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Original Research Article

Comparison of ease of insertion, visibility of strings and continuation rate of post-partum intrauterine copper device insertion by long inserter versus with the help of Kelly's forceps

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ABSTRACT

Background: The objective of the study was to compare ease of insertion, visibility of strings and continuation rate of post-partum intrauterine copper devices (PPIUCD) insertion by long inserter versus with the help of Kelly's forceps.

Methods: 100 women were enrolled in our study which was conducted in department of obstetrics and gynecology, Subharti medical college and Chatrapati Shivaji Subharti hospital (CSSH), Meerut over a period of 2 years between November 2018 and August 2020. In study comparison was done on insertion technique of PPIUCD.

Results: High fundal placement was achieved with long inserter. There was no perforation and decreased infection rate among the users with no increase in incidence of side effects and expulsion. Among 50 insertion, 1 woman (2%) had partial expulsion, 2 women (4%) had complete expulsion and 1 woman (2%) got PPIUCD removed on request. Providers reported 100% easier technique. 96% satisfaction among the users.

Conclusions: The dedicated long inserter PPIUCD was found to be safe, with high acceptability among the participants and providers. Study revealed the reduced risk of infection and expulsion, providers also reported increased convenience in insertion compared to standard PPIUCD insertion techniques.

Keywords: PPIUCD, Long inserter, Kelly's forceps, Ease of insertion, Number of attempts, String visibility, Expulsion rate

INTRODUCTION

Contraception methods are the means to prevent unwanted pregnancy. Among all the available contraception methods, large women are currently using intra uterine contraception device, as it is a long-term contraceptive, reversible, safe and economical, easily available, requires minimum motivation, supervision, maintenance and does not interfere with breast feeding, highly effective, doesn't affect fertility and pregnancy is possible after its removal.

The conventional IUCD inserters are not long enough to reach postpartum uterine fundus therefore providers have to use Kelly's forceps, which requires them to remove the

IUCD from the inserter sleeve, place it at the tip of the Kelly's forceps, and then insert it into the uterus. This cannot be done by "no touch technique". To address this long inserter post-partum intrauterine copper devices (PPIUCD) are introduced, which doesn't require forceps for insertion, making insertion easy, comes preloaded therefore reducing the risk of possible contamination and damage to copper T.¹

It is made from flexible silastic and can accommodate the shape of post-partum uterus. Long insertion sleeve ensures fundal placement of IUCD further reducing the risk of expulsion and facilitating insertion.² It also has a longer string than the standard IUCD, so the problem of

non-visibility of string will not be there, also perceiving thread ensures patient copper T presence.



Figure 1: Postpartum intrauterine device inserter.

Aims and objectives of the study were to compare ease of insertion, visibility of strings and continuation rate of PPIUCD insertion by long inserter versus with the help of Kelly’s forceps

METHODS

Prospective observational study conducted in department of obstetrics and gynecology, Subharti medical college and Chhatrapati Shivaji Subharti hospital (CSSH), Meerut over a period of 2 years between November 2018 and August 2020, enrolled 100 women,50 insertion done with the help of Kelly’s forceps (group A) and the other 50 with long inserter PPIUCD (group B).

The software (statistical tool) used was SPSS 23.0.

Inclusion criteria included all women of age ≥18 years who deliver at Subharti medical college and have no contraindication for IUCD insertion and willing to visit hospital for regular follow up.

Exclusion criteria excluded uterine anomalies (e.g. Mullerian anomalies), unresolved PPH, chorioamnionitis or puerperal sepsis, prolonged leaking PV >18 hours, after 48 hours of delivery, patients in medical eligibility criteria (MEC) category 3 and 4.³

The selected women were screened according to the inclusion and exclusion criteria and again explained about PPIUCD insertion before carrying out the procedure. Written informed consent was taken from women willing to participate in the study and for the follow up visits at 2 weeks, 6 weeks, 3 months, 6 months or earlier in case of any adverse events. At each follow up women were asked for any specific complaint, pain abdomen assessed by VAS scale, dysmenorrhea, dyspareunia, vaginal discharge/infection, bleeding per vagina, menstrual disturbances, PABC scores, visibility

of strings, history of expulsion. If patient wants removal, reason for removal was noted.⁴

The research procedure followed was in accordance with the approved ethical standards of Chhatrapati Shivaji Subharti hospital/Subharti medical college, Meerut, Uttar Pradesh.

