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A prospective study of hysteroscopic evaluation of missing thread intrauterine contraceptive device at a tertiary care center

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Abstract

Introduction: IUCD is cost effective, safe, reversible and long-term method of contraception. Missing thread IUCD i.e., IUCD thread that are not visible at the external cervical OS, is a commonly encountered problem during IUCD removal. Our study aims to evaluate the patient characteristics and clinical outcomes of hysteroscopic-guided IUD removal performed in a tertiary care hospital.

Methodology: A Prospective study was conducted in department of Obstetrics and Gynaecology, SMS Medical College, Jaipur from March 2020 to April 2021. 40 cases with missing thread IUCD who were willing to participate were included in the study. Imaging is done to confirm presence of IUCD. Hysteroscopic removal done under general anaesthesia.

Result: In our study 75% patients had previous caesarean section and 25% had previous vaginal delivery. In our study, most common reason for removal was intermittent spotting (in 27.5% cases) followed by lower abdominal pain, wanted to conceive, menorrhagia and polymenorrhea. Common causes of missing thread IUCD on hysteroscopy finding included coiled up thread (27.5%) followed by malpositioned and embedded in endometrium.

Conclusion: Hysteroscopy as a diagnostic and operative technique has enabled safe retrieval of missing thread IUCDs. It also offers the advantage of short hospital stay, minimal blood loss, minimal immediate and late complications. Awareness regarding this procedure will increase its use as common myth about IUCD is that it cannot be removed once inserted.

Keywords: Intrauterine contraceptive device, Hysteroscopy, Scarred Uterus, Postpartal IUCD

Introduction

IUCD is the second most popular contraceptive method after female sterilization. IUCD has emerged as most cost-effective postpartum contraceptive as it is highly

effective, one-time application, safe, inexpensive, reversible, acceptable, simpler to administer, independent of coitus, no effect on breast feeding, require no or little medical supervision and can serve as both limiting and long-term method of contraception [1].

Despite its durability and effectiveness, IUCD use is not without complications, in some cases requiring extraction [2]. When the adverse events become intolerable, women seek consultation for removal [3]. The method of removal of the device depends on the visibility of the thread during speculum examination. When thread is visible, IUCD removal is typically an uncomplicated procedure, requiring simply grasping the IUCD strings and pulling gently [4]. One of the most important concerns is 'missing IUCD strings' which needs to be addressed.

Missing thread IUCD i.e., IUCD thread that are not visible at the external cervical OS, is a commonly encountered complication during IUCD removal. In up to 5% to 18% of patients, the strings are not visualized on a speculum examination. In instances where no thread is visible, possibilities include spontaneous expulsion of the IUCD, coiled up thread, torn off string spontaneously or while pulling in attempts for removal, misplacement within the cavity, intramural penetration, or extrauterine location.

A sonographic examination is requested to ensure that the device is in place. Procedures available for retrieval of a missing thread IUCD include extraction with a metal hook, artery forceps, thread retriever or dilatation and curettage. There is also increased risk of perforation during removal in cases of IUCD with scarred uterus (eg. in previous caesarean) as these are blind procedures. Success is not always ensured in these methods which leads to a negative impact on general public that this device cannot be removed once inserted.

Hysteroscopy as a diagnostic and operative technique has enabled safe retrieval of missing thread IUCDs. It is a safe and well-tolerated procedure where diagnosis and treatment are offered in same sitting. Unnecessary major operation and complications can be avoided through this minimally invasive procedure. It also offers the advantage of short hospital day, minimal blood loss, and minimal immediate and late complications. It is important for clinicians to be competent with the procedure. This study aims to evaluate the patient characteristics and clinical outcomes of hysteroscopic-guided IUD removal performed in a tertiary care hospital from March 2020 to April 2021.

Material & Methods

A Prospective study was conducted in department of Obstetrics and Gynaecology, SMS Medical College, Jaipur from March 2020 to April 2021. 40 cases with missing thread IUCD who were willing to participate were included in the study.

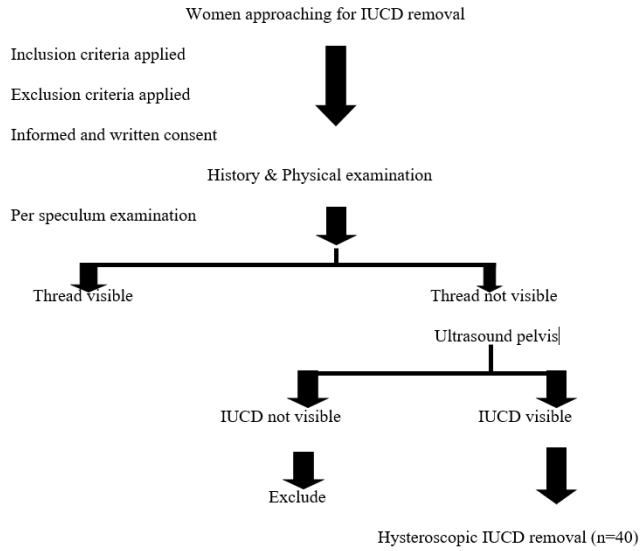
Exclusion criteria were patients in whom IUCD not visible on transabdominal USG pelvis, Subjects with obvious cervical pathology like Carcinoma cervix, fibroid, polyp and Subjects unfit for general anaesthesia.

