



COMPARISON OF IMMEDIATE POST-PLACENTAL VAGINAL VERSUS INTRA CAESAREAN INSERTION OF CuT 380A

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ABSTRACT **Background-** Intrauterine contraceptive device (IUCD) is the world's most widely used method of reversible birth control. Post partum insertion of IUCD (PPIUCD) was considered as safe and effective method to fulfil this unmet need. **Objectives-** To compare the safety, complications, expulsion, removal and continuation rates of immediate post-placental vaginal versus intra caesarean insertion of Copper T 380A. **Materials and Methods-** A prospective comparative study was conducted over a period of one year from July 2022- June 2023 in Motilal Nehru Medical College and Swaroop Rani Nehru Hospital, a tertiary care hospital in Prayagraj with a sample size of 200 women. **Results-** There were minimal complications experienced related to PPIUCD, which were treated, reassured and women were encouraged for continuing its usage, out of total 200 women 9 got CuT removed and 173 continued using it due to its contraceptive benefits. **Conclusion-** Since its contraceptive efficacy is very high as it has prompt fertility return after its removal, this method should be popularised across the country for women undergoing institutional deliveries irrespective of the mode of delivery.

KEYWORDS : PP-IUCD, CuT 380A, Comparison, Complications, Continuation rate.

INTRODUCTION:

Intrauterine contraceptive device (IUCD) is the world's most widely used method of reversible birth control. It is currently used by nearly 163 million women worldwide accounting for about 15 % of the women in reproductive life. Copper devices being the most popular, efforts to increase its effectiveness have led to advances and improvements in the original copper-releasing devices to such an extent that presently the failure rates for different models vary between 0.2 to 0.6 %.^{1,2,3}

According to National Family Health Survey-4 (NFHS-4), the current total unmet need for contraception is 12.9% and the unmet need for spacing is 5.7%.^{4,5} Most post-partum pregnancies are due to the non-use of any contraception, and among them, most are terminated by induced abortion. It was realized that 65% of women in their first-year post-partum have an unmet need for contraception. Post-partum insertion of IUCD (PPIUCD) was considered as safe and effective method to fulfil this unmet need. Cochrane review provides evidence for its safety and feasibility.^{6,7}

Before embarking on a national IUCD program, the Government of India with a view to introduce it in a phased manner started its first batch of IUCD clinician training in 2009. This was followed by scaling up of the availability of PPIUCD in 19 states by 2013. The opportunity to offer PPIUCD got further impetus with government programs encouraging institutional deliveries, i.e. Janani Shishu Suraksha Yojana.⁸

AIMS AND OBJECTIVES:

To compare the safety, complications, expulsion, removal and continuation rates of immediate post-placental vaginal versus intra caesarean insertion of Copper T 380A.

MATERIALS AND METHODS:

A prospective comparative study was conducted over a period of one year from July 2022- June 2023 in Motilal Nehru Medical College and Swaroop Rani Nehru Hospital, a tertiary care hospital in Prayagraj with a sample size of 200 women who were grouped into two categories:

Group 1: 100 women with normal vaginal delivery
Group 2: 100 women with caesarean section

INCLUSION CRITERIA:

- Desire to use Copper T 380A for contraception
- Given informed consent
- 20-40 years age group

- Haemoglobin >8 gm%
- Gestational age 37-42 weeks
- Willing to follow up

EXCLUSION CRITERIA:

- Premature rupture of membrane >18 hours
- Severe anaemia
- Antepartum haemorrhage
- Unresolved postpartum haemorrhage
- Intrauterine foetal death
- Chorioamnionitis
- Uterine cavity distortion with fibroid and septa
- Fever during labour
- Having active STD or other genital tract infection

Insertion techniques:

After applying inclusion and exclusion criteria and taking written valid informed consent, history pertaining to age, socioeconomic status and parity was noted. Under all aseptic precautions, copper T380A was inserted in two groups of 100 women each.

1. Post placental vaginally inserted group: Participants who delivered vaginally, after active management of third stage of labour, cervix was held using ring forceps and Copper T380A was held in a Kelly's forcep and IUCD was placed in the fundus of uterus vaginally such that no strings were visible at the cervical os.

