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Case Report

Dislodged Levornogestrel-Intrauterine System Intra-Abdominally without Uterine Perforation: Is it Possible?

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Abstract

We report a case of dislodged Levornogestrel-intrauterine system (LNG-IUS, Mirena®) without evidence of uterine perforation. A 37-year-old Para 4+1presented with 3 months history of lower abdominal pain. Examination and imaging showed that the device was not present in the uterine cavity. She underwent laparoscopic retrieval of Mirena®. There was no evidence of uterine perforation intra-operatively. This case illustrated the rare possibility of dislodged Mirena®intra-abdominally without evidence of uterine perforation. The management for missing IUS was reviewed.

Keywords: abdominal pain, contraception, laparoscopy, Levonogetsrel, uterine perforation

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Introduction

Levonorgestrel-intrauterine system (LNG-IUS, Mirena®) was one of the most commonly used long-acting reversible contraception. Its usage ranges widely from 2% to 80% in different countries (1), with 83% of world users from Asia region (2). Mirena® being an effective contraception with reported Pearl Index of 0.15 and 0.22 through year 1 and 3 respectively (3), had been recognised as an optimal treatment option for heavy menstrual bleeding and dysmenorrhea (1). However, the usage of Mirena® was not without its side effect or complication. We reported a case of dislodged Mirena® intra-abdominally without evidence of uterine perforation and reviewed the option of management.

Case Report

A 37-year-old Para 4+1, presented to our centre with history of intermittent lower abdominal pain for the past 3 months requesting for Mirena® removal. She had Mirena® inserted in August 2014, 6 weeks post partum, by her family physician as contraception. She used the same contraceptive method prior to her last pregnancy. Soon after Mirena® insertion, she experienced some cramping abdominal discomfort, which was relieved by simple oral analgesia. Presence of Mirena® thread was confirmed for the first 3 months as she had regular self-checking. Subsequently, she started experiencing irregular and prolonged vaginal bleeding with lower abdominal pain. She had no significant medical history. Her first delivery was via emergency lower segment caesarean section for poor progress, followed by complete miscarriage and 2 full term assisted vaginal deliveries. During speculum examination, Mirena® thread was not seen. Pelvic ultrasound revealed empty uterus with no evidence of Mirena® present in the uterine cavity. Computed tomography (CT) scan showed that the contraceptive device was located at the right pelvic cavity (Fig. 1). Diagnostic laparoscopy was performed

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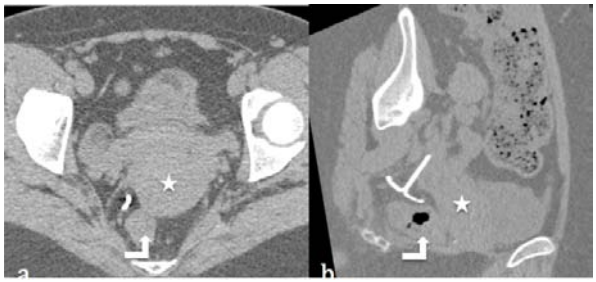

Figure 1: Non-enhanced CT scan of the pelvis in axial (a) and reformatted sagittal oblique (b). The T shape IUD is completely extra-uterine located anterolateral to the rectum (bent arrow) and postero-lateral to the uterus (star). The uterine outline is normal.

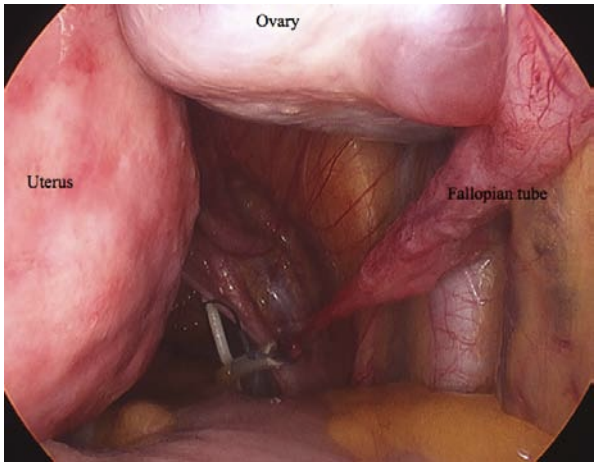

Figure 2: Laparoscopy showed presence of LNG-IUS attached to the fimbriae end of right fallopian tube.

