

Long term clinical outcome of intra caesarean intrauterine contraceptive device insertion

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ABSTRACT

Background: Adequate spacing following caesarean section prior to next pregnancy will decrease maternal and neonatal complications. Unmet need of contraception is still high in our country. Motivating women for intra caesarean copper T insertion will decrease the incidence of unintended pregnancies. Postpartum intra uterine contraceptive device (PPIUCD) insertion is an effective, long-term, reversible, nonhormonal contraceptive, best suited for Indian women. This study aims to evaluate long term complications like bleeding, pain, expulsion rate, perforation, infection, missing strings and continuation rate.

Methods: This prospective observational study was carried out in a tertiary care hospital in Chennai, between January 2012-June 2015. CuT 380A was inserted immediately following placental delivery in caesarean section. They were followed up at the time of discharge, at 6 weeks, then at 6 monthly intervals till 30months.

Results: A total of 235 PPIUCD acceptors were followed up for 30 months. Most of our acceptors are primipara group (n=156, 66.4%). Continuation rate is high 84.7% (n=199) at the end of 30 months. Expulsion rate was 2.55% (n=6), bleeding in 8.5% (n=20), pain in 8.9% (n=21) and infection in 0.85% (n=2) of acceptors. Removal rate at 30 months was 12.7% (n=30), majority of the removal was for opting to go for permanent method of sterilization (n=117, 7.2%), followed by planning next pregnancy (n=6, 2.55%). Pain was the cause for removal in only 0.67%, bleeding in 1.67%. Missing strings were observed in 11.9% (n=28), of which ultrasound confirmed in situ uterine cavity location in 22 acceptors.

Conclusions: Intra caesarean IUCD insertion is a safe and effective method of contraception for spacing with high continuation rate, low expulsion and complication rates.

Keywords: Caesarean intrauterine, Contraception, PPIUCD, Post partum

INTRODUCTION

Population explosion and its control is the real challenge faced by developing third world countries. Return to fertility is unpredictable in postpartum period and women are more vulnerable to unintended pregnancies. Pregnancies within 24 months of previous birth have higher risk of adverse pregnancy outcomes like abortion, preterm birth and preterm prelabour rupture of

membranes (PROM), small for gestation baby, increased neonatal morbidity and mortality, anemia, postpartum hemorrhage etc.¹

Adequate spacing following caesarean section before next conception will significantly decrease maternal and neonatal morbidity. In India 61% of births were spaced less than 3 years. Only 3-5% of postpartum women want another child within 2 years. In our country, 65% of

women in the first year of postpartum have unmet need for family planning.²

Postpartum intrauterine contraceptive device insertion (PPIUCD) offers effective and safe method of contraception in the postpartum period. The increased institutional deliveries in India, is a good opportunity to provide women easy access to PPIUCD services. The popularity of immediate PPIUCD insertion in countries like China, Egypt and Mexico support feasibility of this approach. The Ministry of Health and Family Welfare, Govt. of India introduced PPIUCD services in 19 states in 2010 in collaboration with John Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO, India).¹

Copper T 380A, a highly effective spacing contraceptive, suits these women in need of postpartum contraception. It is approved for 10 years use but it is effective for 12 years. The sterile inflammatory reaction induced by IUCD impairs fertilization, sperm motility, and sperm capacitation. Copper T 380A is made available free of cost through Govt family planning programme and it is used for immediate postpartum insertion.² The counseling for PPIUCD should take place in the antenatal period, early labour and immediate postpartum.³

Insertion of Copper T 380A (PPIUCD) during caesarean section may avoid the discomfort related to interval insertion and any bleeding from insertion will be disguised by lochia.⁴ It also avoids additional visits. The purpose of study is to evaluate the safety and efficacy of intra-caesarean PPIUCD. Objective of present study is to evaluate the patient's compliance and efficacy of PPIUCD in intra-caesarean insertions and long term follow up of complications and expulsion rate.

METHODS

This is a prospective observational study. The study was conducted at Govt Kilpauk Medical College Hospital,

Chennai. A total of 235 patients, who opted for intra-caesarean PPIUCD during January 2012 to June 2012 and were willing for follow up were included in the study. Post insertion follow-up of acceptors was carried out for 30 months. Informed and written consent was taken. Copper T 380A is inserted during caesarean section after the delivery of placenta and before uterine incision closure. Patients were encouraged to report any problem and advised to come for follow up at 6 weeks, 6 months, 1 year, and 2 year and at 21/2 years. Women were asked about their satisfaction with the method and any problem like lower abdominal and pelvic pain, abnormal bleeding per vaginum/ altered menstrual pattern, and white discharge per vaginum.

Inclusion criteria

- Age: 19-35 years
- Term caesarean section
- Lower segment caesarean section.

