Original Article

Tales of Hysteroscopic Evaluation of PPIUD with Missing String in a Tertiary Care Government Hospital

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Abstract

Background: *The safety and efficacy of the postpartum intrauterine device (PPIUD) has been documented worldwide with increasing institutional deliveries. It was relative new concept therefore a close observation should be kept on potential complication arising from it. Removal of an IUD can be easily done when the string is visible during speculum examination but the task become challenging when the string no longer visible.*

Objectives: *To evaluate the role of hysteroscopy for removal of PPIUD with missing string.*

Methods: *This descriptive study was conducted in tertiary government hospital over six months from July 2020 to December 2020. PPIUD clients with lost strings were included in this study. Before the procedure complete history about reason for retrieval, duration of insertion, complication related to IUD was recorded. Furthermore, speculum examination & USG was performed then decided for hysteroscopic evaluation and removal. Per-operative location of PPIUD in uterine cavity and any complication & associated pathology encountered were recorded. The size and model of hysteroscope also noted.*

Results: *Thirty one patients were included among them more than two third of PPIUD given following caesarean section (LSCS). Reason for PPIUD removal of most clients due to menstrual irregularities 29% displaced & fragmented CuT on USG 25.8% and desires for pregnancy. Nineteen respondents removed within three years due to complication like irregular menses ,displaced IUD on ultrasonography..*

Most of the PPIUD 64.5% in normal location rest of them deviated from normal among those three PPIUD were inverted & tip of the five PPIUD near the external os. Arms of cu-T were embeded in five clients, some difficulties faces to remove those. Polyp were found in two clients with menstrual irregularities. Postoperative outcome of all patients were uneventful.

Conclusion: *Hysteroscopy is a good modality for the removal of PPIUD with lost strings.*

Key Words:
Postpatum intrauterine devices (PPIUD), hysteroscopic removal.

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Introduction

Intra uterine contraceptive device (IUCD) has been in use for the last many decades to prevent pregnancy. With newer innovations in design and with better understanding of its use through years of evidence, the modern copper containing IUCD is a highly effective, safe, long-acting, coitus independent and rapidly reversible method of contraception with a few side effects.[1]

Contraceptive options are limited in the postpartum period, especially for lactating women. An international survey conducted in 52 countries found that children conceived <24 months apart had a higher risk of mortality.[2]

Post partaum intrauterine device (PPIUD) is a highly effective, reversible and long-acting family planning method that can be initiated in the immediate postpartum period, especially in lactating women. PPIUDs have been inserted in more than 65 000 women worldwide and the numbers are increasing with many countries introducing PPIUDs as part of their family planning programme.3 PPIUD insertion involves the insertion of a Cu T 380 A (provided free of cost by the Government of Bangladesh) in the first

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48 hr of delivery of fetus. This device has high acceptability rates and low incidence of complications.[1]

Normally IUD deserves a regular six months checking by gynaecologist. When it became troublesome, the most efficient way to treat the complication is to perform hysteroscopic evaluation.[4]

PPIUCD insertion has been observed to have an impact on the acceptance of long-acting reversible contraception, especially interval IUCD. Unless the complications are well understood and women counselled accordingly, side effects can, similarly, have a negative impact on attitude towards IUCDs. It is therefore imperative that the different types of complications be reported and analysed. The commonly reported side effects of PPIUCDs are an increase in menstrual bleeding, spotting and abdominal cramps. Rarely, PPIUCDs can result in expulsion of the device. These side effects usually subside over a variable period of time.[5]

As the numbers of PPIUCD insertions are increasing, we are getting wiser regarding complications of this procedure.[3] A frequent clinical problem is the loss of the filament at the external cervical os, the 'lost tail'. The disappearance of the string potential problems such as retracted or torn off tail, misplacement within the cavity, intra-mural penetration or extra-uterine location. IUDs may be misplaced in as many as 5% of cases.[4]

One of the less-understood entities is a malpositioned PPIUCD, a situation where the IUCD is present inside the uterus but its placement is eccentric and a part or the whole of it may be embedded in the myometrium or present as lost strings or as a failure to remove the intrauterine device.[3]

Methods of retrival of the device depends on visibility of the string during speculum examination. In patient whose PPIUD has visible string removal can be easily done.[6] Procedures for retrieval of a misplaced device include extraction with a metal hook, artery forceps, cylindrical brush, thread retriever or dilatation and curettage. Success is not ensured with above methods; failure and uterine trauma may occur. Hysteroscopy as a diagnostic and operative technique has enabled safe retrieval of misplaced IUDs.[4] Currently there were no studies in Bangladesh focusing on hysteroscopic removal of PPIUD without string. The purpose of this study to assess the position and character of PPIUD inside the uterine cavity and also share our experience with hysteroscopy for managing the so called "lost string"

Materials and Methods:

This study was carried out in obstetrics & gynae department of Shaheed Suarawardy Medical College and Hospital, Dhaka, Bangladesh over a period of six months from July 2020 - December 2020. Patient who are attending on gynae outpatient department (OPD) to remove the PPIUD with complication like menstrual irregularities, discharge ,displaced IUD and who were willing to conceive and string was not felt by herself were decided for hysteroscopic evaluation and removal.

