



A STUDY OF POSTPARTUM INTRAUTERINE CONTRACEPTIVE DEVICE INSERTIONS IN CAESAREAN SECTIONS AND FOLLOWING VAGINAL DELIVERIES

Obstetrics and Gynaecology

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ABSTRACT

Aim: To study clinical outcomes of immediate postpartum IUCD insertion and to compare immediate postpartum IUCD insertion as a factor of route of insertion (caesarean vs. vaginal).

Material and methods: This prospective study was conducted in a Department of Obstetrics and Gynaecology, College of medicine and JNM Hospital, Kalyani, Nadia. Duration of the study was one and half years [15 months inclusion, 3 months follow up]. Total 100 cases are included [50 vaginal and 50 caesarean]. Women who were attending or referred to OPD or ER of Dept. of Obst and Gynae, College of medicine and JNM Hospital and delivering either vaginally or by caesarean section, have received counseling for postoperative contraception and have consented to PPIUCD insertion

Result: It was found that in Caesarean, 26(52.0%) patients had bleeding P/V 6 weeks. In Vaginal, 28(56.0%) patients had bleeding P/V 6 weeks. Association of bleeding P/V 6 weeks vs. group was not statistically significant ($p=0.61968$). In Caesarean, 11(22.0%) patients had bleeding P/V 3 weeks. In Vaginal, 13(26.0%) patients had bleeding P/V 3 weeks. Association of bleeding P/V 3 weeks vs. group was not statistically significant ($p=0.6395$).

Conclusion: Infection was not statistically significant in two groups at 6 week and 3 month. Missing thread was significantly higher caesarean delivery compared to vaginal delivery. It was also found that refusal/ continuation was more common in vaginal delivery compared to caesarean delivery, which was not statistically significant.

KEYWORDS

Intrauterine contraceptive device, vaginal delivery, Caesarean section, Postpartum.

INTRODUCTION

Immediate postpartum contraceptive device is a lucrative postpartum family planning method which provides effective reversible contraception to women in delivery settings. Most women do not desire a pregnancy immediately after a delivery but are unclear about contraceptive usage in postpartum period and availability of contraceptives (unmet need 65%). This results in unplanned and unwanted pregnancies.

The disadvantage with immediate postpartum IUD insertion is the risk of spontaneous expulsion which can be reduced by improvements on the insertion technique.

Early resumption of sexual activities coupled with early and unpredictable ovulation leads to many unwanted pregnancies in the 1st year postpartum. Unwanted pregnancies cause increase no of induced abortions, which cause complications as ☐ Septic abortion ☐ Hemorrhage ☐ Shock ☐ Even death. So in our country 25% of maternal mortality can be reduced if unwanted pregnancy is prevented. To prevent unwanted pregnancies PPIUCD insertion is the best methods in lactating period.

Most women do not desire a pregnancy immediately after a delivery but are unclear about contraceptive usage in postpartum period. This results in unplanned and undesired pregnancies, which in turn increases induced abortion rates and consequently maternal morbidity and mortality. In a recent study of postpartum unintended pregnancies 86% resulted from nonuse of contraception and 88% ended in induced abortions. Continuation of these pregnancies is also associated with greater maternal complications and adverse perinatal outcomes. In India, 65% women in the first year postpartum have an unmet need for family planning. Hence, providing contraception in this sensitive period is important.^{1,2}

In India, as in many other countries, postpartum family planning is usually initiated after 6 weeks postpartum. Early resumption of sexual activity coupled with early and unpredictable ovulation leads to many unwanted pregnancies in the first year postpartum. Moreover, in developing countries particularly, women who once go back home after delivery do not return for even a routine postpartum check-up, leave aside contraception. This is may be due to lack of education and

awareness, social pressure, and nonaccess to facilities nearby.³ Thus, immediate postpartum family planning services need to be emphasized wherein the woman leaves the hospital with an effective contraception in place. Increase in hospital deliveries provides an excellent opportunity to sensitize women and provide effective contraception along with delivery services. An intrauterine contraceptive device (IUCD) has several advantages for use in postpartum period as it is an effective, long term reversible contraception, is coitus independent, and does not interfere with breast feeding.

