CASE REPORT

Laparoscopic removal of migrated intrauterine device

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SUMMARY

Intrauterine device (IUD) is a popular long-acting reversible contraceptive device with an estimated rate of use of about 5.3%. It is highly effective but not without complications, one of which is uterine perforation. The patient was a 32-year-old female who presented with nausea, vomiting and right upper quadrant abdominal pain that was tender on palpation. CT scan was performed and they found signs of acute calculous cholecystitis with incidental finding of a migrated IUD in the left lateral mid-abdomen within the peritoneal cavity. She underwent a laparoscopic cholecystectomy followed by a successful IUD retrieval. Most uterine perforations occur at the time of insertion; however, partial perforation with subsequent delayed complete perforation may also occur. This case emphasises the importance of a full workup for a missing IUD and that, if incidentally found, IUDs can be removed safely laparoscopically in conjunction with another procedure.

BACKGROUND

Intrauterine device (IUD) is a popular long-acting reversible contraceptive device implanted in the uterine cavity. It is widely used and very effective at preventing pregnancy. The IUD has generally been shown to be safe but, as with any birth control methods, there are potential side effects and complications. Some complications are common, such as abdominal pain and abnormal bleeding.¹ Others, however, are uncommon such as pelvic inflammatory disease, expulsion, retraction into cervix or uterus and uterine perforation.²

Uterine perforation overall is a rare complication, occurring in anywhere from 0.5 to 13 per 1000 individuals secondary to IUD placement.^{2,3} While the primary cause is usually idiopathic, data suggest that perforation can be associated with the copper IUD, insertion in lactating women, a retroverted uterus, skill of the operator and lack of follow-up.² Most perforations occur in the posterior uterine wall and occur less than 1 month after insertion. Turok *et al* examined 95 cases of uterine perforation due to an IUD and found that all patients were parous, had never undergone a caesarean section and had more perforations due to levonorgestrel IUDs than copper IUDs. The latter finding was most likely due to the increase in prevalence and popularity of the levonorgestrel IUD. The most commonly reported symptom was 'missing strings'; however, pregnancy can also be a reporting symptom and complicates the management.³

Most perforations occur at the time of insertion, but partial perforation with subsequent delayed complete perforation may also occur. About 30% of perforations are asymptomatic, and 71% present with abnormal uterine bleeding or abdominal pain as the first symptom. Some patients may also present with pregnancy. If an IUD cannot be found in the uterus on ultrasound, an abdominal X-ray must be done to document if it is located in the peritoneal cavity.¹ The current recommendation is to remove all peritoneal or myometrial IUDs laparoscopically, regardless of whether or not the patient is symptomatic. This case examines a 32-year-old woman who presented with right upper quadrant pain due to acute calculous cholecystitis; an IUD

Figure 1 CT scout imaging of the intrauterine device and the retrieved intrauterine device.

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Figure 2 Laparoscopic images showing dissection of the IUD from the omentum and successful retrieval.

was seen incidentally on the CT imaging done at the emergency department.

CASE PRESENTATION

The patient was a 32-year-old female who presented with right upper quadrant abdominal pain and nausea without diarrhoea or constipation. The abdominal pain was sharp and constant, aggravated by movement and oral intake, and was not relieved by any factors. She denied any abnormal bleeding, abdominal trauma, recent travel or a change in her diet. On physical examination, her abdomen was non-distended, tender to palpation in the right upper quadrant, with an equivocal Murphy's sign. There was no rebound tenderness or guarding. Vital signs and laboratories were within normal limits. CT scan was performed and they found signs of acute calculous cholecystitis with incidental

finding of a migrated IUD in the left lateral mid-abdomen, within the peritoneal cavity (figure 1). When discussed with the patient, she said she had a uterine ultrasound 6 years ago to investigate missing IUD strings. When they did not see anything on the ultrasound, her obstetrician-gynaecologist assumed it had fallen out and no further investigation was done. Based on her presentation of acute calculous cholecystitis, the standard of care was to perform same admission laparoscopic cholecystectomy. With the incidental findings of migrated IUD, she also consented to concomitant removal of IUD. She was amenable to surgery and underwent a laparoscopic cholecystectomy followed by laparoscopic removal of the IUD (figure 2). Her postoperative course was uncomplicated.

DISCUSSION

In this case, it was demonstrated that an asymptomatic migrated IUD could be safely removed laparoscopically and concomitantly with another laparoscopic procedure. Previously, asymptomatic migrated IUDs were not thought to be harmful and were not necessarily removed. Currently, however, experts advised that perforated IUDs should be removed immediately due to potential for fibrosis and bowel perforation.² The omentum (26.7%), pouch of Douglas (21.5%) and colonic lumen secondary to perforation (10.4%) were the most common sites where IUDs were found.⁴ Laparoscopic removal is the most common method, but it has its limitations. In systematic review by Gill *et al*, 179 cases documented in literature that highlight IUD removal via laparoscopy, 64.2% were successfully completed without conversion to laparotomy.⁴ Adhesions and bowel perforation were correlated with higher rates of failure, and conversion to laparotomy. Most of the cases they examined, however, had the operation specifically for IUD removal and were not in conjunction with another procedure. Additionally, most of the IUDs were found in the lower abdomen. They also did not report the timing with which the missing IUD presented.

In this case, the IUD was found in the left lateral mid-abdomen, a significant distance away from the uterus. While adhesions and omental covering were present, we were able to safely remove it laparoscopically. This indicates that the presence of adhesions does not always signify an increased risk for conversion to open laparotomy. This case is unique in that her presenting symptoms were not associated with nor were they caused by her migrated IUD. It emphasises the importance of a full workup for a missing IUD and that, if incidentally found, can be removed safely laparoscopically in conjunction with another procedure.

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Contributors APS conceptualized the case report and did the procedure. APS, CW and ZS prepared the initial drafting of the paper. APS, DSH, CW and ZS did the research, editing and final drafting of the paper.

Competing interests None declared.

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Learning points

- Migrated intrauterine devices (IUDs), while sometimes presenting with symptoms, are frequently asymptomatic. The patient will present to her obstetrician-gynaecologist or primary care physician complaining of lost strings.
- It is imperative that an ultrasound and possibly an abdominal X-ray be performed before the conclusion is made that it has fallen out.
- If the IUD is found incidentally on imaging when the patient has other surgical complaints, the IUD can be safely removed laparoscopically at the same time, given that the patient is a good surgical candidate.
- This case emphasizes the importance of a thorough history and accurate imaging in the surgical setting to provide the best care.

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