Exclusion criteria

- Immediate ante partum fever
- Ante partum hemorrhage
- Mullerian anomalies
- Fibroid uterus
- Postpartum hemorrhage
- PROM more than 18 hours

RESULTS

Age

Most of the acceptors (n=138, 58.7%) in our study are in young reproductive age (20-24 years) group.

Parity

Most of the acceptors (n=156, 66.4%) opted for spacing contraceptive are Primiparous women.

Table 1: Age of PPIUCD acceptors.

Age group (years)	Users continuing IUCD	%	Users discontinued IUCD	%	Chi square	P value
18-19	20	8.5	2	0.9	5.394	0.145
20-24	121	51.5	17	7.2		
25-29	43	18.3	14	6		
30 and above	15	06.4	3	1.3		
Total	199	84.7	36	15.3		

Table 2: Parity of PPIUCD acceptors.

parity	Users continuing IUCD	%	Users discontinued IUCD	%	Chi square	P value
1	140	59.6	16	6.8	5.39	0.0145
2	58	24.7	19	8.1		
3	1	0.4	1	0.4		
Total	199	84.7	36	15.3		

Table 3: Educational status of PPIUCD acceptors.

Educational status of IUCD acceptors	Users continuing IUCD	%	Users discontinued IUCD	%	Chi square	P value
Illiterate	9	3.8	3	1.3	2.576	0.765
Primary	19	8.1	4	1.7		
Secondary	116	49.4	22	9.4		
H. Secondary	30	12.8	5	2.1		
Diploma/degree	20	8.5	2	0.9		
Professional	5	2.1	0	0		

Table 4: Educational status of spouses of PPIUCD acceptors.

Educational status of husbands	Users continuing IUCD	%	Users discontinued IUCD	%	Chi square	P value
Illiterate	14	6	0	0	7.35	0.196
Primary	06	2.6	2	0.9		
Secondary	133	56.6	22	9.4		
H. Secondary	19	8.1	7	3		
Diploma/degree	21	8.9	5	2.1		
professional	6	2.6	0	0		

Table 5: Menstrual bleeding pattern in PPIUCD acceptors.

Bleeding	Users continuing IUCD	%	Users discontinued IUCD	%	Chi Square	P value
Normal menstrual pattern	187	79.6	28	11.9	28.766	0.000 significant
Moderately heavy	012	5.1	3	1.3		
Heavy	0	0	5	2.1		
Total	199	84.7	36	15.3		

Table 6: Infection in PPIUCD acceptors.

Infection	Users continuing IUCD	%	Users discontinued IUCD	%	Chi square	P value
Nil	197	83.8	36	15.3	0.365	0.546 Not significant
Present	2	0.9	0	0		
Total	199	84.7	36	15.3		

Table 7: Pain in PPIUCD acceptors.

Pain	Users continuing IUCD	%	Users discontinued IUCD	%	Chi square	P value
Nil	182	77.4	32	13.6	17.928	0.000 Significant
Mild	17	7.2	1	0.4		
Moderate	0	0	3	1.3		
Total	199	84.7	36	15.3		

Educational status

94.9% (n=223) of the IUCD acceptors and 94% (n=231) of husbands of PPIUCD acceptors were literates.

Bleeding

5.1% of the acceptors in continuing group and 1.3% in discontinued acceptors had moderately heavy bleeding. 2.1% (n=5) had heavy bleeding.

Infection

On follow up only 2 acceptors (0.85%) had vaginal infection.

Pain

7.2% (n=17) of the acceptors, who were still using IUCD had mild pain. IUCD removal had to be carried out in 4 acceptors (1.7%) for pain.

Missing strings

11.9% (n=28) acceptors were found with missing strings in follow-up. In many of them (n=22), IUCD was in situ within uterine cavity, which was confirmed by USG. 2.6% (n=6) spontaneous expulsions were noted on follow-up.

Table 8: Missing strings in PPIUCD acceptors.

	No of patients	%
Missing IUCD thread	28	11.9
Spontaneous expulsion	6	2.6
In situ (USG confirmed)	22	9.3

Time of expulsion

All expulsions (n=6) were noted within 1 year and expulsion rate is 2.55%.

Table 9: Time of IUCD expulsion.

Time of expulsion (months)	No.
8	2
9	1
12	3
18	Nil

Reason for CuT removal

Decision to undergo permanent sterilization (n=17, 7.2%), was the major reason for removal of CuT.

Table 10: Reason for CuT removal.

Reason for removal	No. of pts	%
Planning next pregnancy	6	2.6
Bleeding	5	2.1
Pain	3	1.3
Opting for permanent sterilisation	16	6.7
Total	30	12.7

Place of CuT removal

3.8 % (n=9) of the acceptors, had to be administered anesthesia in operation theatre for Cu T removal. In 8.9% of acceptors we were able to remove Cu T in outpatient department without difficulty.

