Unintended Pregnancy in a Woman with a Translocated IUD and Successful Laparoscopic Management: A Rare Case in a Peripheral Hospital in Central Java, Indonesia

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Abstract

Introduction: The most serious complication of using intrauterine devices (IUDs) is uterine perforation. Studies have shown that the uterine perforation in women using IUDs varies from 0.05 to 13 per 1,000 cases. If not detected, IUD translocation can cause serious complications, including bladder or intestinal perforation, intestinal obstruction, fistula formation, abscesses, adhesions, unintended pregnancy, and chronic pelvic pain.

Case Presentation: A 31-year-old woman, G4P3A0, presented with abdominal pain and a positive pregnancy test despite having an IUD inserted in October 2022. She had no vaginal bleeding. The patient's obstetrical history included three prior vaginal deliveries. Postpartum complications in 2022 led to retained tissue in the uterus, which was cleared with medication. She was advised to use an IUD as contraception but did not follow up. Ultrasound revealed a translocated IUD anterior to the uterus, surrounded by fluid resembling a small abscess. Management included exploratory laparoscopy for IUD removal. After the procedure, a follow-up ultrasound showed a single live intrauterine fetus, with no pain or bleeding. The patient's condition improved after one week.

Conclusion: This case highlights the importance of follow-up after IUD insertion and appropriate management in cases of misplaced IUDs with unintended pregnancy.

Keywords: Unintended pregnancy, Translocated IUD, Laparoscopic

Laporan Kasus Kehamilan Tidak Direncanakan (KTD) pada Seorang Wanita dengan Tranlokasi IUD yang Sukses dengan Tindakan Laparoskopi: Sebuah Kasus Langka di Rumah Sakit Perifer di Jawa Tengah, Indonesia

Abstrak

Pendahuluan: Komplikasi yang paling serius dari penggunaan Alat Kontrasepsi Dalam Rahim (AKDR) adalah perforasi uterus. Studi menunjukkan bahwa kejadian perforasi uterus pada wanita yang menggunakan IUD bervariasi antara 0,05 hingga 13 per 1000 kasus. Jika tidak terdeteksi, translokasi IUD dapat menyebabkan komplikasi serius, diantaranya adalah perforasi kandung kemih atau usus, obstruksi usus, terbentuknya fistula, abses, adhesi, kehamilan yang tidak diinginkan, dan nyeri panggul kronis.

Presentasi Kasus: Seorang wanita 31 tahun, G4P3A0, datang dengan keluhan nyeri perut dan hasil tes kehamilan positif, pasien telah terpasang IUD pada Oktober 2022. Pasien tidak mengeluh adanya perdarahan vagina. Riwayat obstetri pasien telah melakukan persalinan pervaginam 3 kali. Pasien mengalami komplikasi postpartum pada persalinan terakhir tahun 2022 yaitu terdapat sisa jaringan plasenta, yang kemudian dibersihkan dengan obat-obatan. Pasien disarankan untuk menggunakan IUD sebagai kontrasepsi setelah uterusnya dinyatakan bersih, namun setelah itu pasien tidak melakukan kontrol lanjutan. Pemeriksaan ultrasonografi menunjukkan IUD keluar dari uterus dan terletak di depan uterus, yang dikelilingi cairan menyerupai abses kecil. Tatalaksana dilakukan dengan laparoskopi eksplorasi untuk pengambilan IUD. Setelah prosedur, pemeriksaan ultrasonografi lanjutan menunjukkan janin intrauterin tunggal yang hidup, tanpa disertai nyeri atau perdarahan. Kondisi pasien membaik setelah satu minggu.

Kesimpulan: Kasus ini menekankan pentingnya kontrol lanjutan setelah pemasangan IUD dan penanganan yang tepat pada kasus translokasi IUD dengan kehamilan yang tidak direncanakan.

