

UTERINE PERFORATION AND BOWEL INCARCERATION FOLLOWING SURGICAL ABORTION DURING THE FIRST TRIMESTER

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Cervical dilatation and endometrial curettage (D&C) is a commonly performed procedure which is generally considered to be safe. Although rare, uterine perforation is the most commonly encountered complication. In a study by Amarín and Badria [1], uterine perforations were mostly located at the uterine fundus, presumably caused by the introduction of cervical dilators. Hence, physicians should be especially cautious when difficult entry is encountered with a stenotic cervix. However, uterine perforation can also occur at places of weakness, such as a previous cesarean section scar. We present a patient with two previous cesarean section deliveries, who presented with ileus following a primary pregnancy evacuation procedure.

The patient is a 39-year-old, gravida 3, para 2, abortus 1, woman with two previous cesarean deliveries at full-term. She was referred to our hospital following failed RU-486 therapy administered at a local clinic. She complained of scanty vaginal bleeding with lower abdominal discomfort. Upon initial evaluation, the patient's vital signs were stable, without evidence of hypovolemic shock or peritoneal signs. Sonography revealed a 7-week intrauterine pregnancy located in the lower segment of the uterus (Figure 1). Uterine evacuation was performed with intravenous general anesthesia in an operating room. The gestational sac was removed *en bloc* with placental forceps. The procedure was uneventful, with negligible blood loss. One day following the procedure, the patient presented to the emergency department with symptoms of abdominal pain, nausea and vomiting. Abdominal plain film revealed multiple air-fluid levels, suggestive of mechanical ileus

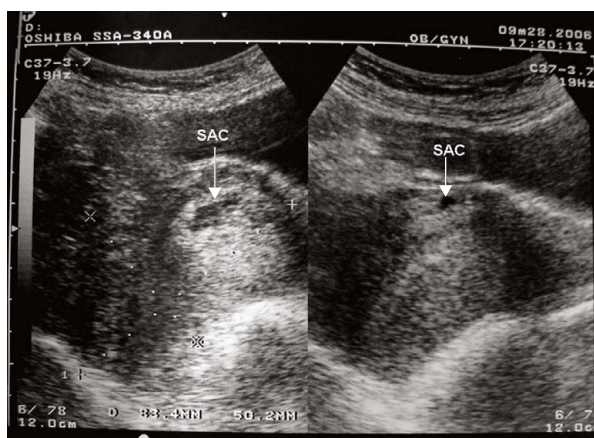


Figure 1. Transabdominal sonography showing implantation of the gestational sac (SAC) at the lower segment of the uterus (arrow). Note that the uterus is retroflexed at an acute angle.

(Figure 2). The patient was then admitted for inpatient care. Computed tomography scan suggested mechanical ileus at the terminal ileum (Figure 3). Laparotomy was arranged after failure of initial conservative management. A defect in the lower segment of the uterus with a portion of incarcerated bowel was found. Repair of the defect and end-to-end reanastomosis after resection of the ischemic portion of the small bowel were performed. After the surgery, the patient's symptoms were relieved and she had a full recovery.

Uterine perforation during a D&C procedure could be catastrophic [2], but it can be managed conservatively most of the time [3]. The most important issues in the management are identifying the patients who are at high risk for perforation and early intraoperative recognition. Increased risk of perforation has been associated with previous cone biopsy, advanced age, nulliparity, menopause, gonadotropin-releasing hormone agonist use, markedly retroverted uterus, undue force, and stenotic cervix [1]. Uterine perforation with small bowel incarceration has been reported to be a rare complication of first-trimester pregnancy termination



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procedure [4]. In previously reported cases, uterine perforations were usually unnoticed during the procedures. Details regarding the risks for uterine perforation were not discussed, but the clinical course was comparable to that of our case. At first glance, our patient did not appear to possess any risk factors for uterine perforation. However, retrospectively examined, clues in the patient's history suggested an unusual pregnancy. Failure of RU-486 therapy may be related to increased age and parity [5,6]. Although the success rate of medical abortion in women with previous cesarean sections appears to be comparable to those without a scarred uterus, the risk of uterine rupture

could not be neglected, especially at an increased gestational age [7,8]. Wang et al [9] reported catastrophic experiences of undetected cesarean scar pregnancies terminated with mifepristone. Fortunately, our patient did not experience massive bleeding to necessitate a hysterectomy. Nevertheless, we emphasize the need for heightened awareness when the patient has a failed medical abortion without an obvious explanation.

When laparotomy was performed for our patient after futile conservative management, a segment of the bowel was found incarcerated in the previous cesarean scar. Some residual gestational tissues were found embedded adjacently. Mifepristone and misoprostol may, most likely, have exerted strong contractive forces on the uterus, weakening the scar. This weak spot was then a potential target for uterine perforation. Following an inadvertent perforation, suction curettage may have pulled a portion of the intestine into the myometrium. With uterine contraction, the bowel became incarcerated, and mechanical ileus ensued.

