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A Comparative Study of Post-placental IUCD Insertion after Vaginal Delivery versus during Caesarean Section

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Abstract

Introduction: Immediate postpartum period is the period from expulsion of placenta to 48 hours of delivery. The CuT-380A is effective for 10 years of continuous use. Institutional delivery provides an opportunity to the women with immediate Post-placental Intrauterine Contraceptive Device Services. **Aims and Objectives:** To compare complications of PPIUCD inserted after vaginal delivery and during caesarean section up to 12 weeks. To compare the rate of expulsion of PPIUCD inserted after vaginal delivery and after caesarean section. **Material and Methods:** Total 200 subjects were included in the study. Group A - Consisting of 100 subjects in whom IUCD (CuT 380 A) was inserted after vaginal delivery. Group B - Consisting of 100 subjects in whom IUCD (CuT 380 A) was inserted during caesarean section. **Results:** Whether CuT is expelled or in situ among both groups at 6 weeks and at 12 weeks shows significant difference in both groups; the rate of expulsion is more in group A at 6 weeks than group B, at 12 weeks there is no significant difference (P value = 0.0001 at 6 weeks and P value = 0.579 at 12 weeks). The reason might be early ambulation of patients after vaginal delivery compared to caesarean section. **Conclusion**: There should be a campaign to increase the awareness regarding lengths of PPIUCD. Health care personnel should be properly trained regarding aseptic insertion techniques and this will increase the usage of PPIUCD, reduce the unmet needs of contraception and also decrease the complications

Keywords: CuT 380 A, Post Placental IUCD, vaginal delivery, Caesarean Section

1. Introduction

Immediate postpartum period is the period from expulsion of placenta to 48 hours of delivery[1]. IUCD inserted during this period is known as Post placental IUCD insertion. This is the period when women are highly motivated to accept long term family planning methods[2]. Routinely intrauterine contraceptive device is inserted after six weeks of normal delivery and twelve weeks of caesarean section; this time gap increases the chances of failure to follow-up[3]. About 61% of birth occurs within 36 months post partum or less, 27% occur at 24 months post partum and 34% occur within 24-35 months post partum[4]. Also around 40% return to sexual activity within first 3 months and 90% resume to sexual activity by 10-12 months postpartum, which exposes the women to risk of having unplanned pregnancy[5,6]. The copper containing IUCD CuT380A has T shaped polyethylene surface with 380A (Armstrong units) of exposed surface area and is provided free of cost by the government. The CuT-380A is highly effective. The CuT-380A is effective for 10 years of continuous use[7]. The present rate of IUCD use in India is only 2%[8]. Institutional delivery provides an opportunity to the women with immediate post-placenta intrauterine contraceptive device services[9].

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The benefit of intrauterine contraceptive device is that it is a long term and reversible contraceptive[5]. Subject can remove CuT whenever she desires pregnancy[6].

2. Aim and Objective

- To compare complications of PPIUCD inserted after vaginal delivery and caesarean section up to 12 weeks.
- To compare the rate of expulsion of PPIUCD inserted after vaginal delivery and after caesarean section.

3. Materials and Methods

Study Design - Comparative interventional study.
Study Period - August 2017 to December 2019.
Study Setting - The study was conducted in the Department of Obstetrics and Gynaecology in tertiary care center after written informed consent from the selected patients and ethics committee approval.
Sample size - 200, to be divided into
Group A - Consisting of 100 subjects in whom IUCD (CuT 380 A) was inserted after vaginal delivery, and
Group B - Consisting of 100 subjects in whom IUCD (CuT 380 A) was inserted during caesarean section.

4. Eligibility Criterion

4.1 Inclusion criteria

- Subjects in whom PPIUCD (CuT 380 A) was inserted after vaginal delivery and during caesarean section.
- Subject can be Primipara or multipara.
- Subject who were willing for follow up for next 12 weeks.

4.2 Exclusion Criteria

- Subjects in whom other method of contraception was used.
- Post-partum haemorrhage.
- Cases of retained placenta requiring manual removal of placenta.
- After 48 hours of delivery.
- Other contraindications of intrauterine contraceptive device insertion.

5. Methodology

Post placental IUCD was inserted within 10 minutes or 48 hrs of vaginal delivery or immediately after placenta is out during caesarean section. Cu T 380 A was used in the study, which was placed at the level of fundus. At the time of discharge subjects were asked to follow-up after six weeks and twelve weeks or even early if she had any complain.

At both visits subjects were asked for abdominal pain, excessive per vaginal bleeding or discharge. Per speculum examination was done to check for status of vagina, cervix, IUCD thread and any kind of active bleeding or discharge. Per vaginal examination was also done to check for involution status of uterus.

During both the visits detailed gynaecological examination was done.

6. Results

This study was conducted to compare the complications of post-placental IUCD insertion after vaginal delivery and caesarean section.