Cochrane reviews provide evidence of safety and feasibility of postpartum IUCD (PPIUCD) insertions in various settings. However, studies have reported high expulsion rates (10.4–16.4%). Most of the studies published were carried out more than a decade ago.⁵ Since then various advancements have been tried to decrease expulsion rates and improve PPIUCD acceptance. PPIUCD insertions via different routes (vaginal or caesarean) may have different outcomes at follow-up.⁶

Vaginal and caesarean may have different outcomes at follow up there is minimal research comparing results between vaginal and caesarean insertion this inspired me to analyze PPIUCD insertion at our institute.

OBJECTIVE

- To study clinical outcomes of immediate postpartum IUCD insertion
- To compare immediate postpartum IUCD insertion as a factor of route of insertion (caesarean vs. vaginal)

METHODOLOGY

Study Area: Department of Obstetrics and Gynaecology, Calcutta National Medical College and Hospital, Kolkata

Study Design: It is a prospective study

Study type: It is a comparative type of study

Study period: One and half years [15 months inclusion, 3 months follow up]

Sample size: Approximately 100 cases are expected [50 vaginal and 50 caesareans]

Study population: Women who was attending or referred to OPD or ER of Dept. of Obst and Gynae, College of medicine and JNM

Hospital, Kalyani, Nadia and delivering either vaginally or by caesarean section, have received counseling for postoperative contraception and have consented to PPIUCD insertion.

INCLUSION CRITERIA

- Following vaginal delivery within 10 mins of placental removal after counselling and consent
- During caesarean section following delivery of placenta after counselling and consent
- 18-40 years old
- Desires to have PPIUCD after counseling
- No major systemic illness

EXCLUSION CRITERIA

- Hb% < 8 gm%
- Rupture of membrane > 18 hrs
- Postpartum haemorrhage
- Coagulation disorders
- Fever
- Clinical symptoms of infection during labour

Timeline

After getting approval from Institutional Ethics Committee data collection will be started and continued for one and half year. After completing data collection analysis of results and writing of thesis will be completed

STATISTICAL ANALYSIS:

For statistical analysis data were entered into a Microsoft excel spreadsheet and then analyzed by SPSS 24.0. and GraphPad Prism version 5. A chi-squared test (χ^2 test) was any statistical hypothesis test wherein the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. Without other qualification, 'chi-squared test' often is used as short for Pearson's chi-squared test. Unpaired proportions were compared by Chi-square test or Fischer's exact test, as appropriate. p -value ≤ 0.05 was considered for statistically significant.

RESULT AND DISCUSSION

We found that association of age in years vs. group was not statistically significant ($p=0.9660$). We found that association of parity vs. group was not statistically significant ($p=0.0637$).

Shanavas A et al⁷ (2017) found that cesarean and vaginal delivery with no significant differences in safety and efficacy depending on the route of insertion. There was no case of perforation or failure and no significant risk of infection in either group. Spontaneous expulsion occurred in two cases inserted by vaginal route. Missing string incidence is high in the cesarean group compared to vaginal insertion.

Salem SA et al⁸ (2018) found that IUCD application showed that expulsion rate was 10/94 (10.6%) in immediate group but 4/95 (4.2%) in conventional group with no statistical significance between the studied groups. Pelvic infection rate was 2.3% and 2.2% respectively, a difference that was not statistically significant. Also, there was no significant difference in bleeding patterns along the 6 weeks follow up. Continuation rate was 75/94 (83%) in immediate group and 83/95 (87.4%) in conventional group. Device tail visibility at 1 week, 6 weeks and 6 months postpartum was significantly lower in immediate group than conventional group (p value < 0.0001). Insertion of Copper T 380A IUD during C-section is safe and effective with expected low expulsion, and high continuation rate as in conventional method.

We found that in Caesarean, 14(28.0%) patients had pain 6 weeks. In Vaginal, 20(40.0%) patients had pain 6 weeks. Association of pain 6 weeks vs. group was not statistically significant ($p=0.2052$). It was found that in Caesarean, 14(28.0%) patients had pain 3 weeks. In Vaginal, 23(46.0%) patients had pain 6 weeks. Association of pain 3 weeks vs. group was not statistically significant ($p=0.0623$).