2. Intra caesarean group: Participants who were undergoing caesarean section for obstetric indications. After the placenta was removed, Copper T380A was held between Kelly forcep and inserted through the uterine incision in the fundus of uterus. The strings were pointed towards cervix but not pushed through the cervical canal. Uterine incision was closed taking care not to include the strings of copper T380A.

RESULTS:

The women presenting to antenatal OPD, labour room were counselled and encouraged to opt in for PPIUCD. All women were then followed up at 6 weeks, 3 months and 6 months and clinical outcomes were then studied in terms of safety, efficacy, complications, removal, expulsion and continuation of Copper T amongst women with PPIUCD inserted in vaginal and caesarean group. A total of 200 women who opted in for the insertion of Copper T 380A in postpartum period within 10 minutes of placental expulsion were consented to be enrolled in the study.

TABLE 1: Distribution of women according to age, socioeconomic status, education status, parity and desire for future pregnancy

Variables	Categories	Vaginal Group (n=100)	Intra caesarean group(n=100)	Percentage	P value
Age	<20	03	01	2%	0.1255
	21-25	58	44	51%	
	26-30	36	35	35.5%	
	31-35	03	16	9.5%	
	>35	00	04	2%	
Socioeconomic Status	Upper	00	00	00	0.1135
	Upper middle	06	02	4%	
	Lower middle	27	31	29%	
	Upper lower	41	50	45.5%	
	Lower	27	16	21.5%	
Education Status	Literate	181	180	19.5%	0.9711
	Illiterate	19	20	80.5%	
Parity	Parity 1	37	32	34.5%	0.9688
	Parity 2	50	52	51%	
	Parity 3	11	15	13%	
	Parity 4	02	01	1.5%	
Desire for future pregnancy	Yes	64	63	63.5%	0.8832
	No	36	37	36.5%	

In our study, out of total women who opted in for IUCD insertion maximum number of women were of 21-25 years of age group (51%), majority of the women were of Upper lower class according to their socioeconomic status (45.5%), among the education status of women who opted in for IUCD insertion were literate women who have had secondary or higher education status were 80.5%. A higher acceptance rate was also observed in multiparae when compared with primiparous women and among the total women who opted in for IUCD insertion the majority of women desired for future pregnancy (63.5%). [TABLE 1]

TABLE 2: Comparison of women with complications at follow up at different time intervals

Complications	Follow up time intervals	Vaginal Group	Intra caesarean group	P value
Abdominal Pain	6 weeks	2%	3%	0.652
	3 months	3%	1%	0.314
	6 months	3%	1%	0.314
Vaginal Discharge	6 weeks	5%	5%	1.000
	3 months	3%	1%	0.312
	6 months	2%	2%	1.000
Heavy Bleeding	6 weeks	4%	2%	0.407
	3 months	4%	2%	0.407
	6 months	7%	3%	0.194
Missing Thread	6 weeks	10%	16%	0.207
	3 months	9%	13%	0.366
	6 months	5%	11%	0.117
Perforation	6 weeks	0%	0%	-
	3 months	0%	0%	-
	6 months	0%	0%	-

In our study when women in both groups with complications at different time intervals were compared it was found that women who reported abdominal pain in vaginal and caesarean group at 6 weeks were 2% and 3%, at 3 months were 3% and 1% and at 6 months were 3% and 1 % respectively, although the results were statistically insignificant at follow up at different time intervals (p value >0.05). The incidence of vaginal discharge among the vaginal and caesarean group at 6 weeks was 5% & 5%, at 3 months was 3% & 1%, at 6 months was 2% & 2% respectively, although the results were statistically insignificant at different follow ups. The incidence of heavy bleeding in vaginal and caesarean group at 6 weeks follow up was 4% & 2%, at 3 months was 4% & 2% and at 6 months was 7% & 3% respectively, here also the results were found to statistically insignificant (p value >0.05). The incidence of missing threads in vaginal and caesarean group at 6 week follow up was 10% & 16%, at 3 months was 9% & 13%, at 6

month follow up was 5% & 11% respectively and the results were found to be statistically insignificant. Not a single women suffered from perforation, or any other life threatening complication. [TABLE 2]

