-operate in the early postoperative period because distinguishing paralytic ileus, partial bowel obstruction, and complete bowel obstruction based on clinical and X-ray findings is difficult. David H. Frager et al[16]. found the CT scan to be 100% sensitive and specific in distinguishing between postoperative ileus and complete mechanical small bowel obstruction. Combined clinical and plain film findings were often confusing and not diagnostic with 19% sensitivity. Use of contrast was helpful in determining the degree and severity of a partial small bowel obstruction. CT scans also assist with understanding the etiology and level of

obstruction so that surgery can be planned accordingly. Patients recovering from complicated surgeries may experience unexpected events, like intestinal obstructions, which require prompt diagnosis and management to avoid grave complications.

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