

FAR-MIGRATED INTRA-ABDOMINAL INTRAUTERINE DEVICE WITH ABDOMINAL PAIN

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Intrauterine devices (IUDs) remain one of the main methods of choice for birth control in the world, especially in developing countries. Even in the United States, after recovering from the adverse impact of the Dalkon Shield, IUDs have reemerged on the market since the late 1980s [1]. Uterine perforation by an IUD is a rare but important complication of IUD use, and various reports have discussed this previously. A misplaced intrauterine device can migrate to various positions in the pelvic or intra-abdominal cavity, which may cause a range of different complications and morbidities. Expectedly, the longer the distance from the uterus, the less likely such a migration will occur. Here, we report a case involving a misplaced IUD that had migrated a long distance to the omentum surface of the left upper quadrant of the abdomen, resulting in abdominal pain. Furthermore, we reviewed the literature on IUD migration in order to address the issue.

A 43-year-old female, gravida 2, para 2, presented at our emergency room with dull, vague, chronic abdominal pain that had been present for many years, but which had become worse 1 day previously, especially over the left upper quadrant of the abdomen. Initial physical examination and laboratory tests including a complete blood count and blood biochemistry failed to demonstrate any abnormalities. The abdominal plain film interestingly showed a metallic T-shaped shadow resembling an IUD located within the most affected region (Figure 1). An abdominal and pelvic computed tomography scan confirmed an intra-abdominal but extra-omentum position of the object (Figure 2). The patient's past history revealed that she had undergone an uncomfortable IUD placement at a gynecology clinic about 20 years previously, but there had been no further checkup from that time on the IUD's position and



Figure 1. Abdominal plain film reveals a metallic T-shaped shadow resembling an IUD (arrow) in the left upper quadrant.

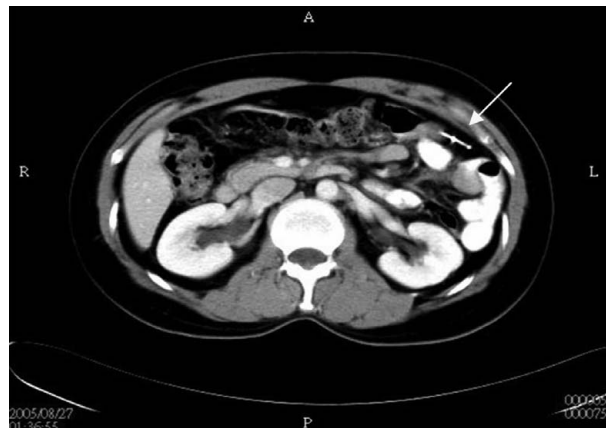


Figure 2. Computed tomography shows that the object (arrow) lies above the intestines at the level of the junction between the thoracic and lumbar spines.



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neither had the apparatus been replaced nor removed. The patient could not recall the type of IUD inserted. The intermittent lower abdominal pain had developed sometime later and had gradually become chronic, vague and diffuse. She had even given birth to two children

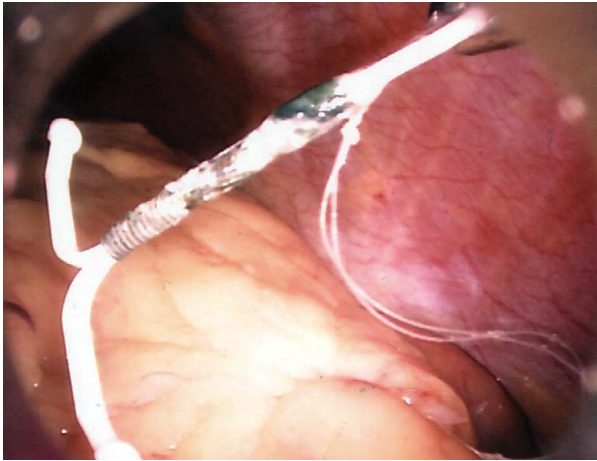


Figure 3. A laparoscopic view showing the removal of the device. Note the strings that are still attached to the device and absence of severe adhesions and embedding. Only a limited amount of filmy adhesive debris was found coating the copper coils.

5 and 7 years after the IUD insertion procedure; however, her obstetric physicians had always supposed that the IUD had been spontaneously expelled. Under the impression of an intra-abdominally migrated IUD, diagnostic laparoscopy was performed on the patient. An IUD was found lying over the omentum surface of the left upper quadrant of abdomen, as what the imaging studies previously indicated. Removal of the IUD was fortunately simple because of absence of severe adhesions or embedding (Figure 3). No additional abnormal operative findings with regard to other abdominal and pelvic structures were found. The patient was discharged the next day with great improvement in her original discomfort. Outpatient follow-up showed no signs of recurrence of the symptoms.