Kata kunci: Kehamilan Tidak Diharapakan (KTD), Translokasi IUD, Laparoskopi

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Introduction

An unintended pregnancy is an unwanted pregnancy (occurred when no children or no more children were desired) or mistimed (occurred earlier than desired).[1] Unintended pregnancy rates are significantly higher in developing regions compared to developed areas. In 2012, out of approximately 213 million pregnancies globally, 89% occurred in developing countries, with more than half of these pregnancies occurring in Asia. Furthermore, research indicates that between 2015 and 2019, there were 121 million unintended pregnancies annually, resulting in 64 unintended pregnancies per 1,000 women aged between 15 and 49 years old.[2] Women who have unintended pregnancies face various severe complications, which can result in maternal mortality. In addition, these women are more likely to experience higher crime rates, stress in parenting and family life, lower work performance, and they have a higher risk of poor physical and mental health, inadequate self-care, and depression during pregnancy. Moreover, mothers with unintended pregnancies may neglect their pregnancy, leading to delays in getting prenatal care and reduced utilization of delivery services.[3] To address the problems caused by unintended pregnancies, several interventions have been implemented to improve the Contraceptive Prevalence Rate (CPR) and reduce the unmet need for contraception.[3]

Intrauterine devices (IUDs) are a common female contraceptive method in Indonesia. IUDs are widely used due to their high effectiveness (98-99%) in preventing pregnancy.[4] In Indonesia, there are two types of IUDs: the Copper and the Levonorgestrel Intrauterine System (LNG) IUDs. IUDs offer the advantage of being a one-time procedure for long-term contraception without causing systemic metabolic effects, making it more favorable than other birth control methods.[5] Fewer than 1 woman out of 100 becomes pregnant in the first year of using IUDs. IUDs are long acting, reversible, and can be used by women of all ages, including adolescents, and both by parous and nulliparous women.[6] The popularity of IUDs is likely attributed to their comparable effectiveness to surgical sterilization, safety, and reversibility. IUDs function through various mechanisms depending on their type (inert, copper, or hormonal). The most common types of IUDs are copper T-shaped devices and those that release levonorgestrel, a progestin that offers similar contraceptive effectiveness to combined oral contraceptives when used properly.[7]

Furthermore, IUDs are commonly used to prevent unintended pregnancies in Indonesia. Although IUDs have proven to be a safe form of contraception for many women, as with any birth control method, potential side effects and complications exist. The most frequent side effect is vaginal bleeding, while one of the most serious complications is uterine perforation. Studies have shown that the uterine perforation in women using IUDs varies between 0.05 to 13 per 1000 cases (on average, 1.3/1000).[5] This complication typically happens during the insertion process. If it is not detected, the IUD's displacement can lead to serious issues, including perforation of the bladder or intestines, intestinal obstruction, fistula formation, abscesses, adhesions, unintended pregnancy, and chronic pelvic pain. This article reports a case of unintended pregnancy due to a translocated IUD.

Case

A 31-year-old woman with parity status G4P3A0 was referred from Losari Community Health Center to the Obstetrics and Gynecology department at Dr. M. Ashari Regional General Hospital. The patient came

with a main complaint of abdominal pain. In addition, she complained about missing her period and the result of the pregnancy test was positive. The patient stated that she had an IUD inserted on October 15, 2022, at the Obgyn Clinic. She did not complain of vaginal bleeding. She also denied experiencing nausea and vomiting but noted a recent decrease in appetite.

In her obstetrical history, this marks her fourth pregnancy. Her first delivery occurred at her home, assisted by a village midwife, in 2011. She had a term delivery through vaginal delivery and giving birth to a baby boy weighing 3100 g. After giving birth to her first child, the patient chose to delay further pregnancies by using DMPA contraceptive injection for 2 years. After that, she used another contraception, the implant method, for 2 years. Following the implant, the patient returned to using DMPA contraceptive injection for 1 year. Her second delivery occurred at Losari Community Health Center, in 2019. She gave birth at full-term pregnancy through vaginal delivery, resulting in the birth of a baby boy weighing 3400 g. After giving birth to her second child, the patient was diagnosed with a benign breast tumor in her left breast and therefore was advised against using hormonal contraception. At that time, the patient was still hesitant to choose the IUD contraceptive method. As a result, after she finished breastfeeding, the patient got pregnant again and her third delivery, also at Losari Community Health Center, took place in 2022 through vaginal delivery, resulting in the birth of a baby boy weighing 2900 g. Five days after giving birth to her third child, the patient complained of abdominal pain and excessive vaginal bleeding. The patient eventually returned to the Losari community health center and was referred to Ashari Regional General Hospital. At the Obstetrics and Gynecology department at Dr. M. Ashari Regional General Hospital, the patient was informed that there were some retained tissues in the uterus. She was given medication to remove the remaining tissue and antibiotics. After one week, the patient returned for a follow-up and the uterus' retained tissue has been cleared. She was advised to have an IUD inserted as her chosen method of contraception. The patient had an IUD inserted in October 2022. After the IUD insertion, the patient has never had a follow-up. The current pregnancy constitutes her fourth, which was unintended.