Patients were subjected to thorough history taking and clinical examination. Detailed history regarding reason of removal, duration of IUCD use, number of previous failed attempts of removal and mode of insertion taken. Pelvic examination, including speculum examination, is performed to visualize the thread.

In cases where the thread is not visible, a transabdominal ultrasound is done to confirm the presence of the IUCD in the uterus. Displacement and perforation are also ruled out. After confirming the position of the IUCD by trans

abdominal ultrasound, hysteroscopic-guided removal was offered to patient. Routine investigations sent and preanesthetic checkup is done. Tablet misoprostol 400 microgram sublingually given two hours before the procedure for easy dilatation of cervix.

After taking informed and written consent, Hysteroscopy is performed with use of stepwise approach under general anaesthesia. Under all asepsis, posterior wall of vagina retracted with sims speculum and anterior lip of cervix is held with vulsellum. Procedure done using 4.9 mm size hysteroscope and infusion of small volumes of isotonic distension media. IUCD and its thread is localised using hysteroscope. Then hysteroscopic grasper is inserted via operative hysteroscope and IUCD is removed by grasping thread if present or by stem if absent. The whole procedure is completed within 15 to 30 mins. The patient's vitals, blood loss was monitored postoperatively. Counselling regarding use of contraception in future was done. All patients were followed for one month for any adverse effect of the procedure. Data compilation was done and statistical analysis applied.



* Type of IUCD
* Location & position of IUCD
* Position of thread
* Other findings

Result

The age of women in our study group varied from 20 to 40 years. Mean age was 29 years in our study.

Table 1: Distribution of the Participants in Terms of Age (n = 40)

Age	Frequency	Percentage
20-25 Years	7	17.50%
26-30 Years	18	45.00%
31-35 Years	8	20.00%
36-40 Years	7	17.50%

In our study, 40% patients had previous one caesarean followed by 32.5% had previous two caesarean, 25% had vaginal delivery and 2.5% had previous three caesarean.

Table 2: Distribution of the Participants in Terms of Obstetric History (n = 40)

Obstetric History	Frequency	Percentage
VD	10	25.0%
Previous 1 CS	16	40.0%
Previous 2 CS	13	32.5%
Previous 3 CS	1	2.5%

In our observation, most common reason for removal was intermittent spotting (in 27.5% cases) followed by lower abdominal pain, wanted to conceive, menorrhagia and polymenorrhea (in 15% cases).

Table 3: Distribution of the Participants in Terms of Reason for Removal (n = 40)

Reason For Removal	Frequency	Percentage
Intermittent Spotting	11	27.50%
LAP	6	15.00%
Menorrhagia and Polymenorrhea	6	15.00%
Wants To Conceive	6	15.00%
Expiry Of Use	3	7.50%
Wants Sterilization	3	7.50%
White Discharge	3	7.50%
Continuous BPV	1	2.50%
No Complaint	1	2.50%

The most common hysteroscopic finding was coiled up thread (27.5%) followed by malpositioned, missing thread, embedded in endometrium, fragmented, malpositioned with coiled-up thread, malpositioned with missing thread and retracted thread

Table 4: Distribution of the Participants in Terms of Hysteroscopic Finding (n = 40)

Hysteroscopic Finding	Frequency	Percentage
Coiled Up Thread	11	27.50%
Malpositioned	10	25.00%
Missing Thread	10	25.00%
Embedded In Endometrium	3	7.50%
Fragmented	3	7.50%
Malpositioned With Coiled-Up Thread	1	2.50%
Malpositioned With Missing Thread	1	2.50%
Retracted Thread	1	2.50%

Intraoperative and Postoperative Outcome

In our study all patients had IUCD in uterine cavity and 100 % success achieved in removal of the same. It was safe, painless, atraumatic method. No or minimal blood loss noted.

All patients were discharged after 5-6 hour of observation. 5 out of 40 patients' complaints of mild pain post operatively. All patients were well satisfied with the procedure.