Before the procedure complete history about reason for retrieval, duration of insertion, complication related to IUD was recorded & speculum examination was performed to confirm no string was visible. USG was done to see its position.

Then patient was admitted for hysteroscopic evaluation. In gynae operation theatre office hysteroscope 2.9mm with 30 telescope used with normal saline for distention of uterine cavity. If patient feel discomfort then Injection pethedine given for sedative effect.

Hysteroscopy was performed to detect the position of PPIUD with in uterine cavity and any misplacement, embedded or any associated pathology were recorded. Any indentation after removal recorded. After that it was removed by holding the string or tip of the vertical stem. If part of PPIUD were embedded over the uterine myometrium it was released by hysteroscopic scissor then removed.

Descriptive statistical analysis was used and data were expressed as frequency, percentages, mean +_ standard deviation, and range.

Inclusion criteria

1.Who gets treatment at least two months for complication.

2.String were not visible on per-speculum examination.

Results

There were 31 clients who were admitted for hysteroscopic guided removal of PPIUD with missing string over a period of six months from November 2020 to April 2021. The mean age of patients was 25.5yrs and more than two third PPIUD given following LSCS (Figure 1)

Most of the PPIUD removal due to abnormal uterine bleeding 29.0%, desire for pregnancy25.8% and displaced and fragmented PPIUD on USG 32.3% rest were discharge and dyspareunea. (Table 1.) More than Half of the patient removed with in three years51.6% due to complication related PPIUD like AUB and USG findings of displaced and discharge and dyspareunea. Those who removed after three years were due to desire to concieve and USG finding of fragmented Cu.T (Table I)

Table 1

Indication of removal & duration of PPIUD

		Interval					
		< 1	1 - 3	3 - 5	> 5	Total	
Indications of Removal	Wants to conceive	0	1	6	0	7	22.6
	Menstrual irregularities	2	6	1	0	9	29.0
	Displaced CuT	1	5	1	0	7	22.6
	Infection	0	1	0	1	2	6.5
	Dysperunia	0	2	0	0	2	6.5
	Wants to conceive & Discharge	0	1	0	0	1	3.2
	Fragmented CuT	0	0	2	1	3	9.7
Total		3	16	10	2	31	

Hysteroscopic evaluation reported that more than 64.5% PPIUD in normal position, 9.7% were inverted and also displaced from normal position. Tip of PPIUD found near the external os among 16.1% clients. (Table II)

Table-II

Hysteroscopic location of PPIUD

		Frequency	Percent
Valid	Inverted	3	9.7
	Near the OS	5	16.1
	Normal Position	20	64.5
	Deviation from normal	3	9.7
	Total	31	100.0

Five PPIUD were found to be embedded over the endometrium. horizontal stem of one cuT was deeply embedded over fundus of uterine cavity. All were partially embedded. Right sided of one arm of two ppiud were embedded near the right ostium. Horizontal stem of One of the inverted cuT was embedded on left lateral wall near the os. Polyp was found In two cases complaining AUB . Among the displaced PPIUD three were inverted and others were displaced from normal position.(table III)

Table-III

Intraoperative findings of PPIUD

		Frequency	Percent
Valid	Mucus with blood mixed secretion	2	6.5
	Embeded	4	12.9
	Normal	15	48.4
	Polyp	1	3.2
	Embeded with polyp	1	3.2
	Raw area	2	6.5
	Displaced	6	19.4

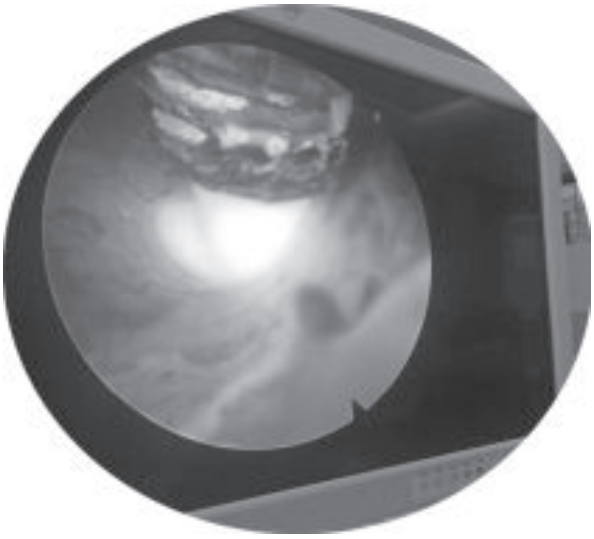

Fig.-1: *Horizontal part of both arms were embedded with in the endometrium of fundus.*