During the physical examination, the patient was alert and oriented, with a blood pressure of 107/70 mmHg, a pulse rate of 72 bpm, a respiratory rate of 20 breaths per minute, a temperature of 36.4°C, and an SpO2 level of 99% on room air. She was classified as a normoweight with a BMI of 30.8 kg/m2. Regarding obstetrical examination, the abdomen was flat and soft, no tenderness, no muscular defense, no shifting dullness, and the fundal height remained non-palpable. In the gynecological examination, there were no fluor, fluxus, or abnormalities observed in the cervix. The IUD string was not visible from the cervix. All appearing within normal parameters. There was also no tissue protruding from the external uterine ostium. During the internal examination, the vulva and vagina appeared normal, the cervical portio was thick and soft. There was no tenderness upon cervical motion, the cervical ostium was closed, and no masses or pain were detected in the adnexa. The IUD string was unpalpable in the cervix.

The laboratory findings are within normal limits. Transabdominal ultrasonography (Figure 1) shows an anteflexed uterus with homogeneous density, double decidua sign, and gestational sac with a single living intrauterine fetus. The Crown-Rump Length (CRL) measures 1.04 cm (blue line), consistent with a gestational age of 7 weeks and 1 day. The IUD is found translocated within a pocket containing fluid (hypoechoic appearance), resembling a small abscess

Figure 1 Transabdominal ultrasonography showing uterus with homogeneous density, double decidua sign, and gestational sac with a single living intrauterine fetus.

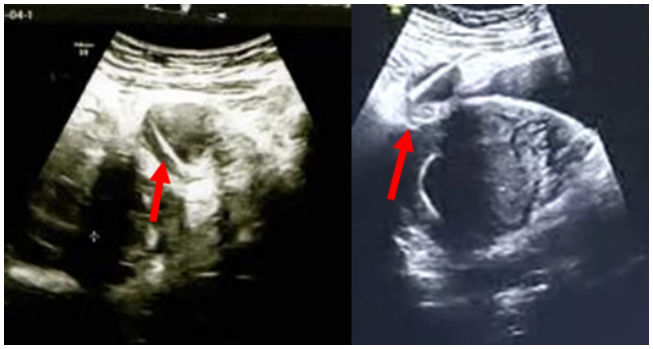

Figure 2 Transabdominal ultrasonography showing translocated intrauterine device (IUD) within a pocket containing fluid in the anterior of the uterus (Red line)

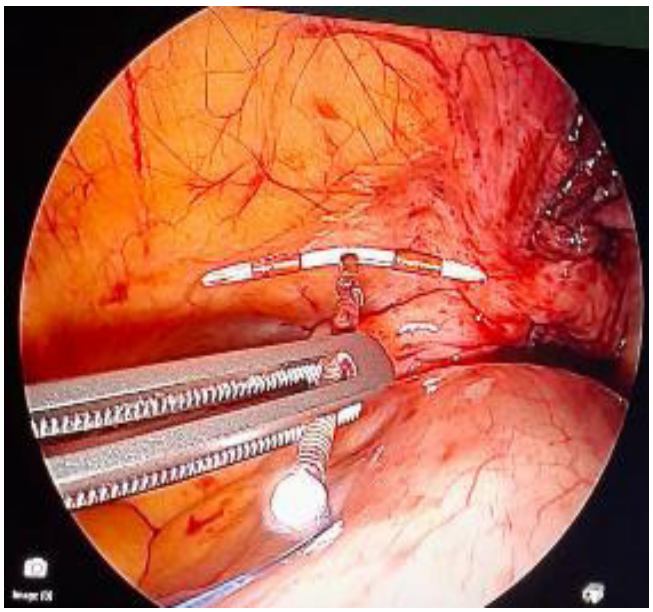

Figure 3. Intrauterine devices removal on laparoscopic view.

