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A CASE OF SMALL BOWEL INCARCERATION COMPLICATING A FIRST TRIMESTER ABORTION-RELATED UTERINE PERFORATION

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ABSTRACT

Abortions are frequent procedures, especially in underdeveloped countries. This practice is associated to high mortality rates. Among its complication, uterine perforation is a serious one. The incarceration of an intestinal loop through a uterine perforation is a rare event. The management of this complication should be as urgent as possible.

KEYWORDS: Uterine perforation; bowel incarceration; Abortion.

INTRODUCTION

In our country, abortions are still frequent, especially in rural regions, inducing increased percentage of mortality.[1-5]

In 2000, the World Health Organization (WHO) reported around 19 million illegal abortions have occurred worldwide, with as consequence, around 70,000 women deaths.[6]

Small bowel obstruction due to uterine perforation is a rare but serious complication that can follow an abortion.

Uterine perforation could remain not recognized during the abortion, and patients could present even weeks later with complications secondary to the perforation.[7]

Incarceration of the small bowel in the instance of uterine perforation can be explained by the pelvic location of some of the intestinal loops and their mobility.[2]

In our work, we report the case of a 29 female patient, presenting 1 week after an illegal abortion, with abdominal and pelvic pain and clinical features compatible with intestinal obstruction. The diagnosis was suspected on imaging using ultrasounds and CT scan. She was surgically treated with good post-operative evolution.

CASE REPORT

We report the case of a 29-year-old, G1P1, female patient, presenting 1 week after an illegal abortion, with abdominal and pelvic pain, inability to channel gas, nausea and vomiting. The patient is divorced and had a history of sexual abuse two months before her admission.

The patient denies presence of fever, hematemesis, melena or vaginal bleeding.

Physical examination at admission found an arterial hypotension at 90-50cmHg and tachycardia at 110 beats per minute with no other vital signs abnormalities. Abdominal examination revealed a distended, sensible abdomen without tenderness. Internal pelvic examination revealed white colored secretions, a small polyp protruding through the cervical os and no evidence of bleeding or cervical tenderness. Laboratory analysis revealed a microcytic anemia with a hemoglobin value at 7g/dl.

Pelvic ultrasound was performed and revealed a 7cm long intrauterine structure, compatible with a small bowel loop (Figure 1)

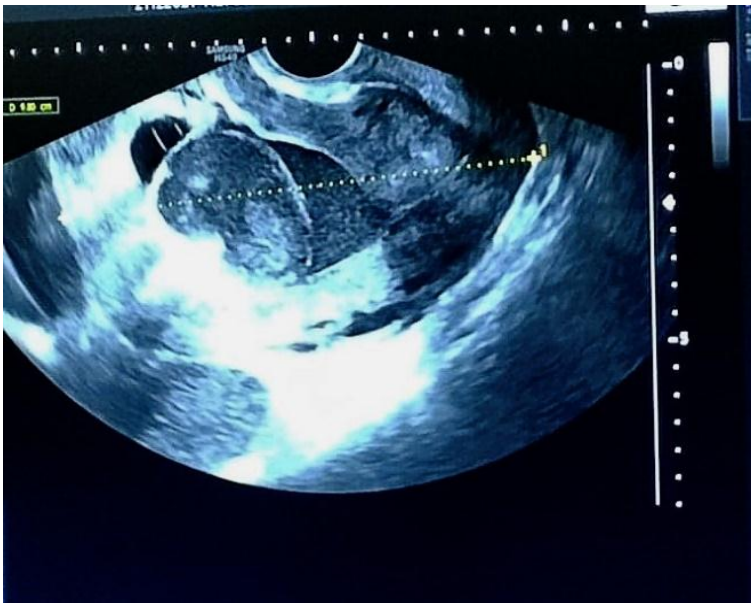

Figure 1: Ultrasonographic view showing intrauterine presence of a 7cm long structure, compatible with a small bowel loop.

We have also performed an abdominal and pelvic CT scan which showed an enlarged uterine cavity, filled with fluid, hemorrhagic debris, and air. A uterine perforation was directly visualized through which an intestinal loop was protruding into the uterine cavity. Small bowel loops were distended in the abdominal cavity.

A diagnosis of small bowel incarceration through a uterine perforation was established and the patient underwent an urgent laparotomy.