Tripathi U et al⁹ (2018) found that no serious complications such as pregnancy or perforation were encountered in our series. Most common complication reported in both the groups was excessive bleeding PV followed by pain in lower abdomen. Spontaneous expulsion of the device was noted in 3% of vaginal insertions and none in the cesarean insertion. PPIUCD is an excellent method to limit or space child births.

It was found that in Caesarean, 26(52.0%) patients had bleeding P/V 6 weeks. In Vaginal, 28(56.0%) patients had bleeding P/V 6 weeks. Association of bleeding P/V 6 weeks vs. group was not statistically significant ($p=0.61968$). We found that in Caesarean, 11(22.0%) patients had bleeding P/V 3 weeks. In Vaginal, 13(26.0%) patients had bleeding P/V 3 weeks. Association of bleeding P/V 3 weeks vs. group was not statistically significant ($p=0.6395$).

Heller R et al¹⁰ (2017) found that the expulsion rate by one year was 8.8%. There were no cases of uterine perforations and one case of infection (0.8%). Follow-up rates were 82.5% at 12 months, and continuation rates with intrauterine contraception at 12 months were 84.8% of those contacted. At 12 months, 92.7% of respondents asked were either 'very' or 'fairly' happy with their intrauterine contraception. Routine provision of intrauterine contraception at elective cesarean for women in a public maternity service is feasible and acceptable to women. It is associated with good uptake and good continuation rates for the first year. This could be an important strategy to increase use of intrauterine contraception and prevent short inter-pregnancy intervals and unintended pregnancies.

It was found that in Caesarean, 3(6.0%) patients had discharge P/V 6 weeks. In Vaginal, 7(14.0%) patients had discharge P/V 6 weeks. Association of discharge P/V 6 weeks vs. group was not statistically significant ($p=0.1824$). In Caesarean, 10(20.0%) patients had discharge P/V 3 weeks. In Vaginal, 19(38.0%) patients had discharge P/V 3 weeks. Association of discharge P/V 3 weeks vs. group was statistically significant ($p=0.0473$).

Kapp N et al¹¹ (2009) found that comparison arms could have included early postpartum insertion (from 10 minutes postplacental to hospital discharge) or standard insertion (during a postpartum visit). Trials could also have compared different IUC methods or insertion techniques. Delivery may have been vaginal or cesarean. Primary outcomes were placement (insertion), subsequent expulsion, and method use at study assessment.

In Caesarean, 1(2.0%) patient had infection 6 weeks. In Vaginal, 2(4.0%) patients had infection 6 weeks. Association of infection 6 weeks vs. group was not statistically significant ($p=0.5577$). In Caesarean, 1(2.0%) patient had infection 3 weeks. In Vaginal, 1(2.0%) patient had infection 3 weeks. Association of infection 3 weeks vs. group was not statistically significant ($p=1.0000$).

Goldstuck ND et al¹² (2017) found six studies examined the problem of missing IUD threads at follow-up with only 30%–60% presence of strings observed. The IUD is a long-acting reversible contraceptive method that is suitable for use in all women undergoing CS. The problems of device expulsion, missing threads at follow-up, and the tendency of increased puerperal bleeding need to be solved. Solutions are proposed.

We found that in Caesarean, 10(20.0%) patients had missing thread. In Vaginal, 2(4.0%) patients had missing thread. Association of missing thread vs. group was statistically significant ($p=0.0138$).

Celen S et al¹³ (2011) found that the rates of overall complications were low. No incidence of perforation or pregnancy was reported. Only in 5.3% cases there were spontaneous expulsions which was significantly higher in vaginal deliveries ($p=0.042$). The incidence of missed IUCD strings was 8.1%, which was significantly higher in LSCS. ($p=0.000$).

Hooda R et al¹⁴ (2016) found that overall complication rates were low. No case of perforation or pregnancy was reported. Spontaneous expulsions were present in 5.3% cases and were significantly higher in vaginal insertions. The incidence of undescended strings was high (38%), with highly significant difference between both groups.

We found that in Caesarean, 1(2.0%) patient had expulsion. In Vaginal, 1(2.0%) patient had expulsion. Association of expulsion vs. group was not statistically significant ($p=1.0000$).