Figure 4 Transabdominal Ultrasonography one week after a Laparoscopic Intrauterine Device removal showing the fetus and the gestational sac within normal limits

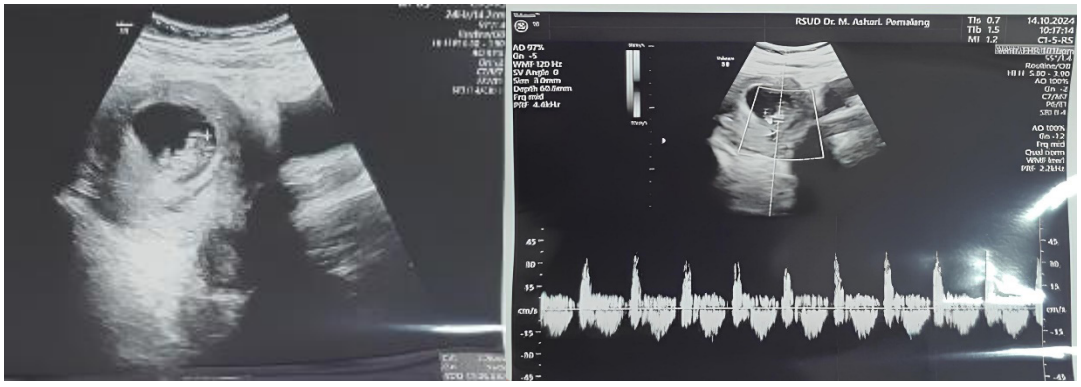

Figure 5 ransabdominal Ultrasonography one week after a Laparoscopic Intrauterine Device removal showing the pregnancy is progressing normally without any problems or . Tcomplications in the fetus or the gestational sac

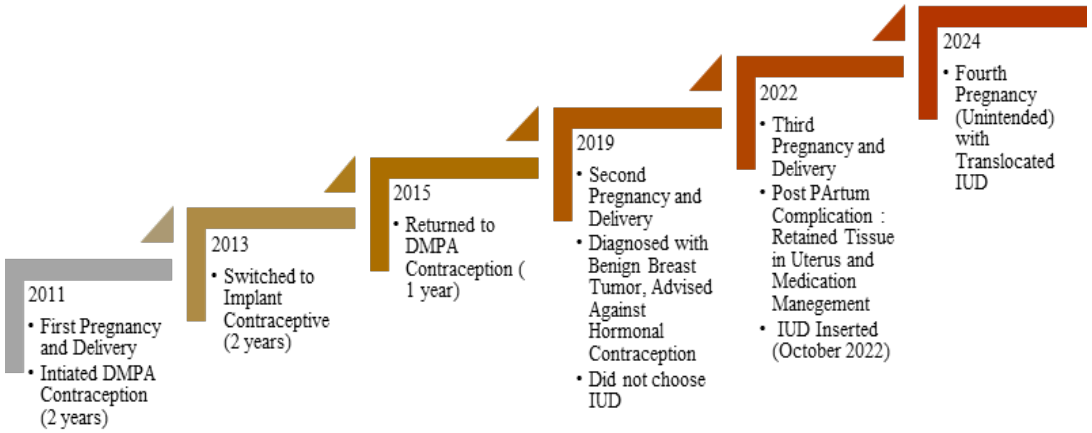

Figure 6 The history of the patient's obstetrical and contraceptive journey

with the part of the IUD in the anterior of the uterus (Red line).

The management plan for this patient includes immediate explorative laparoscopy, with prior consultation with anesthesiologist and surgeon. Informed consent was obtained, and the patient was informed that there is a risk of miscarriage during or after the laparoscopic procedure. Vaginal progesterone 200 mcg was administered before and after the laparoscopic procedure to prevent miscarriage. Throughout the exploratory laparoscopy, the uterus appeared to be within normal size, corresponding to 7 weeks of pregnancy. The IUDs were identified anterior to the uterus and then removed from the pelvic region.

After the exploratory laparoscopy, pregnancy evaluation was performed 1 day after the laparoscopic procedure using an abdominal ultrasound, which revealed a single live intrauterine fetus. No abdominal pain or vaginal bleeding. One week after the surgery, a follow-up examination was conducted, and the patient's overall condition was found to be satisfactory.

