

## OFFICE HYSTEROSCOPY FOR MISSING THREADS INTRAUTERINE CONTRACEPTIVE DEVICE REMOVAL: A PROSPECTIVE STUDY

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### ABSTRACT

**Objectives:** The objective of the study was to estimate the success rate of office hysteroscopy for removal of intrauterine contraceptive device (IUCD) with missing threads.

**Methods:** This prospective study included 11 women who underwent office hysteroscopy for IUCD removal. The procedure was performed using a hysteroscope 2.9 mm diameter and 4.3 mm inner operative sheath and 5 mm outer sheath was used without anesthesia. 5 fr flexible grasper used. Patient demographics, procedure time, success rate, and complications were recorded.

**Results:** The mean procedure time was 2.9 min. The overall success rate was 90%. 63% reported mild pain during the procedure which did not require analgesic. No major complications were noted. 63% of patients who had a history of unsuccessful removal by a conventional method, they all reported less pain during office hysteroscopy.

**Conclusion:** Office hysteroscopy is a safe, effective, and feasible method for IUCD removal. It offers several advantages over traditional blind removal methods, including reduced procedure time, improved success rate, and enhanced patient comfort.

**Keywords:** Hysteroscopy, Intrauterine contraceptive device, Missing threads, Post-placental intrauterine contraceptive device.

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### INTRODUCTION

Contraceptive use has been steadily increasing worldwide, with a significant rise in the adoption of long-acting reversible contraceptives such as intrauterine devices (IUDs) and contraceptive implants. Globally, 14.3% of women of reproductive age use IUC, but the percentage of women using IUC is in some countries <2%, whereas in other countries, it is >40% [1]. Intrauterine contraceptive devices (IUCDs) are a popular method of long-acting reversible contraception. Long-acting, reversible, low-cost contraceptive methods, such as the IUD, can be very effective in facilitating birth spacing, particularly in low- and middle-income countries where women do not visit health facilities regularly. A major advantage of an IUD is that it can be inserted immediately after the placenta is delivered after normal or operative vaginal or abdominal delivery, or within 48 h of delivery commonly called PPIUD postpartum intrauterine device insertion, providing immediate postpartum protection from unintended pregnancies. India has achieved a total fertility rate (TFR) of 2.0 as per National Family Health Survey-5 (2019–2021) [2]. This is aligned with the National Population Policy 2000 and the National Health Policy 2017 (TFR of 2.1) [3].

IUDs and contraceptive implants offer numerous benefits, including:

- High efficacy: IUDs and implants are more than 99% effective in preventing pregnancy
- Convenience: Both methods are long-acting, requiring minimal maintenance and user intervention
- Reversibility: IUDs and implants can be removed, allowing for quick return to fertility
- Reduced risk of user error: Unlike pills, patches, or rings, IUDs, and implants eliminate the risk of user error.

Despite these benefits, IUDs and implants require removal when women desire to conceive or experience adverse effects. Removal methods have evolved over time, with varying degrees of success and complications. Historically, removal methods included:

- Blind removal: Using forceps or other instruments to grasp and remove the device without visualization
- Ultrasound-guided removal: Using ultrasound to visualize the device and guide removal
- Hysteroscopic removal: Using a hysteroscope to visualize and remove the device
- Surgical removal: Performing a surgical procedure to remove the device.

IUCD removal can be challenging, especially if the device is malpositioned or embedded in the uterine wall. Traditional blind removal methods, such as using grasping forceps or a IUCD remover, can be associated with complications, including uterine perforation, bleeding, and pain. Recent advances in removal techniques and technologies have improved outcomes and reduced complications. However, there remains a need for standardized removal protocols and further research on optimizing removal methods. This study aims to investigate the outcomes, complications, and factors influencing IUD and contraceptive implant removal, providing valuable insights for healthcare providers and women seeking removal services. Office hysteroscopy has emerged as a safe and effective alternative to traditional blind removal methods. It allows for direct visualization of the uterine cavity, enabling the healthcare provider to accurately locate and remove the IUCD.

### METHODS

This prospective study included 11 women who underwent office hysteroscopy for IUCD removal in the gynecology outpatient department.