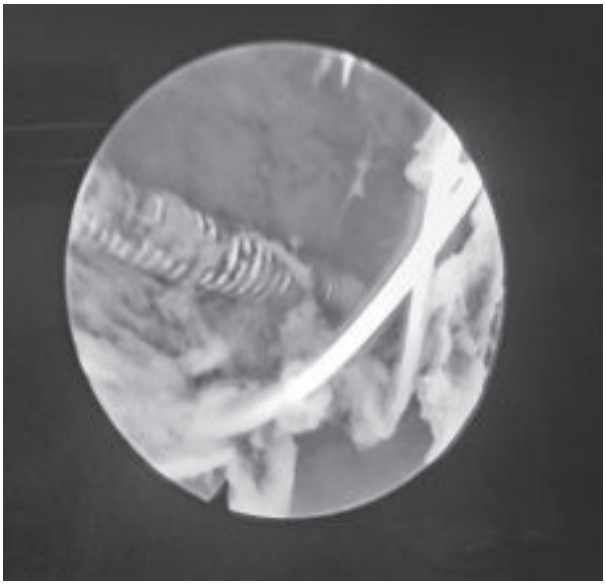

Fig.-2: *PPIUD mixed with discharge and blood*

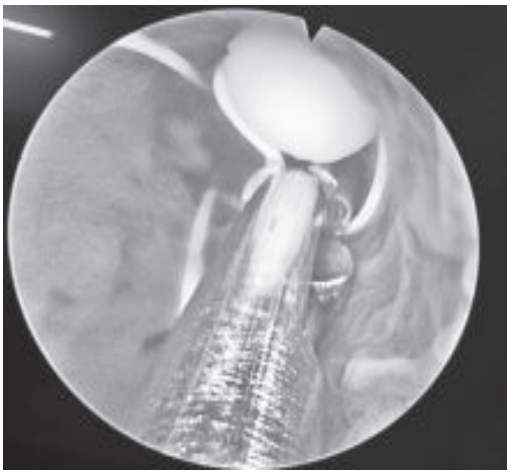

Fig.-3: *hysteroscopic removal of PPIUD with forceps*

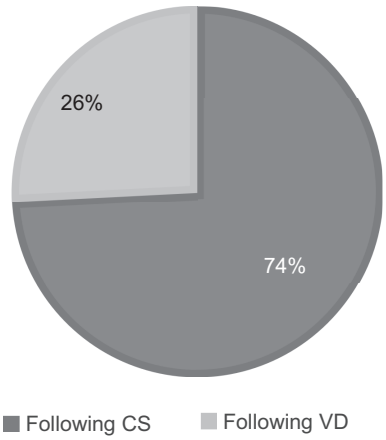

Fig.-5: More than two third PPIUD given following Lower segment caesarean section.

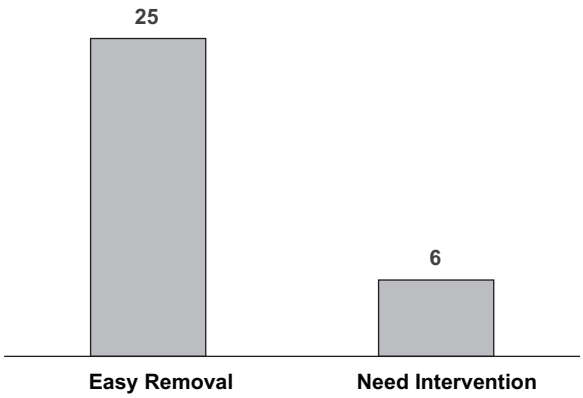

Fig.-4: *removal procedure*

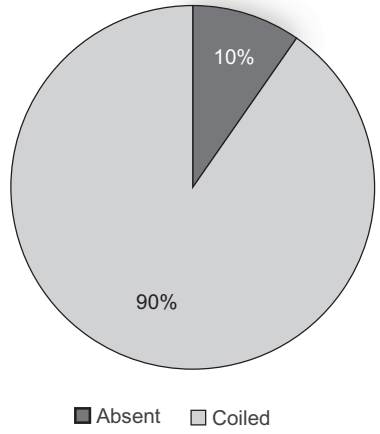

Fig.-6:: *hysteroscopic finding of string*

Almost all of the string were coiled with the cuT, only four cases string were absent (Fig.-3). All the PPIUD with lost thread were removed safely but six case were retreived with some difficulties with office hysteroscopy. Four cases need deep sedation .