Discussion

This case documents a rare occurrence of an unintended pregnancy with the copper IUDs embedded within the upper part of the bladder. IUDs are a long-acting, safe, effective, economic, and reversible female contraceptive method commonly used in Indonesia. IUDs are widely used form of birth control, accounting for 16.5% use in undeveloped countries and 9.4% use in developed countries.[4] The common side effects and complications of IUDs placement include abnormal uterine bleeding, pain, IUD entrapment, perforation beyond the uterus due to IUD migration, and unintended pregnancy.[8] Among these complications, IUD perforation is especially severe, as it can lead to varying degrees of abdominal pain, pelvic infection, bowel obstruction, urinary tract infections, and even organ dysfunction. In many cases, it requires surgical intervention.[9]

Uterine perforation is rare, occurring in 1 out of 1000 insertions. It is a serious complication associated with IUD use and often presents without symptoms.[10,11] IUD migration can be categorized into three types: (1) Partial migration, where a part of the IUD becomes lodged in the myometrium; (2) Complete migration, where the entire IUD is embedded in the myometrium; and (3) External migration, where the IUD moves entirely out of the uterine cavity and into the pelvic or abdominal cavity.[9,12] Migration of the IUD outside the uterus is primarily affected by the bladder and pelvic and abdominal cavities.[8,13,14] The IUDs in this patient were described as ectopic to the pelvic cavity (type 3 of migration of the IUDs). Malposition of an IUD is one of its common complications, presenting with pelvic pain and bleeding or no symptoms.[10] Although malposition is associated with reduced contraceptive efficacy, this is mostly true for copper IUDs.[10] Most patients with migration of the IUDs show no obvious symptoms, and most cases are discovered either following an unintended pregnancy or during a routine examination.[15,16] The current patient was asymptomatic for perforation for 2 years prior to the unplanned pregnancy.

Potential causes of IUD migration include the medical staff's limited skill or experience in IUD insertion, incorrect device or model selection, inappropriate timing of insertion, and the patient's physical condition.[12] Risk factors contributing to IUD migration are: (I) improper uterine positioning and rough insertion technique; (II) a soft uterine wall that can be easily penetrated, such as in cases of breastfeeding or post-abortion; (III) direct injury during insertion and the chronic erosive effects of the IUD on the uterine wall; (IV) uterine scarring; and (V) postmenopausal uterine atrophy and cavity shrinkage, which

can lead to the IUD embedding into the muscular layer, making removal difficult. Therefore, IUD removal is recommended within 1 year after menopause. Additionally, IUD migration may be influenced by natural uterine contractions, bladder contractions, visceral motility, and peritoneal fluid flow.[13,15]

The risk of IUD perforation is higher when the device is inserted by inexperienced practitioners, within six months postpartum, in women with fewer pregnancies or women with a history of multiple miscarriages. During breastfeeding, endometrial atrophy caused by a hypoestrogenic state, along with accelerated uterine involution, also increases susceptibility to uterine perforation.[4,10] A study by Andersson and colleagues found that at least 80% of patients with IUD perforation were in the breastfeeding period at the time of insertion. Perforation usually occurs during insertion or within the first year.[17] Her copper IUDs were inserted only 2 months postpartum while breastfeeding. This may have been a risk factor for possible unrecognized perforation. that the causes of ectopic IUD in our patient may be as follows: (I) the incision ring moved along the uterine wall; (II) left the uterus; and (III) entered the pelvic cavity.

IUD migration can be identified using various diagnostic techniques such as radiography, ultrasound, and CT scans.[8,10] X-rays are useful for detecting metal-containing IUDs because x-rays cannot pass through the metal and thus can be used to determine the IUD's presence in the body. Meanwhile, the ultrasound can help to determine location, depth, and scope of IUD incarceration, and can also be used to detect fractures or deformations of IUDs. Due to its high safety, accuracy and reliability, ultrasound is often the preferred method for evaluating IUD migration.[8] However, compared with copper IUDs, the LNG IUS is more difficult to detect using ultrasound.[10] The LNG IUS contains barium sulfate, making it radio-opaque and detectable by X-ray. Therefore, a plain X-ray can be used as an additional imaging method when the LNG IUS is not visible on ultrasound.[10,18]