Table 11: Place of CuT removal.

Place of cuT removal	No. of patients	%
OPD	21	8.9
OT	09	3.8

Continuation rate

Continuation rate was very high (84.7%, n=199) at the end of 30 months follow-up period.

Table 12: Continuation rate.

Time (months)	Users continuing IUCD	%	Users discontinued IUCD	%
8	233	99.1	2	0.8
9	232	98.7	1	0.4
12	216	91.9	16	6.8
24	199	84.7	17	7.2
30	199	84.7	36	15.3

DISCUSSION

Great progress has been achieved in the field of contraception over the last several decades. Unmet need of contraception is still high; over 120 million women worldwide want to prevent pregnancy. Govt. of India is working hard towards its commitment to achieve millennium development goal (MDG) for lowering maternal and childhood morbidity and mortality. India still contributes 20% of maternal death worldwide (2012 report of World Bank, UNFPA, WHO). Conditional cash transfer through schemes like Janani Suraksha Yojana (JSY) and Janani Shishu Suraksha Karyakaram (JSSK) has promoted institutional deliveries throughout the country.⁵ Huge numbers of institutional deliveries provide great opportunity for women to gain access to post partum family planning services. Women are highly receptive and motivated to accept any family planning method in the immediate post partum period. Providing effective family planning services can avert 30% maternal mortality and 10% of child mortality if couples spaced their pregnancies for 2 years apart.⁶

The postpartum period provides opportunity to the health care providers, for counseling regarding family planning methods, including PPIUCD to avoid unintended pregnancies. Immediate post placental IUCD insertion during caesarean section provides good opportunity to achieve long term reversible contraception with minimal discomfort. The advantages of PPIUCD are:

- No effect on breast feeding,
- Decreased perception of pain and bleeding,
- Immediate return of fertility after removal,
- Saves time and additional visits,
- No risk of perforation.⁷

The limitations of PPIUCDs are:

- Increased missing strings compared to conventional IUCD insertion,
- Sometimes removal of IUCD may need intravenous sedation.

In our study, majority of PPIUCD insertions were done in the younger fertile reproductive age group (n=138, 58.7%). Since IUCD is an ideal spacing contraceptive, most of our acceptors are primiparous mothers (n=156, 66.4%). Most of our acceptors and their partners are

literate. Excessive menstrual bleeding pattern was observed in 8.5% of acceptors, which was comparable to other studies. 5.1% (n=12) of the acceptors who had moderately heavy bleeding continued IUCD with satisfied medical management. 1.3% (n=3) with moderately heavy bleeding and 2.1% (n=5) with heavy

bleeding opted for CuT removal, which is statistically significant. Missing CuT strings were observed in 11.9% (n=28) of the subjects on follow up, of which (n=22) IUCD was located within uterine cavity, confirmed by Ultrasonography.

Table 13: Comparing complications with other studies.

Factors	Our study	Bhutta SZ et al	Garuda L et al	Singal S et al	Arshad F et al
Missed thread	11.9%	8%	20%	14.65%	5%
Bleeding	8.5%	-	10.4%	10.26%	10.24%
Expulsion	2.6%	-	6.25%	5.33%	2.8%
Infection	0.9%	4%	2.08%	3.66%	13.12%
Pain	9%	-		4.39%	15%
Continuation rate	84.7%	86%	83.3%	91%	70%

Only 2.6% (n=6) spontaneous expulsion were observed, comparatively less than other observers. Vaginal infection was observed only in 2 subjects (0.85%) and none needed CuT removal for this reason. Pelvic pain was observed in 21 users. 9% (n=21) of subjects, of whom 7.2% (n=17) with mild pain continued, 0.4% (n=1) with mild pain and 1.3% (n=3) with moderate pain needed removal of CuT which is statistically significant. Our expulsion rate was 2.55% (n=6) and all expulsions were observed within the first year of insertion. Major reason for CuT removal was, decision to undergo permanent sterilization (n=17, 7.2%) followed by planning for the next pregnancy (n=6, 2.6%). In 3.8% (n=9) of the acceptors with difficulty in CuT removal in OPD, had to be taken up to operation theatre for CuT removal under anaesthesia. Our continuation rate was high (84.7%) at 30 months and was comparable to similar studies.⁸⁻¹⁰

CONCLUSION

Intra caesarean insertion of IUCD can be recommended as the safe and effective method for postpartum contraception. Govt. of India needs to develop strategies to increase public awareness to accept PPIUCD through different sources. It can contribute significantly to decrease the number of unintended pregnancies in the postpartum period.

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