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Acute Peritonitis Complicating Sigmoid Colon Perforation by Migrating Intrauterine Device: A Case Report and Review of The Literature

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1. Abstract

1.1. Introduction

Intrauterine device (IUD) migration is a rare situation which can cause some serious complication such as colon perforation and high risk of infection. Its treated surgically by laparoscopy or laparotomy depending of the difficulties and complications.

1.2. Presentation of Case

We show the case of a 45 year old woman, G2 P2 carrying an IUD for 15 years, who consulted for abdominal pain and fever. Abdominal imaging revealed the presence of intraperitoneal effusion of medium abundance and pneumoperitoneum. Diagnostic laparoscopy was done and the IUD was found to be embedded in the wall of the sigmoid colon which was removed after laparotomy conversion by excision of the involved segment followed by the suturing and drainage.

1.3. Conclusion

In rare cases IUD can migrate, still asymptomatic for years or cause sometimes serious complications like intestinal perforation or abscess and peritonitis, this risk must be avoided by treating all migrating IUD even asymptomatic ones.

2. Introduction

Intrauterine devices (IUD) are effective, safe, and widely used. It is actually the most used contraception mean in Tunisia 22% Their use is about 14.7% in the developing countries and 8.9% in developed ones [1]. The perforation of the uterus by the IUD is a relatively rare complication whose incidence is estimated between 1.3 and 1.6 per 1000 insertions [2], but the consequences can be very serious. It can occur immediately or several years after the insertion of the device [3]. Ectopic migration of IUD with involvement of adjacent organs can cause catastrophic complications such as gastrointestinal perforation [4]. Ideal treatment of IUD migration remains controversial [5]. We report a case of an ectopic migration of IUD with sigmoid colon perforation.

3. Patient and Observation

It's about a 45 year old patient with no notable medical history, underwent vaginal delivery 15 years ago followed by a copper IUD insertion . She presented to our hospital, with abdominal pain evolving for two weeks that increased the last two days with appearance of fever. The presumptive diagnosis of acute peritonitis was made. On clinical examination at admission, the patient had good general condition, hemodynamically stable with only pelvic sensitivity at the bidigital vaginal palpation. Laboratory tests showed : leukocytosis (WBC – 15000 cells/mm3) and high rates of CRP : 220. The pelvic ultrasonography revealed ; an intraperitoneal effusion of medium abundance with an empty normal sized uterus. A radiograph of the abdomen without preparation showed a pneumoperitoneum, The diagnosis of acute peritonitis by perforation of hollow organ was retained and surgical exploration was planned. Initially laparoscopic exploration was attempted, however, because of intense local inflammation and adhesions, conversion to laparotomy was performed and

Pfannenstiel incision was done (Figure 1). An IUD was found to be embedded in the wall of the sigmoid colon .The device was removed by wedge resection of the involved segment followed by suture of the perforation, and drainage of the abdominal cavity. The postoperative course was uneventful. At the 12-month follow-up, the patient was asymptomatic.

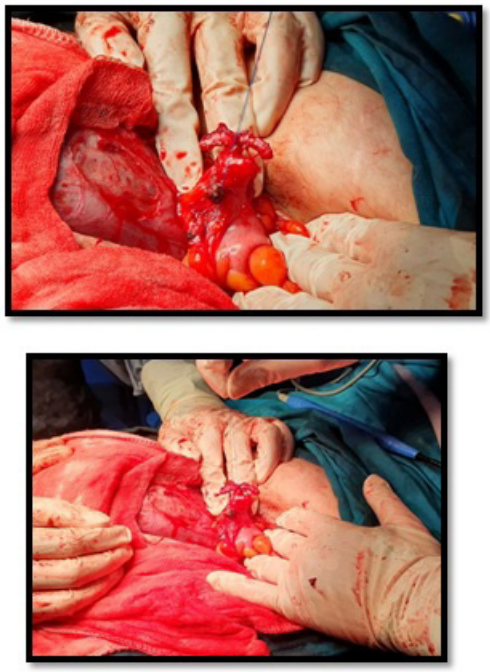

Figure1: IUD found in the wall of the sigmoid colon.