There are many potential complications of IUD insertion, and they are usually classified as immediate or delayed [2]. Immediate complications include perforation of the uterus, vagal reaction, vaginal bleeding, and lower abdominal pain. Delayed ones include menometrorrhagia, often accompanied by dysmenorrhea, lost IUD, total or partial expulsion of the IUD, ectopic pregnancy, and pelvic infections (pelvic inflammatory disease). Among them, examples of a lost IUD that has migrated for a long distance are rare but are interesting, based on their daedal clinical manifestations.

In 1991, the International Planned Parenthood Federation reported the incidence of uterine perforation by IUD to be 0.3–0.6 per 1,000 insertions [3]. According to recent studies, this adverse event occurs in 0.87 per 1,000 cases, but the statistics generally seem to fluctuate between 0.05 and 13 per 1,000 insertions [4]. Perforation of the uterus by an IUD is supposed to happen

mostly during or soon after IUD insertion rather than as a delayed event. Therefore, it is recommended that IUDs be inserted after proper case selection by trained medical professionals [5]. For example, patients with extremely retroverted or retroflexed uterus are at higher risk of uterine perforation. Furthermore, patients who have just delivered vaginally (within the first 6–8 weeks postpartum) have a greater tendency to expel their IUDs spontaneously because of an incompletely involuted uterus and an unhealed cervix. Sonography, whether performed transabdominally or transvaginally, can be an additional tool in case selection. It also plays a crucial role in the evaluation of post-insertion IUD position [1]. We recommend that sonography be included routinely in post-insertion care. However, except for obvious total or partial perforation, some authors claimed that it is not necessary to replace any abnormally positioned IUD after insertion, because abnormal positioning has been found to have occurred in every case where there is an abnormally positioned uterus [6]. In addition, since lowly inserted T-shaped IUDs have been found to have a tendency to move upward and readjust their position after insertion, possibly due to uterine contractions acting on their transverse arms, initial concerns about a low placement are usually not justified [7]. Nonetheless, sonographic reevaluation of the IUD's position after 2–3 months is still necessary.

There have been many case reports concerning IUD migration in the literature, and almost every kind of IUD including the latest frameless IUD Gynefix, which is characterized by having a streak-like rather than well-framed T-shaped design [8], have been involved in this type of adverse event. Furthermore, the site of migration has been reported as being almost everywhere in the pelvic and intra-abdominal cavity. Regardless of whether IUD migration is caused by direct perforation of tissue or by transportation through fallopian tubes, gynecologic tissues other than endometrial cavity are the most affected targets. Secondary perforation of the uterine cervix [9], implantation in the broad ligament [10], implantation in an ovary [11], and implantation in a submucosal uterine myoma with growth of the myoma around the apparatus favored [12] have been widely reported. After the gynecologic system, the urinary system and rectosigmoid colon have been found to be the next most commonly involved. The associated problems include uterovesical fistula [13], lower urinary tract symptoms caused by bladder perforation and calculus formation around the IUD [14], and stricture of the sigmoid colon [15]. Gastrointestinal tract organs other than the rectosigmoid colon are seldom affected, but there have been reports involving IUD appendicitis [16] and small intestine gangrene [17]. Compared with these

conditions, the case of IUD migration reported here, which involves migration to a far intra-abdominal site such as the left upper quadrant of the abdomen or the left hypochondrium, is extremely rare. Uterine perforation by IUD and subsequent "transportation" by bowel movement is a possible cause. However, this is not the absolute possible limit of IUD migration. A report has indicated that an IUD can cross the natural barrier of the peritoneum to cause retroperitoneal fibrosis and resultant encasement of the ureter followed by hydro-nephrosis [14]. In another case report, the translocation of an IUD to the Retzius space was reported. Such a migration is thought to be due to perforation of the cervix and the dilatation-contraction movements of the bladder [18].

In view of the importance of misplaced IUDs and their related problems, there should be a high index of suspicion and a careful survey of the potential condition in patients with a history of a "lost" IUD and possibly associated discomfort. As in the case reported here, although an abdominal plain film may be sufficient for diagnosis, other modalities such as hysterosalpingography, ultrasound, computed tomography and even magnetic resonance imaging can help determine the exact position of an IUD and any complication caused by its translocation. This is a crucial step in the evaluation. Once the diagnosis is made, surgical removal of the apparatus is necessary, even in an asymptomatic patient. If the device is partially located in the endometrial cavity, hysteroscopy could be attempted for the removal. However, if the IUD is totally perforated and is present in the abdominal cavity, the safest and most acceptable way to remove the IUD is by laparoscopy. Some authors have concluded that most lawsuits concerning perforated IUDs were prompted by the use of laparotomy or colpotomy [19]. We demonstrate here a successful case of the laparoscopic removal of a very rare intra-abdominal IUD that had migrated a very long distance and prove that the management of choice for an intra-abdominal IUD is by means of laparoscopy, as has been widely stated in the literature previously.

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