Institutional ethical clearance was obtained prior to conducting the study.

### Inclusion criteria

Cases fulfilling all following criteria

1. Patients requiring IUCD removal
2. IUCD threads not visible at external Os per speculum examination.
3. Absence of local infection
4. Ultrasonography showing IUCD in uterus
5. Patient giving consent for Office hysteroscopy.

### Exclusion criteria

1. Local infection
2. Anxious/apprehensive patient
3. Not consenting for office hysteroscopy.

### Instruments

A bettochi hysteroscope with a 30° forward oblique lens 2.9 mm diameter and 4.3 mm inner operative sheath and 5 mm outer sheath was used without anesthesia. 5 fr flexible grasper used. Saline was used as distending media. Hystero pump was used to pump saline through hysteroscope. Pressure for distension was kept at 50 mmHg and as per need and patient comfort was increased to a maximum of 100 mmHg.

### Procedure

After explaining the procedure, written consent was taken. Detailed history with sociodemographic details noted. In lithotomy position, betadine swab used for cleaning cervix and vagina. Vaginoscopy was done and entered the cervical os without holding the cervix with any instrument.

Patient demographics, procedure time, success rate, and complications were recorded. Procedure findings noted in standard proforma mentioning

- Type of IUCD
- Position of IUCD malposition/normal place
- Any embedding or partial perforation in myometrium
- Threads/strings present or absent
- Any additional pathology in uterus
- Duration of procedure (entry to exit from introitus)
- Success or failure of IUCD removal
- Patient pain score.

The success rate was defined as the successful removal of the IUCD.

### OBSERVATION AND RESULTS

A total of 11 patients were included in the study. All were in the reproductive age group with a mean age of 25 years (Mean±SD=20.4±10.8).

As show in Fig 1, timing of IUCD insertion was postpartum during caesarean section in 7 (64%) cases, postplacental in 3 (27%) cases and interval IUCD insertion in 1 (9%) case. Out of 11 cases, IUCD was successfully removed in 10 cases. The overall success rate was 90.9% (10/11). All IUCDs were copper-containing IUCD.

The most common indication for IUCD removal was ( Fig. 2) lower abdominal pain (54%) followed by a desire for pregnancy (27%) and bleeding (18%). 7 (63.6%) patients had a history of unsuccessful removal by conventional method and were referred by other doctors.

The mean procedure time was 2 min 50 s (range from 1 min 30 s to 6 min). Pain during the procedure was recorded using a Visual Analog Scale.

40 had misaligned position of IUCD in the uterus and 30% had Embedded/Partially perforated IUCD in the uterus.