4. Discussion

The intrauterine device is an effective, safe, well-tolerated, reversible, inexpensive and popular method of contraception. Unfortunately, it is not without risks. The insertion of an IUD can be associated with serious complications such as abdominal pain, pelvic inflammatory disease, expulsion, retraction into the cervix or uterus, uterine perforation, infection and translocation in adjacent organs [6]. Migration of an IUD from the uterus to other organs can be considered to be the result of its expulsion and uterine perforation. The expulsion of the devise is a rare but severe complication. Its risk factors are linked to the device itself such as its structure and components (higher rates occur with copper containing IUD) or the nature and rigidity of the inserted tube, or linked to the patient herself such as : past history of expulsion, young age, dysmenorrhea, the size, position, or the anatomical configuration of the uterus (higher rates occur in retroverted uterus), the insertion period (postpartum and post abortion, higher rates occur in lactating women), or linked to the skill of the operator and the follow-up [7,8,9].

In most cases, uterine perforation is primary or iatrogenic, occurring immediately upon insertion [7] but most of them are asymptomatic and therefore go unnoticed until the follow-up examination is performed or when the patient becomes symptomatic [5,8]. For early detection, some authors recommend a trans-vaginal ultrasound to be performed immediately after insertion, especially when it is difficult or extremely painful according to the patient [10]. The perforation can also be secondary or late occurring spontaneously during the first year after insertion in half of cases [11]. The literature review revealed that IUD migration, can most of the time remain silent (85% of them were) [12] and revealed just by the disappearance of the marking string or occurrence of an unwanted pregnancy in 30% of cases [5,13,14]. The triad of abdominal pain, fever and intermittent diarrhea with a missing IUD would point to a bowel injury [15], such as gastrointestinal perforation, acute intestinal obstruction, fistula, intra-abdominal abscess or even peritonitis [16,17,18]. In our case, the device's migration was revealed by its complication, as pelvic abscess after perforation of the sigmoid colon, this complication is found in 15 to 20 % of cases [19]. Many clinicians recommend a checkup 6 weeks after the IUD insertion, to look for signs of perforation such as the shortening of the string length. If IUD displacement is suspected, transvaginal ultasonography is indicated first and sometimes radiographs to show that the device is not within the uterus. [8,20]. Other times, complications such as bowel perforation, abscess formation or peritonitis are found on Computed tomography scanning or MRI. [20].

5. The Management of an Intraperitoneal IUD in Asymptomatic Patients is Controversial

The World Health Organization recommend that displaced IUDs should be removed to avoid possible complications due to intraperitoneal adhesion formation, or migration into nearby organs. [21]. However, some authors, such as Markovich [22] or Adoni and Ben Chetrit [23] claim that it is not mandatory to remove the IUD in asymptomatic uncomplicated cases and advocate simple monitoring [11,13,17] due to the risk of intra-operative secondary migration [19] and to avoid the inherent morbidity of surgery and anesthesia [24]. In our observation, IUD migration was practically asymptomatic for years, with appearance of gradually increasing abdominal pain, complicated by local peritonitis associated to sigmoid perforation. Generally, the perforation occurs through the posterior wall of the uterus [17]. The migration may be partial, limited into the uterine wall, or total, into the peritoneal cavity or reaching the nearby organs in 15% of cases [24,25]. The digestive organs that are the most involved, with a clear predominance for the sigmoid colon (40.4%), followed by the small intestine (21.3%) and the rectum (21.3%) [18,25,26]. This complication could have been avoided if the ectopic IUD was diagnosed and removed earlier. In the literature, the success rate of laparoscopy as a method for removing a mislocated IUD from the peritoneal cavity, was of 77% reported by McKenna in 1982. The main causes of failure were the fact that the device was deeply embaded in the omentum and was not seen during the laparoscopy [27] and the existence of multiple adhesions which made it necessary to convert into open surgery after a first laparoscopy [17,18]. In our

case, we first tried to remove the IUD laparoscopically, but the existence of adhesions made difficult to identify the device and the dissection was very risky; thus the conversion to a laparotomy and a Pfannenstiel incision was made. In some complicated situations such as gastrointestinal perforation peritonitis, intraperitoneal abscess or fistula, laparotomy is recommended in order to remove the device and treat the complication [28].

6. Conclusion

Intrauterine devices are commonly used as contraceptive method, because of its safety, its efficiency and its low cost, but in rare cases, some complications can occur. Abdominal complaints associated with a history of carring IUD should let the clinician consider a possible IUD migration and its risk. Ultrasound and computed tomography are the first choices for locating missing IUD. migratory IUDs should be removed whenever identified even in asymptomatic cases. The laparoscopic approach is a safe and appropriate method for trained operators.

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