

Laparoscopic Removal of a Copper Intrauterine Device from the Sigmoid Colon

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ABSTRACT

IUD translocation to the sigmoid colon after uterine perforation is a rare but serious event. Removal of the IUD in such a situation has been recommended because of the risk of complication, such as fistula formation and colonic perforation. We present the case of a 43-year-old female with a copper T380A IUD embedded in the sigmoid colon, which was removed with minimally invasive techniques.

Key Words: Intrauterine device, Sigmoid colon, Perforation, Laparoscopy.

INTRODUCTION

Uterine perforation is among the most serious complications associated with the insertion of intrauterine devices (IUD). The incidence of uterine perforation has been reported to be between 0.05% and 0.13% or 1.3 to 1.6 per 1000 insertions.^{1,2} The incidence of this complication depends on various factors, such as the type of IUD, the timing of insertion related to the termination of pregnancy, the position and anatomy of the uterus, insertion technique, and the experience of the operator inserting the IUD.¹ Uterine perforation can occur iatrogenically during the insertion by the applied mechanical force (primary perforation) or spontaneously afterward (secondary perforation). Fifteen percent of uterine perforations involve adjacent organs, usually the small or large intestines.² IUD-related complications involving the intestines include obstruction, perforation, ischemia, mesenteric injury, stricture and fistulae.¹

We describe a case of removal of a copper T380A IUD embedded in the sigmoid colon by using laparoscopic techniques.

CASE REPORT

A 43-year-old, gravida 4, para 4 female had an IUD placed 3 years earlier after her fourth vaginal delivery. She had a lifelong history of back pain that had worsened lately, for which she underwent a pelvic ultrasound that failed to identify her IUD in the uterus. A CT scan of the abdomen and pelvis was performed that showed the IUD in an extrauterine position with the stem embedded in the sigmoid colon wall (**Figure 1**). Bimanual examination revealed a normal-sized uterus without palpable adnexal masses. Part of the IUD was felt through the vaginal wall in the posterior cul-de-sac and was fixed. A flexible sigmoidoscopy was performed, and the stem of the IUD was visualized within the colonic lumen (**Figure 2**). The patient was electively taken to the operating room for attempted laparoscopic removal after a mechanical bowel preparation. Intraoperatively, dense adhesions were seen in the posterior cul-de-sac between the posterior aspect of the uterus and the anterior aspect of the sigmoid colon near the recto sigmoid junction which were taken down

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Figure 1. CT scan demonstrating the extrauterine position of the IUD in the colonic lumen. (solid white arrow-head)



Figure 2. Endoscopic view of the IUD within the colonic lumen.

using blunt dissection with an atraumatic grasper until the IUD wings embedded in the colon wall were identified (**Figure 3**). The IUD was then removed from the colon and subsequently from the abdominal cavity through the laparoscopic 5-mm port in a similar technique of IUD removal from the uterine cavity, by grasping and pulling on the string and allowing the T wings to bend inside the port. The resultant colotomy was repaired laparoscopi-

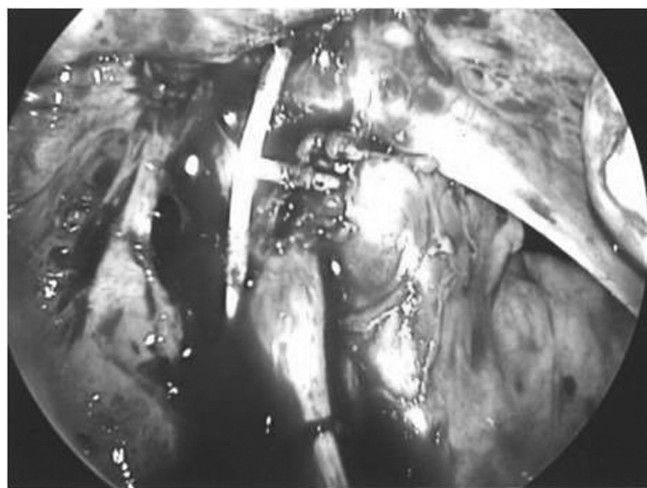


Figure 3. Intraoperative laparoscopic view of the IUD embedded in the colonic wall.