Another possible explanation, although far fetched, could be that it was a cesarean scar pregnancy to begin with. Cesarean scar pregnancy is one of the rarest form of ectopic pregnancy. The most common presenting symptom is vaginal bleeding. Clinicians must be highly alert if a woman with a history of previous cesarean section deliveries presents with abnormal first-trimester bleeding. Sonography is a useful diagnostic tool. The sonographic diagnosis of cesarean section scar pregnancy include: (1) an empty uterine cavity; (2) an anterior location of the gestational sac at the level of the internal os covering the visible or presumed site of the previous lower uterine segment of the cesarean scar; (3) evidence of functional trophoblastic/placental circulation



Figure 2. Abdominal plain film showing multiple air-fluid levels, suggesting mechanical ileus.

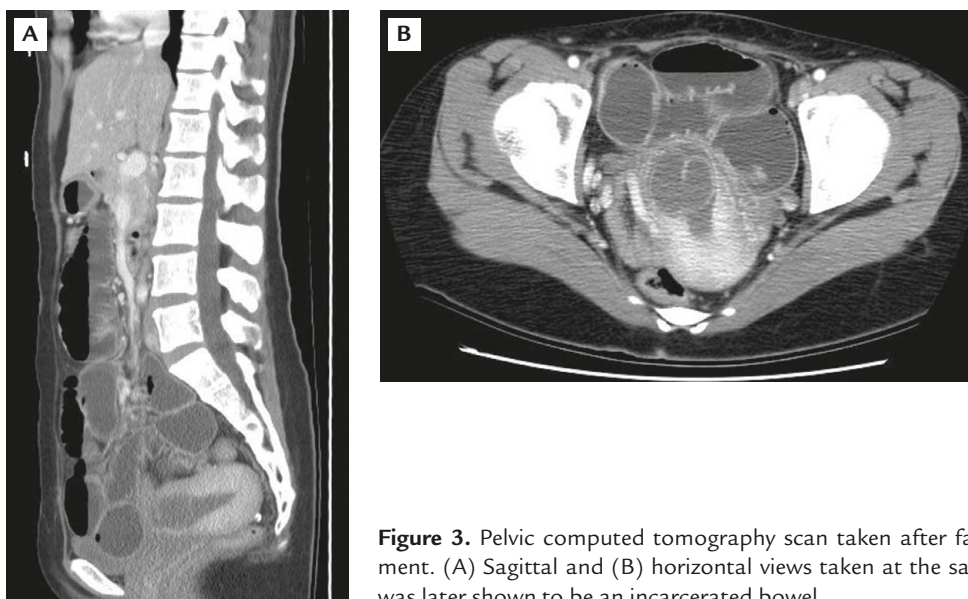


Figure 3. Pelvic computed tomography scan taken after failure of conservative treatment. (A) Sagittal and (B) horizontal views taken at the same level. Intrauterine mass was later shown to be an incarcerated bowel.

on Doppler scans; and (4) the presence of trophoblast between the bladder and the anterior uterine wall as a sign of deep implantation. Termination of the pregnancy is recommended owing to the high risk of adverse pregnancy outcomes such as profuse bleeding and uterine rupture. Treatment is based on an individualized approach. Most authors are hesitant in using D&C as the choice of management [10]. However, Wang and Tseng [11] proposed that evacuation therapy is feasible, provided that the gestational age is less than 7 weeks and that there is no indication of deep sac implantation. The procedure should be carried out under a secure condition where emergent laparotomy could be immediately performed. Most reviews in the literature have focused on the immediate complications of surgical termination of the pregnancy, namely, uterine rupture and profuse bleeding. Here, we have presented another rare, but also important complication, which should be taken into consideration when managing women with previous cesarean scars. It is precisely because of these catastrophic, but preventable, events that the clinician must maintain a high index of suspicion in dealing with these patients. Unfortunately, Doppler studies were not performed on our patient; thus, the cesarean section scar pregnancy could not be confirmed. We recommend a thorough sonographic survey, including peritrophoblastic flow using color Doppler ultrasound and measurement of implantation thickness, for all women with previous cesarean section deliveries.

Uterine perforation can usually be diagnosed at the time of the injury when the operator experiences a sudden loss of resistance while performing the procedure. Sonography is a convenient tool in aiding in the diagnosis. Image findings of free fluid in the pelvis, loops of bowel within the myometrial wall, extrauterine fetal parts or intraoperative presence of the curette within the myometrium have all been used to confirm uterine perforation [12]. Intestinal injury following a pregnancy termination procedure includes direct perforation and bowel herniation through uterine perforations [13]. In patients with high risks for perforation, real-time intraoperative ultrasonographic guidance has been suggested [12]. However, if the incident cannot be prevented, prompt management can be life-saving. Delay of treatment or diagnosis could lead to peritonitis, septic shock, and even irreversible complications. Therefore, bowel injury should be kept in mind if a patient presents with mechanical ileus shortly after a D&C procedure. Treatments include adequate fluid resuscitation, blood transfusion when needed, and administration of broad-spectrum antibiotics [13,14]. Most importantly, appropriately timed surgical intervention is crucial to decrease morbidity and mortality rates.

Complications associated with dilatation and curettage are rare, but could be potentially fatal. Uterine perforation is the most commonly encountered complication. Aside from the operator's expertise, patients at high risk should be carefully identified prior to the procedure. We have presented here a case of first-trimester pregnancy that was complicated by bowel incarceration following primary evacuation surgery. The importance of early diagnosis for a full recovery cannot be overemphasized.

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