



# Laparoscopic removal of a translocated intrauterine contraceptive device embedded in the fossa ovarica: A case report

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## ABSTRACT

Intrauterine contraceptive devices (IUD) are the most widely used form of reversible contraception worldwide, especially in development country like Indonesia. There are some complications of this method, uterine perforation being the most important complication. A 30 years old woman, presented to the gynaecologic clinic of Harapan Kita Women and Children Hospital, Jakarta, Indonesia; with ultrasound (US) diagnosis of Blighted ovum, and the IUD was not found in the uterine cavity. Physical examination showed normal vital signs with no abnormality of a general state. Gynaecology examination failed to detect the tail of the IUD in the cervix. A second IUD was inserted into the uterus as a marker after uterine evacuation. Plain abdominal X-ray revealed that there were 2 pieces of IUD lying on same region of the minor pelvis with different projections. Diagnostic hysteroscopy and laparoscopy were then carried out. From hysteroscopy, it was found that the second IUD was placed *in situ* without another IUD inside it. Continuing with laparoscopy, it was found that the string of the translocated IUD was in the right fossa ovarica surrounded with adhesions and adhesiolysis was performed. The IUD was found in the retroperitoneal space embedded in the ovarica; and it was removed from abdominal cavity. This is a case report of a translocated IUD which perforated the uterus and adhered to the fossa ovarica; and was successfully removed laparoscopically. Uterine perforation and translocated IUD (embedded in the fossa ovarica) are rare complications of IUDs. Laparoscopic removal as an option for translocated IUD, especially with suspected uterine perforation, is recommended.

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## INTRODUCTION

Intrauterine devices (IUD) are the most widely used form of reversible contraception worldwide, especially in developing countries such as Indonesia. IUD provides a safe, highly effective form of long-acting reversible contraception that is cheap. Other benefits of the IUD are that their use is not associated with systemic effects; is not related with cohabitation; and when inserted once, no

further contraceptive efforts or complications are required for the couple. On the other hand, there are also some complications of this method, uterine perforation being the most important. Uterine perforation is a rare but serious complication of IUDs. The incidence of uterine perforation is estimated between 0.2 and 3.6 per 1000 insertions (Gill et al., 2012).

Translocated IUDs can be found in a variety of locations including the omentum (26.7%), pouch of Douglas (21.5%), colonic lumen secondary to perforation (10.4%), myometrium (7.4%), broad ligament (6.7%), free

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**Figure 1.** Ultrasonographic film showing the uterus after first IUD insertion.

within the abdomen (5.2%), small bowel serosa (4.4%), colonic serosa (3.7%) and mesentery (3%). Rare locations such as the bladder, appendix, abdominal wall, fallopian tube, ovary, retroperitoneum and small bowel with perforation were also reported (Kimberly et al., 2014). Various factors are responsible for uterine perforation by IUDs. Risk factors include the time of insertion (after the last delivery, abortion, lactation, and early postpartum period), undiagnosed pregnant uterus, congenital uterine and cervical anomalies, acutely anteflexed or retroflexed uterus and former uterine operations. Migration of IUD into neighbouring organs or abdominal cavity is a rare complication (Bozkurt et al., 2011).

This is a case report of a traslocated IUD which poferated the uterus and adhered to the fossa ovarica; and was successfully removed laparoscopically using a bipolar. Uterine perforation was suspected because of the time of insertion (during lactation).

## CASE REPORT

A 30 years old woman, P1 presented to the gynaecologic clinic of Harapan Kita Women and Children Hospital, Jakarta, Indonesia. She was planned for the control of her IUD (Silverline IUD) on February 2, 2016 due to complain amenorrhea. Her period was late by one week and she was diagnosed with blighted ovum. But on ultrasound examination by a trained sonographer, the IUD was not found intracavity (Figure 1). An endometrial curettage was done and during the procedure, the IUD

was not found. A second IUD was then inserted into the uterine cavity as a guide to locate the missing IUD (Figure 2).

Phycisal examination showed normal vital signs with no abnormality of a general state. Gynaecology examination detected the tail of the second IUD in the cervix. A Plain abdominal X-ray (Figure 3) revealed 2 pieces of IUD lying on same region of the minor pelvic with different projection.