RESULTS

During study period, among 100 women majority belonged to age group of 20-25 years.⁵ All participants had at least one living child with 44% vaginal delivery and only 12% assisted vaginal delivery. Most of the women (54%) were not using any contraceptive previously and acknowledged doctor/health worker as major source of knowledge regarding copper T and others got to know about it from TV/internet, friends and relatives.

Table 1: Demographic comparison among two groups.

Variables	Group A (Kelly’s forceps) n=50 (%)	Group B (long inserter) n=50 (%)
Age (years)		
20-25	24	27
26-30	16	14
31-35	6	5
>35	4	4
Residence		
Rural	33	29
Urban	17	21
Type of delivery		
Normal	46	44
Assisted vaginal	4	6
Parity		
P1	32	29
P2	12	16

Table 2: Comparison of IUCD status among the groups at last follow-up.

IUCD status	Group A (Kelly’s forceps) (n=50)		Group B (Long inserter PPIUCD) (n=50)		Chi square	P
	N	%	N	%		
Partial expulsion	1	2	1	2	2.58	0.19
Complete expulsion/ removed	4	8	2	4		
Removed on request	2	4	1	2		

In study IUCD was partially removed in one (2.08%) woman at 6th month and completely removed in one (2%) woman at 6th week and in one (2.08%) woman at 6th month follow up also it was removed on request in one woman (2.04%) due to family pressure.⁶

Strings visibility being the important factor for both provider and the patient was taken care. String was visible in 80% at the time of insertion and at 6 weeks follow up after complete involution of uterus it was visible in 84%. In 93% women string was visible after 6 months of follow up.

Table 3: Visibility of string at the time of insertion.

Strings visibility	Group A (Kelly's forceps) (n=50)		Group B (Long inserter PPIUCD) (n=50)		Chi square	P
	N	%	N	%		
Visible	30	60	40	80	3.93	0.04*
Not visible	20	40	10	20		

Table 4: Visibility of string after 6 months follow up.

Strings visibility	Group A (Kelly's forceps) (n=50)		Group B (Long inserter PPIUCD) (n=50)		Chi square	P
	N	%	N	%		
Visible	40	86.9	45	93.7	0.98	0.57
Not visible	6	13.0	3	6.25		

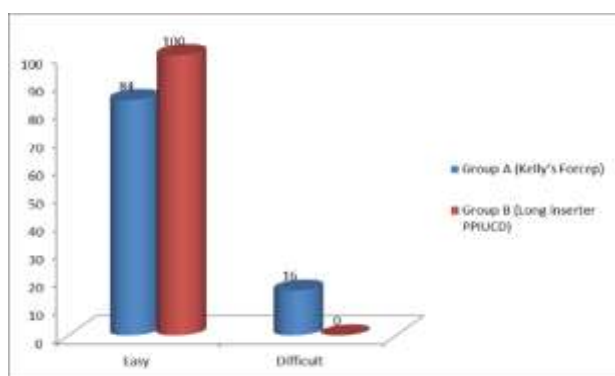


Figure 2: Comparison of ease of insertion among the groups.

Bleeding related problems is the most common side effects associated with IUCD insertion regardless of method of insertion and timing of insertion. In the first 6 weeks post-partum, changes are masked by usual irregular spotting and pain associated with uterine involution. In our study during follow up most common complaint was bleeding per vaginum, at 6th month follow up bleeding was reported in 12% and pelvic pain reported in 4%.⁷

Table 5: Comparison of side effects among two groups.

