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*Case Report*

# Case Report: Term Birth with Unknown Intrauterine Device (IUD) in Situ

**Melisa Indah Mustikasari[1,2,*], Aditya Fendi Uji Pamungkas[1,3], Razita Aulia Azkia[1,2], Made Chindy Dwiyanti Marheni Putri[4] and I Made Ananta Wiguna[1,5]**

[1]Dr. Iskak Regional Public Hospital, Tulungagung 66223, Indonesia
[2]Medical Faculty, Airlangga University, Surabaya 60115, Indonesia
[3]Medical Faculty, Brawijaya University, Malang 65145, Indonesia
[4]Moorfields Eye Hospital, MSC Ophthalmology, University College London, London EC1V2PD, United Kingdom
[5]Medical Faculty, Kristen Kirda Wacana University, Jakarta 11470, Indonesia

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***Correspondence:**
Melisa Indah Mustikasari
Address: East Marina Emas 3 Number 36, Surabaya 60111, Indonesia.
Email: melisaindah5910@gmail.com

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**ABSTRACT**

Intrauterine contraceptive devices (IUDs) are highly efficient at preventing unintended pregnancies, without minimal failure rates, rare complications such as retention or displacement during pregnancy may lead to significant clinical challenge. This case discusses the diagnostic and management challenges of presumed IUD retention in the background of poor antenatal care. Multigravida woman, GIII/PII/A0, 24 years old with two previous caesarean deliveries, admitted in active labor at term. She received no antenatal care for her pregnancy because she could not afford it, and she thought that, because she had an IUD placed after her last cesarean section, she was infertile. On examination, uterine fundal height was 34 cm, amniotic membranes were intact, and the cervix was fully dilated as labor progressed. Spontaneous vaginal delivery was achieved and a 4050-gram (9 lb) neonate was delivered with Apgar scores of 4 at one minute and 5 at five minutes. In the postpartum period, she experienced complications including retained placenta requiring manual extraction and an estimated blood loss of 250 mL. After complete exploration and subsequent imaging, the IUD was not visualized, suggesting either early expulsion, unnoticed displacement or misplacement occurred at insertion. The patient's postpartum course was unremarkable with appropriate uterotonic therapy and close observation. This case highlights the need for full antenatal care to prevent and manage complications associated with IUDs including displacement or retention that may result in adverse maternal and fetal outcomes. Timely diagnosis and early interventions coupled with appropriate imaging and clinical follow-up services are essential to optimize outcomes and minimize associated risks.

**Keywords:** IUD; pregnancy; contraception; antenatal care; postnatal care

## 1. INTRODUCTION

IUDs (intrauterine devices) are described as T-shaped contraceptive devices placed in the uterine cavity; they contain copper or synthetic progestin that prevents conception. These include devices that release copper ions or the hormone progestin, each of which act to immobilize or kill sperm, change cervical mucus, and transform endometrial

lining to inhibit possible implantation after fertilization. IUDs are some of the most effective contraceptive methods, with failure rates similar to sterilization and associated with sustained effectiveness, reversibility, and high patient satisfaction. But it might also have complications, such as genital tract infections, abnormal uterine bleeding, ectopic pregnancy, uterine perforation, and device displacement.[1]

Pregnancy with an in-situ IUD is rare, with failure rates of 0.9–3.0 in 10 years for copper IUDs to 0–2.5 in 10 years for Gynefix, mainly caused by the displacement of the device, especially within the first year.[2,3] Pregnancies developing with IUDs in place are extremely uncommon, with an incidence rate of about 0·2% per year in women using these devices. Retained IUDs in pregnancy are extremely uncommon. One study assessing the incidence of it following hospital delivery found to be 12 per 100,000 deliveries (broken down as 1 in 8,307 deliveries).[4] Pregnancies with levonorgestrel intrauterine system (LNG-IUS) may be rare but pose a high (53%) risk of ectopic pregnancy.[3,5]

IUDs have been associated with negative pregnancy outcomes such as miscarriage, intrauterine growth restriction (IUGR), preterm birth, and various overlapping complications including preterm premature rupture of membranes (PPROM), fetal malpresentation, fetal anomaly, intrauterine fetal death (IUFD), placental problems such as placental abruption and placenta accreta.[4,6] Early identification from antenatal care (ANC) with serial ultrasounds is important to provide appropriate intervention. Postnatal care (PNC) is as important as it helps to control delivery-related morbidities and promotes maternal and neonatal wellbeing. Thus, well-established ANC and PNC protocols are essential to minimize risks related to complications of IUDs and maintain good maternal and fetal health.[1]

## 2. CASE REPORT

She was a 24-year-old woman (GIII/PII/A0) who came to our emergency unit in active labor, unknown gestational age, with a history of two previous cesarean sections and suspicion of in situ intrauterine device (IUD). She stated the uterus contracted vigorously for three hours before arrival. The patient described a sensation of impending amniotic rupture, light vaginal bleeding and regular fetal movements.

Antenatal care had not been provided in this pregnancy due to the patient's limited personal resources and her belief that she would not get pregnant due to recent IUD use after their previous delivery over a year ago. She initially noted her pregnancy around 5 months of gestation with abdominal distension and felt fetal movement. Her periods had been irregular since her most recent delivery.

Physical examination of the patient revealed stable vital signs. Fundal height was 34 cm, head presented at Hodge fourth. Every 10 minutes she experienced three uterine contractions lasting 20 second each. Fetal heart rate was 142 bpm. The cervical was dilated to 6 cm and the amniotic membrane was intact.