TABLE 3: Comparison of women with removal, continuation and spontaneous expulsion of CuT in Cesarean and Vaginal group at different time intervals

Variables	Follow up	Vaginal Group	Cesarean Group	P value
Removal	6 weeks	0%	0%	-
	3 months	2%	1%	0.566
	6 months	5%	1%	0.10782
Continuation	At 6 months	82%	91%	0.3249
Spontaneous expulsion	6 weeks	4%	1%	0.546
	3 months	11%	4%	0.332
	6 months	12%	6%	0.284

In our study 83% and 91% women in vaginal and caesarean group respectively continued the usage of Cu-T at the end of 6 months. The removal rate in vaginal and caesarean group at 6 weeks was 0 in both groups, at 3 months was 2% & 1% and at 6 months was 5% & 1% respectively. No statistically significant difference was seen in both groups. The expulsion rate was seen maximum at 6 months in vaginal group (6%) and in caesarean group maximum expulsion rate was seen also at 6 months follow up (6%), it was also seen that majority of expulsions occurred in vaginal group women, although the results were statistically insignificant. (p value >0.05) [TABLE 3]

DISCUSSION:

In our study the mean age of women at which post placental CuT was introduced found to be 26.00 +/- 3.80, constitute a younger age group suggesting women of younger age group are more easily counselled, as even they are looking for future childbirth, therefore wanted effective and reversible method of contraception. Majority of the women had at least formal education indicating education is an important factor in awareness and acceptance of PPIUCD. This renders people more receptive to new ideas and practices, spacing methods and importance of small family norms, also stated by Chaudhary et al 9 and Ullah & Chakraborty et al.10 Women often desire a long term, reversible and effective contraceptive method after one or two living children between two subsequent pregnancies. Multipara women with parity 3 and 4 were more inclined to opt for tubal ligation then PPIUCD insertion. In the current study a total of 8 women in vaginal group and 4 in caesarean group complaint of on and off dull aching, cramping lower abdominal pain not associated with menstrual cycle. Careful history and pelvic examination was done to rule out pelvic infections, ultrasound was done to verify CuT placement. These women were explained about temporary nature of such pain and antispasmodics were advised to such patients. Results were in conjunction with the study done by Roy R et al ¹¹ reported abdominal pain in 6% of vaginal and 5% in caesarean group. Women presented with vaginal discharge were treated with local pessaries, antibiotics and reassurance was given. Only one woman in vaginal group got CuT removed. Gupta JJ et al ¹², Abhijit Halder et al 13 reported very low incidence of CuT removal due to vaginal discharge. In our study the incidence of woman who experienced heavy menstrual bleeding in both the groups were low. This was maybe due to varying length of lactational amenorrhoea in postpartum woman who helps in getting used to device inserted. It was observed that number of women with missing thread subsequently decreases in both the compared groups with possible reason must be coiling of long thread in uterine cavity or breakage of nylon thread.

In the current study a total of 27 women in vaginal and 11 in caesarean group had spontaneous expulsion of CuT at different follow up visits with possible reason being involution of uterus. woman in caesarean group had experienced comparatively less expulsions which can be attributed the direct fundal placement with correct time of insertion. No cases of perforation occurred in either group possibly due to thick uterine wall and inserter's expertise. A total of 9 women, 7 of vaginal and 2 of caesarean group got their CuT removed due to medical problem with the common being pelvic pain and menstrual disturbances.

Total of 25 women, 18 in vaginal and 7 in caesarean were not satisfied with CuT usage, few women suffered from medical complication were counselled, treated and reassures and then preferred to continue with

CuT use due to its contraceptive benefit and were satisfied, similar results were shown by Abhijit Haldar et al.¹⁴

CONCLUSION:

There is need of nationwide strategies to improve the awareness of benefits of PPIUCD by increasing the skills of healthcare personnel, training the personnel for insertion techniques, promoting public awareness campaigns to increase the PPIUCD usage and thereby reducing the unmet need of contraception. Since its contraceptive efficacy is very high as it has prompt fertility return after its removal, this method should be popularised across the country for women undergoing institutional deliveries irrespective of the mode of delivery.

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