27% experienced no pain. 63% experienced mild pain which was well

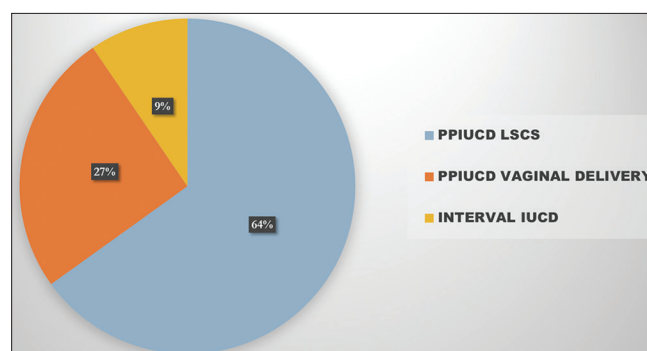


Fig. 1: Timing of intrauterine contraceptive device insertion

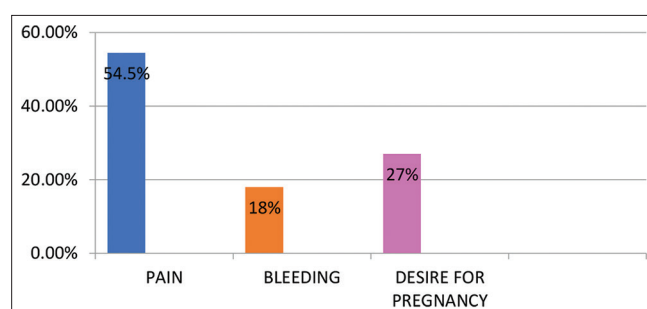


Fig. 2: Reasons for intrauterine contraceptive device removal

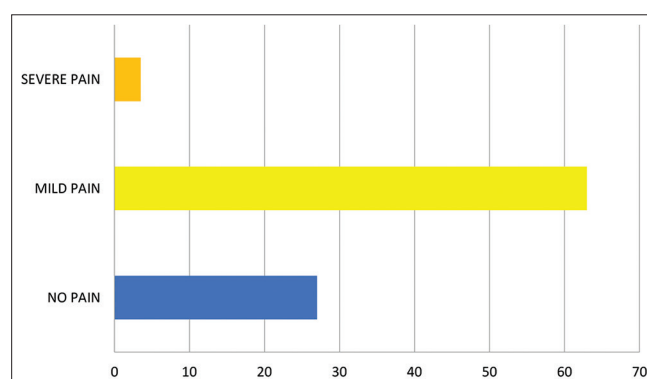


Fig. 3: Pain score

Table 1 : Position of IUCD in uterus

Position of IUCD	% of IUCD	Details
Misaligned	40%	30% rotated ≥90° 10% displaced downwards
Embedded/partially perforated	30%	20% only in endometrium 10% till myometrium

tolerated without any analgesic (Fig. 3). One patient experienced severe pain while negotiating entry into internal Os so the office procedure was abandoned and later done under anesthesia. She had a history of previous two C-sections. 63% of patients who had a history of unsuccessful removal by a conventional method, they all reported less pain during office hysteroscopy compared to past experience of conventional trial. IUCD threads are present in 45% coiled on itself. In 55% of cases, threads were absent. No major complications were noted.

### DISCUSSION

Office hysteroscopy is a safe and effective method for IUCD removal.

The results of our study demonstrate a high success rate (90%) which is comparable to a study done Carin and Garbin [4] which showed 94% success. The procedure time was relatively short, with a mean duration of 2.9 (2:50) min. Threads were absent in 55% of cases as most of the cases (63%) had a history of one or two failed attempts of IUD removal by conventional method in which sutures were broken. There was no case of vasovagal syncope in our study in contrast to Carin and Garbin [4] study which showed vasovagal syncope in 3% of cases. This is probably due to the size of the hysteroscope used in office setting which is 2.9 mm in our study in comparison to 5.5 mm in other study. The advantages of office hysteroscopy for IUCD removal include:

1. Improved visualization: Office hysteroscopy allows for direct visualization of the uterine cavity, enabling the healthcare provider to accurately locate and remove the IUCD.
2. Reduced procedure time: The procedure time is relatively short, reducing the time and discomfort associated with traditional blind removal methods.
3. Enhanced patient comfort: Office hysteroscopy is a minimally invasive procedure that can be performed in an outpatient setting, reducing the need for general anesthesia and hospitalization.
4. Improved success rate: The success rate of office hysteroscopy for IUCD removal is high, reducing the need for repeat procedures.

30 % of IUCD with missing threads were embedded either in endometrium or myometrium and 40% of IUCD with missing threads were misaligned. Details given in table 1.

## CONCLUSION

Office hysteroscopy by vaginoscopic method is an excellent method for retrieving IUCD from the uterus in cases of missing thread/string as well as embedded IUCD. In trained hands, it is superior to the conventional way of removal by hook, curette, and forceps which can be painful, and may need dilatation of the cervix and anesthesia. Office hysteroscopy is

safe, well tolerated by patients, minimally invasive, and almost painless. Benefits are direct visualization, less pain, no anesthesia, no hospital stay, and no cervical dilatation. We recommend office hysteroscopy as a first-line approach for IUCD removal.

## AUTHOR'S CONTRIBUTION

Dr. Aarti Sharma; Manuscript preparation, review of the article and data analysis, Dr. Rahil Kumar Sharma; data collection, and draft preparation, Dr. Alluri Rajyalaxmi; Data analysis, and manuscript review, Dr. Rachana Ghanti; Review of the complete manuscript.

## CONFLICT OF INTEREST

None declared.

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Nil.

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