This patient was rehydrated and stabilized and preparations for cesarean section were made due to concern regarding her inadequate antenatal care, history of multiple cesarean sections, and a short inter-pregnancy interval that increased her risk for vaginal delivery. But 30 minutes into the prep, her amniotic membrane ruptures spontaneously. Uterine contractions increased to four times per 10 minutes for 40 seconds. The cervix was fully dilated (10 cm) and the fetal heart rate was 150 beats/min. As she had entered the second stage of labor, the decision to perform a vaginal delivery was made.

Six minutes later, the obstetrician delivered a female infant weighing 4050 g and measuring 51 cm in length. On presentation, Apgar scores were 4 and 5 at one and five minutes, respectively. The amniotic fluid was clear. In the third stage, the placenta was retained in spite of traction and 20 IU oxytocin, causing 200 mL blood loss. Manual removal was finally undertaken and the placenta was delivered. Total blood loss was 250 mL, with suboptimal uterine contraction following delivery. Postpartum treatment consisting of oxytocin infusion (20 IU), methylergonovine injection (0.2 mg), rectal misoprostol, and close monitoring of vital signs, uterine fundal height, lochia, and patient complaints.

In addition, no signs of the suspected IUD were found after a complete manual exploration during delivery. The patient was adamant that after her previous delivery an IUD had been placed. Postpartum, no IUD was visualized on abdominal X-ray imaging. This report highlights the troubles related to poor antenatal care and the very real problems caused by presumed retained IUD pregnancy. Additional investigations can help assess the remaining status of the missing IUD.


**Figure 1**. No intrauterine device fragment was found from abdominal X-ray

## 3. DISCUSSION

Intrauterine devices (IUDs) are some of the most effective reversible contraceptive options available currently in terms of efficacy, with failure rates similar to those seen with sterilization procedures. They are preferred due to their efficacy, convenience, and patient satisfaction for long-acting contraception. Pregnancy with an IUD in is rare, although it bears a higher risk of such things as infection and the developmental issue premature birth. Retention of intrauterine devices (IUDs) during pregnancy occurs in about 12 per 100,000 hospital birth deliveries, risk factors for this complication are hispanic ethnicity, obesity, grandmultiparity, alcoholism and previous surgical uterine scarring.[1,2]

The retained intrauterine device (IUD) during pregnancy greatly increases risk for adverse obstetric events such as septic abortion, spontaneous pregnancy loss, preterm labor, and chorioamnionitis. Removing the IUD, particularly copper-containing devices, decreases these risks dramatically. Such pregnancies have an 80% rate of spontaneous abortion in unremoved LNG-IUS (levonorgestrel-releasing intrauterine systems). Retained IUDs were associated with more adverse outcomes (63.3%) than were removed IUDs (36.8%).[3] Abortion rate and first trimester bleeding were more than twice as high in women with retained IUDs (26.7 vs 15.8%), and there was no difference in premature birth, oligohydramnios, and fetal growth restriction. The patient achieved vaginal delivery with minimal complications despite the increased risk of prior cesarean section and a short interpregnancy period. The only noteworthy complication was post-partum hemorrhage (250 mL) caused by a retained placenta, presumably related to some uterine scarring or retained IUD.[2,4]

One IUD inserted during caesarean section was untraceable during labor, despite manual exploration and imaging. Rejection of the device maybe occurred shortly after procedure or during pregnancy, but poor antenatal care did not identify it until late in pregnancy. This case highlights the diagnostic dilemma posed by presumed retained IUDs during pregnancy, which is frequently ascribed to unnoticed expulsion, inadequate insertion or device migration in the setting of suboptimal antenatal care (ANC).[7] The very potential of expulsion remains unnoticed in many cases as it typically takes place in the early postpartum feature, dued to physiological symptoms like uterine involution or lochia, whereas 80% of such expulsions take place within the first trimester for the most part being underclinical.[8,9] Serial imaging has proven useful for identifying a displaced IUD in the lower uterine segment before delivery and appropriate intervention can be done.[10] If sonographic results are ambiguous, more advanced imaging modalities such as X-ray are suggested to localize displaced IUDs with precision.[11] Unfortunately, the absence of an ANC in this case hindered early diagnosis of IUD displacement or expulsion, creating a challenge to the intrapartum and

postpartum management. These observations emphasize the importance of careful ANC, including ultrasound screening, in preventing maternal and foetal hazards due to retained or displaced IUDs.

Although existing clinical guidelines do provide general recommendations for the management of IUD complications, specific protocols for screening and treatment of retained IUDs in pregnancy are still insufficient. No generalizable imaging protocols or follow-up schedules exist for high-risk populations, such as women with previous cesarean delivery or short interpregnancy intervals resulting in diagnostic delays and increased maternal and fetal risks.[8,12]

This case highlights the diagnostic obstacles created by suboptimal antenatal care. Routine serial pregnancy ultrasounds make it possible to detect early signs of IUD displacement or expulsion, enabling prompt intervention. Imaging modalities including ultrasound or X-ray is to be relied on in a systematic manner where IUD retention is suspected. Further studies should be conducted to formulate the evidence-based guidelines for managing these conditions so that diagnostic accuracy can be improved and pregnancy outcome can be optimized.[4,8]

# 4. CONCLUSION

This case illustrates the importance of complete antenatal and postnatal services in early identification and management of complications with use of IUDs, including expulsion, displacement, or retention, which can lead to adverse pregnancy outcomes, including miscarriage or preterm delivery. Routine follow up and timely imaging are needed for timely intervention, as lack of follow up can lead to adverse events like postpartum hemorrhage due to previous uterine incision or potential retained IUD.

## Ethical Approval

Not required.

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## Competing Interests

All the authors declare that there are no conflicts of interest.

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## Underlying Data

Not applicable.

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