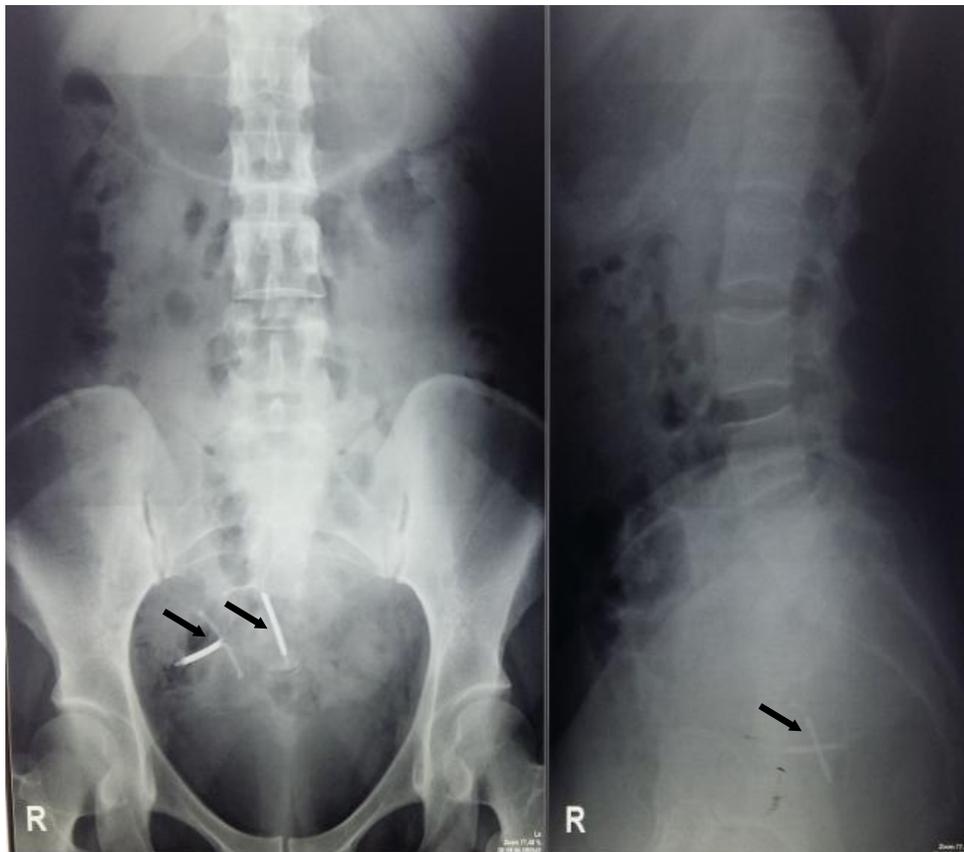
Diagnostic hysteroscopy and laparoscopy was performed to locate the translocated IUD. From hysteroscopy, the second IUD was found *in situ* without another IUD inside it. Continuing with laparoscopy, the string of the first IUD was found in the right fossa ovarica with adhesions. Adhesiolysis was performed and the translocated IUD was found to be embedded in the retroperitoneal space of the ovarian fossa. It was then removed (Figure 4). No complication was observed during and after the procedure.

## DISCUSSION

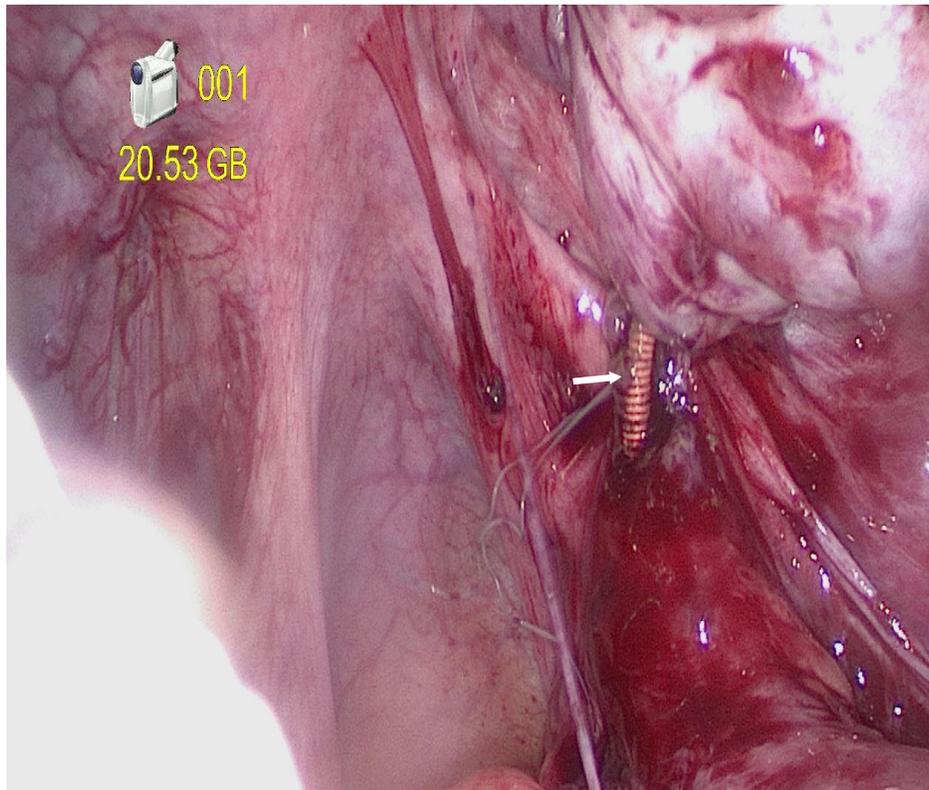
IUDs are the most common and available contraception method worldwide. However, there are many complications associated with IUD insertion which include vaginal bleeding, lower abdominal pain, pelvic infections (pelvic inflammatory disease) and perforation of the uterus. Uterine perforation may be complete or partial, which was orginally thought to occur at the time of insertion but it has now been realized that migration and erosion can occur at any time.