According to De Kroon et al., routine transvaginal ultrasound to check the IUDs position, whether immediately after insertion or after 6 weeks, is not recommended unless there is clinical suspicion of malposition.[19] It has been reported that IUDs take approximately 3 months to reach their stable position. Therefore, the IUDs initially malpositioned may gradually shift to the correct fundal position over time.[20] In asymptomatic women with uncomplicated IUD insertion, routine ultrasound offers no added benefit compared to clinical evaluation with a string check at 6 weeks. In this case, the patient used the Copper IUDs. She was asymptomatic and had no complications at the time of insertion. One year after the insertion of the copper IUD, the patient followed up at the Community Health Center and the string of her copper IUD could be seen on clinical gynecology examination. The patient did not undergo an ultrasound examination to check the position of the IUD. Han Xiaoyan and Yang Hua stated that from a clinical perspective, the position of the IUD should be regularly monitored. Specifically, in cases where the IUD seems to have "disappeared," it is crucial to perform a thorough examination of the patient instead of assuming that the IUD self-discharging.[8]

Once an intraabdominal IUD is diagnosed, it should be removed as soon as possible, whether the patient is symptomatic or not. The intraabdominal IUD should be removed to prevent serious complications such as adhesion formation, bowel obstruction, or infertility.[8,10,18] Corresponding examinations such as ultrasound and CT scans should be performed before surgery to identify the specific location of the migrated IUD. If the IUD is not deeply embedded within the uterine cavity, it can be removed

using a vaginal hook. If this method fails or the IUD is damaged, hysteroscopy may be used to examine and remove the IUD.[15] It is recommended that doctors with experience in hysteroscopic surgery perform the procedure to minimize the risk of secondary injuries. If the IUD has migrated outside the uterine cavity, laparoscopy may be used for removal of migrated IUDs.[12,16] Laparoscopy is the preferred surgical method, as it is safe and effective. Laparoscopy provides a clear visual field of the whole pelvic cavity and allows for angle adjustments to explore the abdominal cavity to remove the migrated IUD. This method is minimally invasive, promotes fast recovery, and is the preferred method for removing migrated IUDs.[8] If the IUD cannot be located, a thorough evaluation is necessary to locate it and confirm the possibility of IUD expulsion.[21] Based on the specific organ of the migrated IUD, general surgeons or urological surgeons can be consulted to assist in the procedure.[8] In this patient in our study, she has been confirmed to be in the first trimester of pregnancy and her copper IUD was translocated to the pelvic cavity specifically above the urinary bladder after diagnosis by ultrasound. The IUD was successfully removed under laparoscopy. The patient's pregnancy was followed one day and one week after the laparoscopy procedure, and the results showed a healthy pregnancy with no complications from the procedure.

Many strategies may be useful to prevent IUD migration. For example, before inserting an IUD, a gynecological examination should be performed to assess the uterus' location and size. If the uterus is significantly anteverted or retroverted, there is a higher risk of perforating the isthmus during insertion. The uterus should be repositioned to its normal position before the procedure, and the appropriate IUD should be selected based on the uterine cavity depth. In cases of an extremely anteverted uterus, it can be corrected by pulling the posterior lip outward using cervical forceps. The clinician can guide the IUD into the uterine cavity with their right hand while stabilizing the uterine position with their left hand. Particular caution is required when placing an IUD during lactation. Additionally, using an extremely large IUD may put pressure on the uterus, causing it to gradually be embedded in the muscular layer and potentially migrate outside the uterus. Therefore, selecting the right IUD model for each patient is crucial. Moreover, the IUD should be removed within 1 year after menopause.[8,21]

Conclusion

Although IUD migration is rare, it can have significant physical and emotional consequences for patients, particularly in patients who have confirmed pregnancies. Since IUDs are designed to prevent implantation of intrauterine pregnancies, it is crucial to thoroughly assess the possibility of an unplanned pregnancy. Therefore, it is important to enhance patient awareness regarding contraception and reproductive health. Specifically, women should be encouraged to have regular check-ups after IUD insertion to detect any IUD-related issues early. If an IUD migrates, it should be removed immediately.Bottom of Form

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