Figure 4. Intraoperative view of the colonic repair following removal of the IUD.

cally intracorporeally by using 2 interrupted 2-0 silk sutures (**Figure 4**). A flexible sigmoidoscopy was then performed and the colon clamped laparoscopically with an atraumatic grasper proximal to the repair site and insufflated with air. The repair site was submerged under water and no air leak was seen. The patient had an uncomplicated postoperative course and was discharged on day 2 from the hospital and has done well 12 months postoperatively.

DISCUSSION

Most uterine perforations are asymptomatic and therefore unrecognized at the time of insertion.³ Nonoperative man-

agement of a migrating IUD has been recommended in the past because of the morbidity associated with its removal.³ However, this complication can lead to pain, fibrosis, and adhesion formation and in some situations may result in penetration into adjacent organs including the urinary bladder, sigmoid colon, appendix, and small bowel.^{3,4} Perforation into the bowel can result in abscess formation, intestinal ischemia, or volvulus.³ Therefore, it has been suggested that surgical exploration and IUD retrieval should be the primary therapeutic approach for patients with an IUD-related complication.^{3,4} Arslan et al¹ in a review of the literature identified 47 cases of uterine perforation complicated by intestinal penetration. The Copper-7 and copper-T IUD accounted for half the reported cases of intestinal perforation in the literature.¹ IUD-related intestinal perforations primarily involved the sigmoid colon, followed by the small intestine and rectum.¹ Most commonly, patients found to have an IUD partially or completely embedded in the colonic wall were managed with a laparotomy.^{1,4} With advances in laparoscopy, these situations are being increasingly managed with minimally invasive techniques. Previous reports of laparoscopic exploration and removal of translocated IUD from the sigmoid colon have had variable clinical outcomes.⁴ Inceboz et al⁵ reported the laparoscopic removal of an IUD in the sigmoid colon that resulted in a sigmoid perforation requiring a temporary colostomy. Gungor et al⁶ and Baakdah et al² reported removal of partially embedded IUDs in the sigmoid colon without any adverse consequences. Recently Chi et al⁴ removed an IUD that had completely perforated into the sigmoid colon by performing a laparoscopic-assisted resection of the involved segment of the sigmoid colon. They recommended that partial penetration of an IUD into the colonic wall may be removed laparoscopically with intracorporeal repair of the colonic defect.⁴ It was also suggested by them that a full-thickness perforation by an IUD into the colonic wall should be managed by resection of the involved colon with primary anastomosis.⁴ In our case, we laparoscopically removed the IUD that had completely perforated through the colonic wall into the lumen and intracorporeally repaired the resultant colotomy, avoiding resecting the colon and avoiding the morbidity of not repairing the colotomy. There have been reports in the literature of removing IUDs that are embedded in the colonic wall and are visible within the colon lumen with a colonoscope.⁷

The risk of using this approach is that without primarily repairing the colonic defect there can be intraperitoneal contamination from intestinal contents leading to abdominal sepsis and the possible need for an emergent laparotomy.¹ Therefore, we do not recommend this approach to managing IUDs completely perforating the colon wall. Our experience would suggest that full-thickness perforations of an IUD through the colonic wall can be safely managed without resecting the involved colon by using advanced laparoscopic techniques.

CONCLUSION

Use of proper technique in IUD insertion is important to avoid primary uterine perforation. However, spontaneous migration can occur rarely, and it is unpredictable. Use of imaging studies, such as ultrasound and CT scans, are essential to identify the location of the IUD. Removal of the IUD is indicated even in asymptomatic patients, and the use of minimally invasive procedures is feasible in select patients.

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