**Figure 2.** Ultrasonographic film showing the uterus after second IUD insertion (white arrow).



**Figure 3.** Radiograph of plain abdominal X-ray showing two pieces of IUDs (black arrows).



**Figure 4.** Translocated IUD in the retroperitoneal space of ovarian fossa (white arrow).

All IUDs are radiopaque, so that the plane abdominal radiography can localize the misplaced IUDs. However, abdominal radiography may be a suboptimal first imaging choice because it is often unable to differentiate extrauterine from intrauterine IUD locations as in this case report. Marking the uterine cavity with radiopaque material or a uterine sound can be helpful (Kimberly et al., 2014). Transvaginal sonography provides the best view of locating the IUD, but it restricts the space for its simultaneous removal (Bozkurt et al., 2011). In this case report, the second IUD was inserted as a guide to locate the missing IUD.

Compared with copper IUDs (Silverline IUD), LNG-IUDs were significantly more likely to be missed at ultrasonography, regardless of their position in the pelvis. This is consistent with recent literature that has shown levonorgestrel-intrauterine devices (LNG-IUDs) to be more challenging to visualize at ultrasonography because of the use of barium sulfate, which aids radiographic but not sonographic visualization. Markovitch et al. (2002) found that 3-dimensional ultrasonography improved both visualization and position evaluation of malpositioned IUDs. Thus, for diagnostic evaluation of a missing IUD, pelvic ultrasonography including 3-dimensional imaging is recommended. If this fails to locate the missing IUD;

obtaining a supine flat plate radiograph of the abdomen to the level of the diaphragm should be performed because an abdominal radiograph that is limited to the lower pelvis may potentially miss IUDs that have migrated to the upper abdomen. If this method fails, magnetic resonance imaging or CT scan can then be used (Kimberly et al., 2014).

After diagnosing the location of the translocated IUDs, removal procedure should be carried out to prevent complications such as abdominal abscess and fistula formation. Previous studies have reported that up to 15% of perforated IUDs cause injury to surrounding organs, especially the bowel (Kimberly et al., 2014). Most patient with cooper IUD perforation do not show any symptom, until after three years when peritonitis must have developed (Kimberly et al., 2014). Taras and Kaufman (2010) recommended the removal of IUD after diagnosis of IUD perforation is confirmed.

Laparotomy and laparoscopic management have been used for IUD removal in the cases with IUD migration. Laparotomy has more complications such as longer period of hospitalization, more scar formation and has limited view during operation. Laparoscopy has now become the method of choice for the treatment. Laparoscopy gives panoramic picture to localized missing

IUD (Bozkurt et al., 2011). In this case report hysteroscopy was performed due to the limitations of making proper diagnosis with sonography and radiography abdomen.

LNG-IUD has been reported to be more difficult to localize and remove than copper IUD because LNG-IUD adhere to tissues more seriously than copper IUD (Markovitch et al., 2002). One of the operation techniques of removing IUD laparoscopically, is by positioning the patient on an operating table. Supine position is more preferably than trendelenburg because it can make the IUD to migrate further. Fluoroscopy can be done intra operatively to make real-time imaging. If fluoroscopy is not available, intra operative abdominal ultrasonography or plain film radiography can help identify IUD position (Kimberly et al., 2014).

## Conclusion

IUD is a safe, effective long-acting and reversible contraception method. However misplacement and perforation are serious complications associated with the procedure. The popularity of this method has increased in recent times and this depicts the need to track serious complications like perforation. Urgent removal after diagnosis is recommended to prevent serious complications. Laparoscopy is the best management for the removal of missing IUD because of its safety and effectiveness.

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