Discussion

The postpartum period is recognized as a time frame that has high unmet need for contraception with limited choice available to women.Safe and highly effective, the IUD is one of the most frequent used reversible contraceptive method world wide.[7]

Offering insertion of a postpartum intrauterine device (PPIUD) prior to discharge after a facility birth may be a particularly convenient option for eligible women, with the distinct advantages of long-term nature, reversibility, and less follow-up required.[3]

Data provided by Directorate General of Family Planning Bangladesh reported 6697 PPIUD insertion from January ti June2018, for which insertion at the six PPIUD initiative facilities in this time frame accounted 30.6% of total PPIUD being provided.

Anita. M. showed PPIUD were inserted 53% & 47% following vaginal and cesarian delivery but in this study more than 70% following cesarean delivery as it conducted in tertiary centre.[7]Asto MRD, The average age of the patients was 32 and most were multigravida & reasons for removal included pain, spotting, desire for pregnancy, expired date of use, removal with concomitant operative procedure, infected fragment, pain, and desire for permanent sterilization . The most common consult for IUD removal was due to spotting.[9] Anita .M.Removal rates also varied from 2.6% in India and Kenya to 8.3% in Tanjania Overall removal rate 3.7%. The most common complaint was persistent vaginal discharge in 6.9% of cases and the second most common was abdominal pain (4.4%).[7] other study showed most of the predominant complaints were abdominal cramps and irregularities of menses.The presence of medical or social problem attributable to PPIUD was associated with shorter continuation.[12]

In present study mean age of removal with missing thread was 25.5 yrs. Most common reason for PPIUD removal was menstrual irregularities 29% and ultrasonographic finding of displaced IUD 22.6%.& fragmented 9.7%, among them most of the client (61%) removed with in three years. Whose PPIUD removed after three years wants to desire pregnancy25.8%.only 6.5% complaints of dyspareunea and infection (Table-1).

The management and counselling of women with lost string is a challenge for the general physician as well as trained gynaecologist. Studies have noted the incidence of lost strings fom PPIUDs to vary from5.3% to as high as 24%.[3] the mazority 91.89% of lost string curl inside the cervical canal and can easily found[10] threads were not visible in 29%.[7] In my my study all the participant had no sting visible per speculum examination. On hysterscopy no string were found 10% clients (Fig-3).

Marchi et al reported that, in cases of missing threads with interval IUCD, 98% of IUCD were normally positioned, in 1.2% the IUCD was expelled and in 0.7%, the IUCD had caused uterine perforation.[11] The reason for the malpositioning in cases of PPIUCDs could be a large uterine cavity and contraction of the uterus during the process of involution. Because of these two reasons, the IUCD direction may easily change. The ultrasound appearance in some case, however, was of an embedded IUCD, but in actuality, it was the opposing walls of the cornual end that gave the appearance of a device embedded in the myometrium. The reason for embedded IUCDs could be the malpositioned vertical arm, which continuously probes the myometrium during the lactation period, when the uterus is soft, and embedding in a part of it.[3]

In my study Total 5 PPIUD were embedded over the endometrium. Horizontal stem of one cuT was deeply embedded over fundus of uterine cavity(pic-1). All were partially embedded. Right sided of one arm of two PPIUD were embedded near the right ostium. Horizontal stem of One of the inverted cuT was embedded on left lateral wall near the internal os. Polyp was found in two cases complaining menstrual irregularities . Among the displaced PPIUD three were inverted and others were deviated from normal position.

All the PPIUD with lost thread were removed safely but six case were retreived with difficulties with office hysteroscopy so it should be assumed that hysteroscopy is a good modality for the removal of malpositioned PPIUD. Diagnostic hysteroscope has a smaller diameter, offering less cervial manipulation compared to operative hysteroscopy,using semirigid forceps in retrieving the device under direct visualization renders the procedure safe with minimal risk of complication. All the clients had stable post operative course,and all of them discharged after four hours of procedure.

Hysteroscopy performed not only to remove the PPIUD left in place but also it is an opportunity to check the uterine cavity shape and scars & to evaluate the endometrial linings. Office hysteroscope can be easily performed with out anesthesia.

Conclusion :

Hysteroscopy yields the correct picture and should be the preferred modality to remove PPIUD with missing threads compare with blind removal.

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