Surgical removal of an intrauterine device perforating the sigmoid colon: A case report

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Abstract Background: Intrauterine devices (IUDs) are among the most common contraceptive methods in the world, but have been associated with extrauterine dislocation and bowel perforation. We report a case of an IUD perforation of the sigmoid colon.

Case report: A 35-year-old woman with complaints of abdominal pain, fever, and diarrhea underwent exploratory laparotomy. During the procedure, a left tubo-ovarian abscess was found as well as an IUD extruding through the uterine cavity with the two wings of the device entirely in the lumen of the sigmoid colon. The patient had total abdominal hysterectomy with bilateral salpingo-oophorectomy with resection of the sigmoid colon.

Conclusion: This is a report of a symptomatic perforation by an IUD into the sigmoid colon after a period of 10 years in situ.

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Introduction

Intrauterine devices (IUDs) are among the most common contraceptive methods in the world, but have been associated with a number of health risks that although rare, can occur. IUD problems include infection, uterine bleed, ectopic pregnancy, and uterine perforation necessitating surgical removal of the IUD. Uterine perforation is the most serious complication of the IUD, occurring in 1.6 per 1000 insertions. It is most commonly seen through the posterior wall of the uterus. Patients may be asymptomatic or suffer with abdominal pain, fever or vaginal bleeding, and possibly intermittent diarrhea if bowel injury is present. Perforation must also be ruled out if pregnancy occurs with an IUD in place. Most perforations are thought to be associated with the insertion procedure but reports suggest almost half of the cases were not identified for more than 1 year after insertion. These cases may be a result of partial perforations where the IUD only punctures the uterine wall and transmigration occurs afterwards due to uterine contractions. Transmigration of the IUD consequently leading to bowel perforation is a more frequent complication possibly leading to bowel obstruction or volvulus. Few cases in the literature describe perforation of abdominal organs including bladder, cecal, sigmoid, appendiceal and small bowel. The accepted treatment for displaced IUD is surgical removal by a laparoscopic approach. Laparotomy is necessary if the device is embedded in viscera or bound by adhesions. We have recently encountered an
individual in whom the IUD perforated the sigmoid colon and was treated by laparotomy.

Case report

M.M., a 35-year-old female, gravida two, para two, with no significant medical history, presented to the emergency room with complaints of abdominal pain of 1 week and 4 days of diarrhea. She admitted to having fevers, chills and a yellow vaginal discharge for 2 weeks and denied any vaginal bleeding. Physical examination was notable for lower abdominal tenderness with peritoneal signs. Ten years previously, she had an IUD placed and she returned for her last Pap smear and gynecologic exam 2 years ago. Vaginal examination revealed uterus and adnexal tenderness with a palpable mass in the posterior cul-de-sac. The threads of the IUD were visible and attempted removal of the IUD with forceps was unsuccessful. A pregnancy test was negative, the white blood cell count was 24,400 and there was no evidence of urinary tract infection. Abdomen and pelvic transvaginal ultrasound and computed tomography (CT) scan revealed a 10 cm multicystic mass in the left adnexa and the retained intrauterine device in the uterine cavity that possibly extended through the fundal myometrium (Fig. 1). The patient subsequently was given a 24-h course of IV antibiotics and was then taken to the operating room by a gynecologist for an exploratory laparotomy. She was found to have a large left tubo-ovarian abscess with purulent fluid and fecal material noted from the perforated IUD that was embedded in the proximal sigmoid colon. Intraoperative surgical consultation was obtained. The patient then underwent a total abdominal hysterectomy with bilateral salpingo-oophorectomy and due to the bowel perforation, resection of the sigmoid colon with the creation of an end colostomy and a rectal stump (Hartmann’s procedure). Pathology examination confirmed that the device penetrated the bowel lumen (Fig. 2). Histologic sections showed chronic

Discussion

Intrauterine contraceptive devices (IUDs) are known to cause uterine perforation. Risk factors include a retroverted uterus and insertion postpartum during lactation as the uterine wall is thin.3,7 Perforation usually occurs upon insertion; however, the IUDs can become embedded in the uterus and later be forced through the wall by uterine contractions into the pelvic or abdominal cavity or into adjacent organs such as the bladder, rectosigmoid, and even appendix.8 Cervical perforations have also been identified where the IUD remains in situ and the IUD strings penetrate the anterior vaginal wall and urinary bladder.9 Only a few cases currently exist in the literature documenting perforation of the sigmoid colon as in the case we present.

Most perforations are asymptomatic and therefore unrecognized at the time of insertion and may not be recognized until years later. Although, it has been suggested that surgical removal may not be necessary in asymptomatic patients,10 intraperitoneal devices could entail severe morbidity such as bowel obstruction, perforation, abscess and fistula.11 The triad of abdominal pain, fever and intermittent diarrhea associated with a missing IUD has been suggested as representing the signs and symptoms of bowel injury.9 If a patient becomes pregnant or the IUD string is not visible at the external os, uterine perforation should be suspected. Vaginal ultrasonography and other diagnostic tests are necessary to determine if the IUD is still present in the uterus. If the IUD is not contained by the endometrial cavity, x-ray and CT of the abdomen and pelvis can be useful for diagnosis.

Intrauterine devices within the uterus may be removed by pulling it out by its strings, and if the strings are missing, IUDs may be removed by dilation and curettage or hysteroscopy.
In cases where the IUD has migrated outside the endometrial cavity or intra-abdominally, several methods have been described to remove the IUD from the perforated viscous, including colonoscopy, appendectomy and laparoscopic approaches. The currently accepted treatment for removal of a misplaced IUD is its removal by surgical laparoscopy or laparotomy. This is recommended because of the potential for bowel perforation or intestinal obstruction. However, other studies suggest asymptomatic patients with an intra-abdominal IUD without perforation would benefit from non-operative management because of the morbidity associated with abdominal surgery and anesthesia. In our case, though, in which intra-abdominal abscess and peritonitis due to bowel perforation by the IUD are present; laparotomy with bowel resection may be necessary.

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References