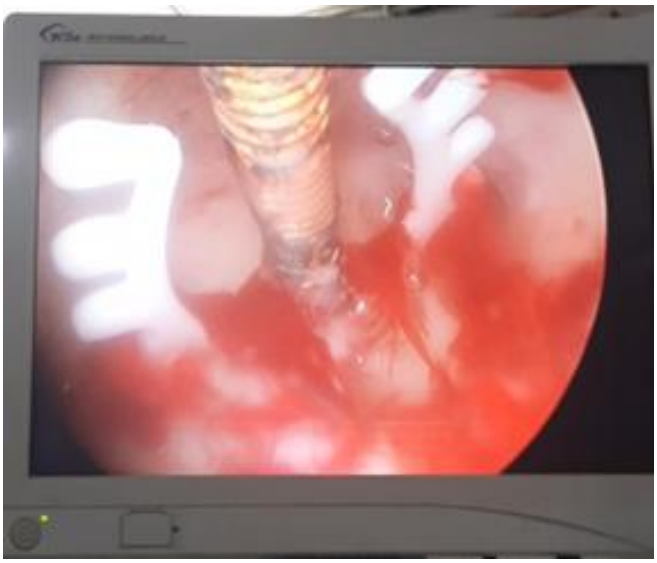


Figure 1: Misplaced IUCD (CuT 375)

Figure 2: Hysteroscopic View of IUCD With Coiled Up Thread

Discussion

Intrauterine device is a widely used reversible method of contraception, preferred due to long duration of birth control effect and ease of use. Missing IUCD strings is common encountered problem and its difficult removal has negative impact on use of IUCD. In present study, most of the women (45.0%) belonged to 26-30 years age

group with mean age was 29.9 as also seen in study by Kumari N et al and Asto MR et al [5][6].

When analysing women with missed IUCD strings, it was found that more women with intra-cesarean IUCD insertion had missed threads. In this study 75% patients had previous caesarean section and 25% had previous vaginal delivery. Similar results seen in study by Gupta M et al, Verma U et al, Lawal SO et al and Elahi N et al [7],[8][9][10].

Most of our patients consulted for IUCD removal due to symptoms. In our study, most common reason for removal was intermittent spotting (in 27.5% cases) followed by lower abdominal pain, wanted to conceive, menorrhagia and polymenorrhea. Intermittent spotting was also most common reason for removal in study by Asto MR et al [6]. AUB with or without pain was most common reason for removal in study by Verma U et al [8]. In contrast, most common reason for removal were replacement of IUCD and pelvic pain in study by Kottman C et al, nonpalpable thread in study by Millen A et al and Kumari N et al [11][12][6]. There was no significant difference in vaginal and caesarean delivery in terms of distribution of reason for removal (p-value < 1).

In present study all cases had copper containing IUCD in contrast to old studies in which Lippes loops were also seen. This is because of popularity and free availability of copper containing IUCDs in government health centers of India. In copper containing IUCDs, more cases of missing thread observed in CuT380A group than CuT375. This difference may be attributed to long thread of 375 device than 380A.

In our study most of patients had previous one (40%) or two (30%) attempts of removal. This finding may be because many patients were referred from peripheries where they tried for removal IUCD but failed.

The differential diagnosis of missing IUD strings includes perforation of the uterus by the device, unnoticed expulsion, enlargement of the uterus by pregnancy, and retraction of the strings while the device remains in utero. In the present study, the device was located by means of USG pelvis or x-ray pelvis. USG is important in assessing correct position and complications of IUCD including a low position, associated infection, myometrial migration, uterine perforation, intrauterine or extra-uterine pregnancy associated, and retention and fragmentation of the IUCD [13] All IUCDs were localised intrauterine in present study, similar results seen in study by Verma U et al while in study by Kumari N et al and Gupta M et al, 13.2% and 9% of patient had extra uterine IUCD respectively [8][5][7]. Extra-uterine perforation/ migration of IUCD is rare.

Once the IUCD is confirmed to be within the uterine cavity, patients were counselled for hysteroscopic removal. Interesting fact was, thread that was not visible on per speculum examination, same was visible in most cases (55%) on hysteroscopy. The most common cause of missing thread IUCD on hysteroscopy finding was coiled up thread (27.5%) followed by malpositioned, missing thread and embedded in endometrium. Commonest cause was found to be retracted strings (98%) into cervix or uterine cavity and broken, detached or severed strings (23.18%) in study by Marchi NM et al and Verma U et al respectively [17][8]. Unnecessary major operation and complications can be avoided through this minimally invasive procedure. It also offers the advantage of short hospital stay, minimal blood loss, and minimal immediate and late complications. The diagnostic hysteroscope has a smaller diameter, offering less cervical manipulation compared to operative hysteroscopy, and is therefore the preferred method

during hysteroscopic-guided removal. In present study, all patients had stable postoperative course, and most were discharged on same day after 5-6 hours of observation. No patients were readmitted. Similar finding seen in study by Asto MR et al [6].

Conclusion

Responsibility of care provider does not end at insertion of IUCD. Follow up is equally important. Each case of missing IUCD should be managed carefully. Removal of IUCD using blind procedures increases risk of perforation, specially with scarred uterus (eg. in previous caesarean). Success is also not always ensured in these methods which leads to a negative impact on general public that this device cannot be removed once inserted. Hysteroscopy as a diagnostic and operative technique has enabled safe retrieval of missing thread IUCDs.

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