Colonoscopic Removal of an Ectopic Intra Uterine Device Located within the Peritoneal Cavity and Embedded in the Proximal Sigmoid Colon Wall, Case Report and Review

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Abstract

A migrated Intra Uterine Device penetrating the proximal sigmoid wall was associated with a pericolic abscess which was treated with antibiotics. Localized intra-peritoneal inflammation generated fibrosis and pericolic encapsulation. This process of walling off the affected area allowed the endoluminal retrieval of the displaced IUD during a therapeutic colonoscopy, carried out under sedation. Although at higher risk of secondary general peritonitis than the endoscopic removal of a device located under the peritoneal reflection, the successful colonoscopic removal of a penetrating intraperitoneal colonic foreign body is feasible after a time interval under antibiotic cover.

Case Presentation

A 53 year old lady presented to the accident and Emergency Department (ED) reporting a six-week history of an increasingly more severe lower abdominal pain localized in the Left Iliac Fossa (LIF). She also had mild dysuria but her bowel function was normal. On abdominal examination, the suprapubic and LIF areas were tender on palpation, inflammatory markers were slightly raised.

A Computed Tomography scan (CT) of the abdomen showed a migrated Intra Uterine Device in the lower abdomen, partially in the proximal sigmoid colon wall, above the peritoneal reflection, lying partially within its lumen, associated with two adjacent 5 cm × 3.5 cm and 7 cm × 6.5 cm collections.

Previously, patient had an Intra Uterine Device (IUD) inserted twelve years ago and she became pregnant a few months after the insertion. She delivered by elective c-section because of breech presentation and believed that the device had been removed.

Three years after the pregnancy, a routine ultrasound scan of the pelvis showed a posteriorly displaced IUD, proximal to the cervical region. No fluid collection was noted in this area at this stage, no further action was taken.

Patient had been asymptomatic for eleven years.

She was admitted to the surgical ward and treated initially with co-amoxiclav, metronidazole and analgesia and she was discharged when she became asymptomatic with normal blood tests. A second CT scan was done three months later: the IUD was found still lying in the proximal sigmoid wall but it showed a full resolution of the two collections (Figures 4 and 5).

Following a pre-operative assessment, an attempt at a colonoscopic removal of the device was planned.

Patient was informed of the possible risk of leak from the site of the sigmoid wall following the foreign body removal and she consented to a colonoscopic retrieval attempt with the possibility of a conversion to a laparoscopic or open intra abdomino-pelvic surgery procedure. She had full bowel preparation and broad spectrum antibiotics cover.

The therapeutic colonoscopy was carried out under sedation (Midazolam and Fentanyl). The vertical part of the T shaped IUD was seen in the proximal sigmoid, fully within the lumen of the sigmoid with its transverse part embedded in the sigmoid wall (Figure 1). The vertical part of the device was grabbed with forceps and a gentle progressive traction was exerted until the fully intact device was entirely within the lumen of the sigmoid. It was then retrieved through the

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sigmoid, rectum and anus (Figure 2 and 3). Patient was discharged the next day after a plain X-ray of the abdomen showed no sign of pneumoperitoneum. Patient was prescribed oral antibiotics covering gram negative and anaerobes bacteria for one week (ciprofloxacin and metronidazole).

Six weeks later, she was reviewed in clinic and was pain free with normal bowel movements. Clinical examination was normal.

Discussion

Intra uterine device insertion can lead to uterine perforation in 0.6% to 1.6% of cases with migration causing significant and potentially prolonged morbidity [1]. Various removal techniques of an ectopic IUD have been carried out successfully by laparoscopic approach, laparotomy [2] and endoscopically [3].

The extra uterine migration of an IUD is a complication of IUD insertion with a risk of less than 1 in 1,000 in low risk cases, but the incidence raises up to 5.6 if the patient is less than 36 weeks since postpartum and being lactating at time of insertion.

The diagnosis is usually made because of symptoms in relation with its location or following the observation of a lost device. A device is said to be lost when the strings of the device are not visible at the external os of the cervix. A lost device can be due to spontaneous expulsion or the IUD can have perforated partially or fully the uterus and has migrated.

An intra-abdominal location is secondary to unrecognized misplacement and perforation of the cervix at the time of insertion.

The prevalence of abnormal position is close to 5% and clinical evaluation results and actual abnormal position of the device found with trans-vaginal ultrasound have shown little difference. When the threads are lost, an ultrasound examination can ensure the correct location of the device. Nevertheless, if the ultrasound scan cannot locate the IUD and there is no definite evidence of expulsion, a plain X-ray should be arranged to identify an extra-uterine device.

For devices outside the uterine cavity, the most common location, in 52.3% of patients [4], is the Douglas pouch. Migration of the device may be unnoticed in a third of the cases.

Asymptomatic displaced Intra Uterine Devices are usually discovered during a follow up examination.

After traversing the uterus, the IUD may stay silent for years before causing complications, depending on the course of its migration.
Migration in urinary bladder, rectum, sigmoid colon and small bowel has been reported.

When the device has been precisely located, a laparoscopic, endoscopic or open laparotomy removal can be considered, depending on its location and the clinical presentation.

In some cases, a displaced IUD can be managed conservatively if there are no symptoms in the context of severe comorbidity [5].

If the site of the IUD entrance in the bowel is above the peritoneal reflection, there is a risk of peritoneal infection. However, as the device has chronically migrated, triggering a chronic inflammatory process generating surrounding fibrous tissue, there is a progressive encapsulation of the foreign body and formation of a barrier minimizing the risk of soiling the peritoneal cavity during an endoscopic removal.

A colonoscopic attempt at removing a migrated colonic IUD within the peritoneal cavity can never the less potentially change a sealed, encapsulated colonic progressive penetration of the foreign body into a frank perforation due to insufflation pressure and traction forces on the colon, the mesocolon and on the accumulated sealing fibrinous material.

This risk is mitigated by the manufacturing characteristic of these Intra Uterine Devices which are flexible and can be bent out of shape; therefore the tensions on the surrounding tissues are minimized during the pulling of the embedded device into the colonic lumen.

In our previous case of a migrated IUD, found posterior to the upper rectum with one branch of the T in the rectal lumen [3], the device was also removed using the same endoscopic technique but the risk of peritoneal contamination was absent as it was below and behind the peritoneal reflection in the pelvis. There was no pre-sacral collection.

We benefited for this patient from the steady progressive encapsulation of the device by fibrosis over time which was sealed off from the main cavity at the time of the removal.

Patient was closely monitored after the endoscopic removal of the device. She was prescribed broad spectrum antibiotics covering gram negative and anaerobes germs for one week. We advise such caution, mainly when the migrated IUD is lying above the peritoneal reflection.

Conclusion

The colonoscopic removal of an intra peritoneal migrated IUD from the colonic wall can be carried out safely after a time interval of more than 4 weeks following localized peri-colonic abscess treated with antibiotics covering gram negative and anaerobes bacteria.

References