Table 1 shows age wise distribution in both groups. There is no statistically significant difference in both groups (P value = 0.610), mean age in group A was 26 yrs and in group B was 27.1 yrs.

Table 2 shows educational status of patients in both groups when compared shows that the rate of acceptance of PPIUCD is more among secondary and higher secondary group compared to primary education group (P value = 0.249).

Table 1. Age wise distribution in both groups

Age-Group	Vaginal		Caesarean	
	No	Percentage	No	Percentage
20-25	30	30.0	23	23.0
26-30	23	23.0	33	33.0
31-35	22	22.0	31	31.0
36-40	25	25.0	23	23.0
Total	100	100.0	100	100%
Mean ± SD	26.08 ± 4.63		27.17 ± 4.77	
Z-value	0.137			
P-value	P = 0.610 NS			

Table 2. Education wise distribution in both Groups

Education	Vaginal		Caesarean		Chi-square value	p-value
	No	Percentage	No	Percentage		
Primary	12	12.0%	10	10.0%	1.45	P = 0.249 NS
Secondary	23	23.0%	28	28.0%		
Higher Secondary	42	42.0%	40	40.0%		
Graduate	23	23.0%	23	23.0%		
Total	100	100%	100	100%		

Table 3. Rate of complications

Rate of Complications		Vaginal delivery	Caesarean section	P value
Discharge PV	6 weeks	12%	12%	0.535
	12weeks	5%	6%	0.905
Bleeding PV	6 weeks	5%	3%	0.470
	12 weeks	2%	2%	1.0.
Pain in abdomen	6 weeks	17%	12%	0.315
	12 weeks	4%	4%	1.000
CuT thread in situ	6 weeks	84%	97%	0.001
	12 weeks	84%	96%	0.001
CuT continued	6 weeks	88%	91%	0.489
	12 weeks	88%	91%	0.489

Table 3 shows complications occurring in both groups; discharge per vaginal among both groups at 6 weeks and at 12 weeks has no statistically significant difference in both groups at both visits (P value = 0.535 at 6 weeks and P value = 0.905 at 12 weeks). Bleeding per vaginal among both groups at 6 weeks and at 12 weeks has no statistically significant difference in both groups at both visits (P value = 0.470 at 6 weeks and P value = 1 at 12 weeks). Pain in abdomen among both groups at 6 weeks and at 12 weeks do not show any statistically significant difference in both groups at both visits (P value = 0.315 at 6 weeks and P value = 1.00 at 12 weeks). Whether CuT is expelled or in situ among both groups at 6 weeks and at 12 weeks shows significant difference in both groups; the rate of expulsion is more in group A at 6 weeks than group B. After 6 weeks the rate of expulsion is reduced (P value = 0.0001 at 6 weeks and P value = 0.579 at 12 weeks). The reason might be early ambulation of patients after vaginal delivery compared to caesarean section. Number of patients who removed copper T among both groups shows no statistically significant difference in both groups (P value = 0.489). Level of hemoglobin among both the groups did not show any statistically significant difference in both groups (P value = 0.778).

There are studies related to post placental IUCD insertion after vaginal delivery and caesarean section which has similar results as our study.

Table showing comparison of present study with above studies.

Study	Expulsion Rate		
	Vaginal delivery	Caesarean section	P value
Reetu Hooda *et al.*[10]	9.1%	2.1%	0.042
Thiam O *et al.*[11]	3.5%	2%	0.004
Jasmin *et al.*[12]	10%	2%	0.03
Mahwish Najam *et al.*[13]	16.6%	3%	<0.05
Present study	13%	3%	0.001

The rate of expulsion in our study group among vaginally delivered patients was more probably because PPIUCD insertion was recently started in our institution. As skill of placement of IUCD reduces the rate of

complications, the rate expulsion in our institution will reduce in further year.

7. Conclusion

The awareness of the PPIUCD and its benefits among the study group was insufficient. All women had to be counseled and told about benefits of PPIUCD in the antenatal period only.

Acceptance of Cu T even after counseling was less due to various misconceptions and fear associated with Cu T. Hence we had to remove these misconceptions from the minds of people through various media like by putting informative learners at the hospitals and various public places, client partner, family members were also counselled right from first antenatal visit in the antenatal clinic. Couples were educated about the healthy mothers and child which can be achieved by proper spacing of pregnancies.

Acceptance also increased due to fewer side effects, long term action, reversible in nature and no interference with breast feeding. PPIUCD is safe and effective in both vaginal and caesarean delivery but expulsion rate is slightly more in vaginal delivery.

As the duration from insertion increases side effect associated with PPIUCD like pain in abdomen, discharge or bleeding per vagina decreases and that will help in reassurance and counseling to continue with the PPIUCD usage.

Hence there should be a campaign to increase the awareness regarding lengths of PPIUCD. Health care personnel should be properly trained regarding aseptic insertion techniques, this will increase the usage of PPIUCD and therefore reduce the unmet needs of contraception.

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