Intraoperatively, the diagnosis was confirmed by directly visualizing the incarcerated bowel through a uterine perforation (Figure 2). After small bowel reduction into the abdominal cavity, a resection of the 7-cm segment was performed since it presented an associated intussusception and perforation (Figurer 3). An enteroenterostomy was then performed. The uterine perforation site was closed after removal of the residual placental tissue (Figure 4). Surgery was well tolerated by the patient. The patient was kept under close observation. 5 days After surgery, the patient was discharged home without further complications.

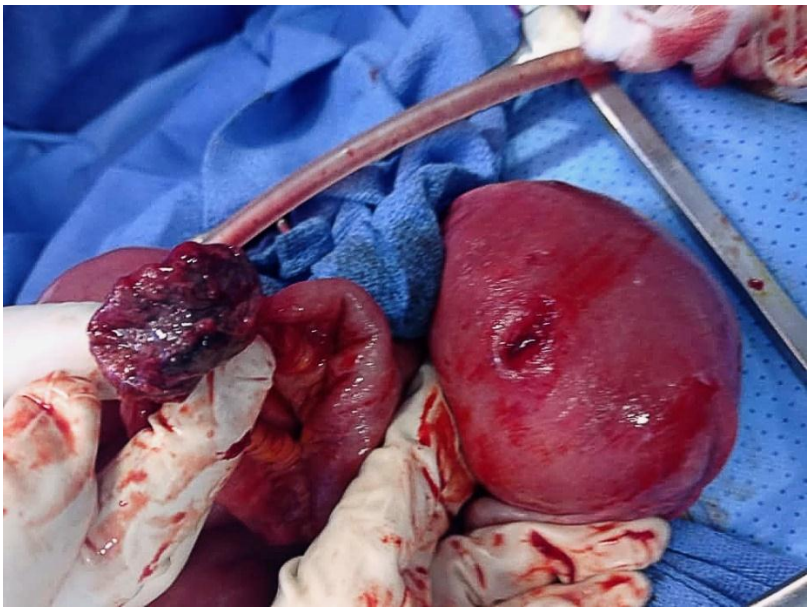

Figure 2: Intraoperative view showing the incarcerated bowel (left) and the uterine perforation (left)

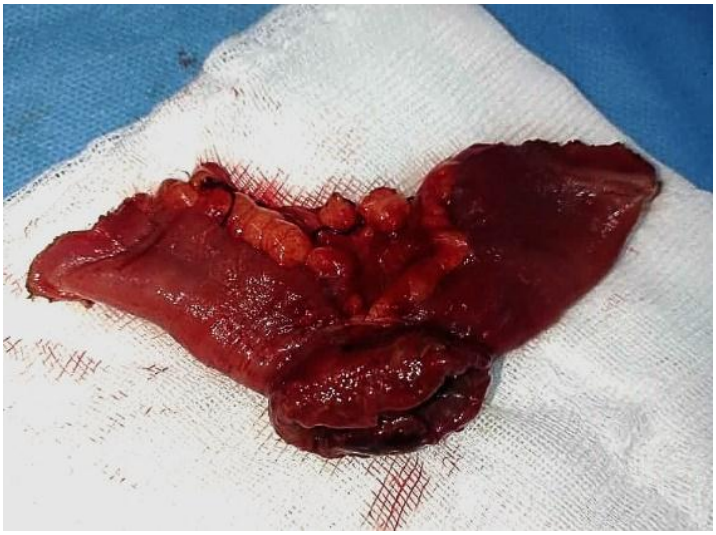

Figure 3: The resected intestinal segment presented an associated intussusception and perforation.

Figure 4: Photography of the resected residual placental tissue from the uterine cavity.

DISCUSSION

Induced abortions are very frequent intervention, with a number of about 30-50 million interventions worldwide.[6-9]

In the United States, 853,485 first trimester abortion has been performed in 2001.[10] In a study about complications of first trimester abortion, leaded by Hakim-Elahi et al.[11], the minor complications were present at an incidence of 0.846 % and included cervical stenosis, mild infection, cervical tearing, underestimation of gestational age and convulsive seizure. Major complications were 10 times less frequent than minor ones with an incidence of 0.071

%. These include sepsis, uterine perforation, incomplete abortion, heterotopic pregnancy and vaginal bleeding. These complications require hospitalization.

The incidence of uterine perforation is at about 0.05-0.4%.[12] The incidence is much higher in underdeveloped countries reaching 3.6%.[13] The occurrence of small bowel obstruction, secondary to uterine perforation following abortion is extremely rare.