performed. The device was found attached to the fimbriae end of right fallopian tube without any significant pelvic adhesion or evidence of uterine perforation (Fig. 2). She had an uneventful laparoscopic retrieval of the Mirena®.

Discussion

Continuous abdominal discomfort and irregular vaginal bleeding are the main reason for discontinuation of Mirena® use (4). The patient had lower abdominal discomfort and irregular vaginal bleeding for months after Mirena® insertion. She assumed those were side effects of Mirena® without any suspicious of her Mirena® being dislodged. Thus, she did not seek any treatment until her symptoms became unbearable and she requested for removal of Mirena®.

A rare complication of Mirena® insertion was uterine perforation. The incidence of such complication ranged from 1.4-2.6 per 1000 insertion (5,6). Unfortunately, only 8.5% of the perforations were diagnosed at the time of insertion (7). Majority of patients (73%) were symptomatic with mild abdominal pain or abnormal vaginal bleeding (8). Asymptomatic patients were diagnosed mainly because of missing IUD threads or unintended pregnancy. Up to 75% of patients had onset of symptoms within 24 hours of insertion (8). As the side effects of Mirena® were similar to presentation of uterine perforation, thus the mean time taken from insertion to establishing the diagnosis was around 5 months (0-69 months) (8).

Various imaging techniques had been used to locate the missing IUS with vaginal ultrasound being the most widely used modality. Other imaging includes abdominal radiography, hysteroscopy and CT scan (8,9). Besides that, Banerjee et al. described the use of fluoroscopy to help in localising the missing device when ultrasound, abdominal radiography and diagnostic laparoscopy failed to locate it (10). This patient had trans-vaginal ultrasound, which revealed absence of the device within the uterine cavity. CT scan was eventually performed and managed to locate the missing contraceptive device, which was situated in close proximity to the right fallopian tube. Unusual consequences after uterine perforation such as migration of Mirena® to the bladder (11) and small bowel obstruction (12) had been reported in the literature. Hence, imaging modalities are important pre-operative assessment tools that could assist in the planning of surgical retrieval.

Majority of patients with missing IUS were managed surgically i.e. via laparoscopic route (8). Most of these missing devices were embedded within the omentum (65%) or within the pelvic cavity (35%). Surgical findings were usually unremarkable, as majority of these patients had no intra-abdominal adhesion (8). The patient had an uneventful laparoscopic retrieval of the missing IUS as there was only minimal adhesion noted between the device and the fimbrial end of right fallopian tube. Not surprisingly, there was no evidence of uterine perforation intra-operatively as the patient still managed to feel the thread 3 months after insertion. This raises the question: can Mirena® migrate through the fallopian tube to the abdominal cavity without uterine perforation? To date, there is no published report in the literature. Hence, this assumption is disputable.

On the other hand, conservative management without surgical removal had also been reported in literature without much complication. Budiman et al. reported a 39-year-old woman who became pregnant while on Mirena®. Caesarean section performed later found that the missing device was within the omentum (13).

Furthermore, Hopkins et al described a 6% risk of congenital anomalies in 35 pregnancies while using Mirena®; whereby 34 of these pregnancies were with intrauterine LNG-IUS and one with intraperitoneal LNG-IUS (14). Hence, conservative management could be an alternative option in selected cases.

Conclusion

It was crucial to be always on the lookout for possibility of complication even with simple procedures such as insertion of Mirena®. Thorough assessment and localisation of the missing intra-uterine device with the help of imaging modalities are of paramount importance before any surgical intervention in order to minimise further morbidity and litigation.

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