Bleeding	Group A (Kelly's forceps) (%)		Group B (Long inserter PPIUCD) (%)		P
2 weeks (n=50)	6	12	3	6	0.12
6 weeks (n=50)	6	12	3	6	0.12
3 months (n=50)	8	16	6	12	0.47
6 months (n=48)	10	21	6	12	0.08
Pain abdomen					
2 weeks (n=50)	10	2	5	1	0.16
6 weeks (n=50)	5	10	2	4	0.32
3 months (n=50)	3	6	2	4	0.57
6 months (n=48)	2	4	2	4	1

Table 6: Number of attempts required to insert PPIUCD among the groups.

No. of Attempts	Group A (Kelly's forceps) (%)		Group B (Long inserter PPIUCD) (%)		Chi square	P
	N	%	N	%		
1	39	78	48	96	5.11	0.04*
2	7	14	2	4		
>2	4	8	0	0		

*statistically significant

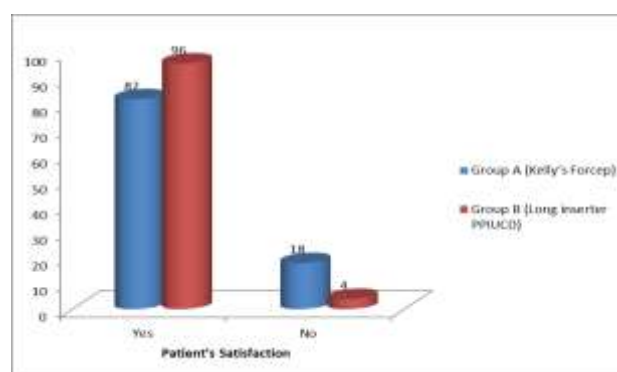


Figure 3: Patient's satisfaction.

100% health care providers reported easy insertion of PPIUCD with long inserter, 96% insertion done in single attempt. The women satisfaction questionnaire revealed that 96% were satisfied with the counselling and the decision to get PPIUCD and would also recommend it as the method of contraception to family and friends.⁸

DISCUSSION

In the study, the long inserter PPIUCD functioned well with 96% satisfaction rate among the subjects, easy insertion, less attempts required by providers to insert. Counseling and training of the care provider (doctors, nurses and health staffs) of a hospital form integral part in the success. It was observed that people were aware of methods of contraception but were not using them due to a misconception.⁹

Expulsion is a major concern with PPIUCD insertion but study shows that proper placement of device with correct technique and specialized training of service provider has reduced the expulsion rates significantly. Sharad Singh et al in 80 women conducted a study between March and July 2015 among 80 participants, concluded the IUCD was completely expelled in only 6 cases (7.5%), partially expelled in 8 cases (10.0%), and removed in 5 cases (6.3%) for social and clinical reasons.¹⁰ Of the 4 insertions reported by providers to be difficult, 3 resulted in complete expulsion and 1 in a partial expulsion.

Major cause of PPIUCD removal was increased bleeding related complaints, other was pain abdomen, similar findings were reported by Xess et al in 2017, conducted a study in 220 women and concluded that during follow up there was 5.5% removal at 3 months with bleeding as main reason of removal in 38.4%, others complaint of pain abdomen (23.1%) discharge (15.3%) and family pressure (23.1%).¹¹

Missing strings is one of the major causes of concern and apprehension both in acceptor and provider but this issue was also resolved with long strings in dedicated PPIUCD.

Limitations

Since this study was conducted in an urban tertiary care center with a small sample size and of north Indian population, the precision of outcome estimates may be limited. Larger studies are required over varying strata of Indian population to definitely establish the comparison of ease of insertion, visibility of string, continuation rate of PPIUCD copper T 380 insertion by long inserter versus Kelly's forceps.

CONCLUSION

Overall immediate post-partum IUCD is a very safe and highly effective contraceptive method among all long-acting reversible contraception. Using long inserter for PPIUCD insertion was easier and required fewer attempts, it has additional benefits of long strings. It can be inserted by using no touch technique, decreasing the risk of contamination. Study shows no increase in

incidence of any complications, partial or complete expulsion compared to conventional methods.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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