The first reported case of this entity was in 1864.[14] Our research in the literature found one large study about only 30 cases in period of 105 years, and less than 50 cases in whole literature.[15, 16]

The rarity of cases of bowel incarceration through uterine perforation can be explained by many factors, such as the possible spontaneous closure of the majority of uterine perforation cases before development of further complications.[17,18] the frequent immediate intervention following diagnosis of perforation[19-21], the lack of reporting whole cases in the literature, and finally, because of a high prehospital mortality in underdeveloped countries.[22]

Many authors have agreed that the level of training represents the most significant risk factor of uterine perforation during abortion.[8]

The other risk factors include greater parity, advanced maternal age, retroverted uterus, history of cervical cone biopsy, abortion, cesarean section, difficulty during cervical dilation and underestimation of gestational age.[23,24]

The perforation occurs most frequently at the uterine fundus, probably due to cervical dilators.[15]

There is no direct cause for the occurrence of small bowel incarceration, but many possible risk factors could be listed, among these are: the diameter of the uterine perforation, multiple pregnancies and the presence of curettage for retained parts of the placenta after previous pregnancy.[24,25]

In our case, small bowel prolapse was the mechanism of bowel obstruction, which is the most frequent one (83% of cases).[15] The incidence of this mechanism is 23%.[15] The prolapse may even reach the vaginal introitus.

The incidence of small bowel incarcerated in the uterine wall is 23 %. The most advanced type is when intestine loops are pulled through the vagina leading therefore to a vaginal evisceration.[25]

The second mechanism is incarceration of herniated omentum. In this case, strangulation of the bowel happens because of an attached band. The incidence of this mechanism is only 3%.[12] The third mechanism happens when adhesions at the site of uterine perforation entrap the small bowel loop. The incidence of this mechanism is at around 10%.[26]

The fourth mechanism happens when the antimesenteric wall of the intestine protrudes through the uterine perforation. This mechanism happens in 3% of cases.[27]

Clinical symptoms are either specific making the diagnosis easy enabling an urgent management or nonspecific.[15]

Diagnosis is easy when the patient has a history of recent surgical abortion and presents vaginal evisceration.[15]

Symptom could be nonspecific and the patient presents with abdominal pain with or without distension, diarrhea, vomiting, absence of stool and/or flatus.[15]

Plain abdominal X-ray helps in establishing the diagnosis when air–liquid levels of small bowel are present.

Although Ultrasound is the preferred diagnostic tool, normal appearance of the uterus after a first trimester surgical abortion can be variable.[28] transabdominal ultrasound can enable visualization of the perforation, and the entrapped small bowel loop takes the form of a tubular irregular tissue with presence of air.[29]

Transvaginal sonography can also be used to confirm uterine perforation.[30]

Examination using Color doppler shows neither blood flow nor peristalsis in intra-uterine content.[31]

CT was first used as a diagnostic tool in 2008.[24] It has an important role especially when ultrasound is not helpful. It can clearly visualize the bowel's mesentery and bowel loops inside of the uterus.

Abdominal-pelvic MRI is not routinely performed. In the literature only one case of uterine perforation with secondary omentum incarceration was diagnosed using MRI.[31]

Management of uterine perforations depends on its complicated or non-complicated nature. The management of non-complicated cases should be conservative, with close observation.[19, 32]

When a complicated uterine perforation (with bowel injury) is diagnosed or suspected, an urgent management through laparoscopy or laparotomy should be undertaken. This would prevent bowel ischemia, necrosis and eventually secondary intestinal perforation.

The surgical treatment of complicated forms consists on bowel reduction into the abdominal cavity, followed by evaluation of its vitality.[33]

A resection with anastomosis of the injured bowel should be performed when there is necrosis and in cases of associated peritonitis.[15]

Reparation of the uterine perforation should be done after treatment of small bowel injury. Reduction of the injured bowel could sometime require an enlargement of the uterine perforation before its reparation.[15, 34, 35] Rarely, cases with uterus necrosis could require hysterectomy.[33] Management also requires searching for residual fetal parts and a definitive curettage[36] Perioperative antibiotics should be undertaken.[15]

Follow-up is done by using uterus ultrasound and measurement of beta-HCG.[36]

On the prognostic level, in order to decrease mortality and morbidity, an urgent surgical intervention is required, especially in cases of complicated uterine perforation.

In one study, survival rates reached 93% with 2 death cases, during a whole century (1907-2012).[15]

CONCLUSIONS

Abortions may lead to many complications. Among these, small bowel obstruction due to uterine perforation is a rare but serious one. This complication could remain not recognized during the abortion, and patients could present even weeks later with complications secondary to the perforation.

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