We found that in Caesarean, 46(92.0%) patients had Continuation and 4(8.0%) patients had refusal. In Vaginal, 38(76.0%) patients had Continuation and 12(24.0%) patients had refusal. Association of refusal/ continuation vs. group was statistically significant ($p=0.0290$).

Levi E et al¹⁵ (2012) found that Postpartum women who breastfeed their infants can also use Cu IUCD safely, as it does not interfere with breastfeeding. Postpartum IUCD can be inserted immediately after vaginal delivery, during caesarean section and up to 48 hours after birth, before women get discharged from the health facilities. There were no complications. The expulsion rate at 6 weeks is 6% and at 6 months is 5%. The removal rate was 5% at 6 weeks and 6% at 6 months. The continuation rates were 90% At 6 weeks and 80% at 6 months. Immediate postpartum insertion is safe and effective. Expulsion rate for immediate PPIUCD is slightly higher than the interval insertion.

We found that in Caesarean, 1(2.0%) patient had pregnancy. In Vaiginal, 1(2.0%) patient had pregnancy. Association of pregnancy vs. group was not statistically significant (p=1.0000).

Table: Association between Bleeding P/V 6 weeks and 3 Months, Discharge P/V 6 weeks and 3 Months, Infection 6 weeks and 3 Months Missing Thread and Expulsion vs GROUP

		GROUP			p-value
		Caesarean	Vaiginal	TOTAL	
Bleeding P/V 6 weeks	No	24	22	46	0.61968
	Row %	52.2	47.8	100.0	
	Col %	48.0	44.0	46.0	
	Yes	26	28	54	
	Row %	48.1	51.9	100.0	
	Col %	52.0	56.0	54.0	
Bleeding P/V 3 Month	No	39	37	76	0.6395
	Row %	51.3	48.7	100.0	
	Col %	78.0	74.0	76.0	
	Yes	11	13	24	
	Row %	45.8	54.2	100.0	
	Col %	22.0	26.0	24.0	
Discharge P/V 6 weeks	No	47	43	90	0.1824
	Row %	52.2	47.8	100.0	
	Col %	94.0	86.0	90.0	
	Yes	3	7	10	
	Row %	30.0	70.0	100.0	
	Col %	6.0	14.0	10.0	
Discharge P/V 3 Month	No	40	31	71	0.0473
	Row %	56.3	43.7	100.0	
	Col %	80.0	62.0	71.0	
	Yes	10	19	29	
	Row %	34.5	65.5	100.0	
	Col %	20.0	38.0	29.0	
Infection 6 weeks	No	49	48	97	0.5577
	Row %	50.5	49.5	100.0	
	Col %	98.0	96.0	97.0	
	Yes	1	2	3	
	Row %	33.3	66.7	100.0	
	Col %	2.0	4.0	3.0	
Infection 3 months	No	49	49	98	1.0000
	Row %	50.0	50.0	100.0	
	Col %	98.0	98.0	98.0	
	Yes	1	1	2	
	Row %	50.0	50.0	100.0	
	Col %	2.0	2.0	2.0	
Missing Thread	No	40	48	88	0.0138
	Row %	45.5	54.5	100.0	
	Col %	80.0	96.0	88.0	
	Yes	10	2	12	
	Row %	83.3	16.7	100.0	
	Col %	20.0	4.0	12.0	
Expulsion	TOTAL	50	50	100	1.0000
	Row %	50.0	50.0	100.0	
	Col %	100.0	100.0	100.0	
	No	49	49	98	
	Row %	50.0	50.0	100.0	
	Col %	98.0	98.0	98.0	
Missing Thread	Yes	1	1	2	1.0000
	Row %	50.0	50.0	100.0	
	Col %	2.0	2.0	2.0	
	TOTAL	50	50	100	
	Row %	50.0	50.0	100.0	
	Col %	100.0	100.0	100.0	

CONCLUSION

We found that pain was more common in vaginal delivery compared to caesarean delivery at week and 3 months but this was not statistically significant.

It was found that Bleeding P/V was higher in vaginal delivery compared to caesarean delivery at 6 week and 3 months though this was not statistically significant.

Discharge P/V was higher in vaginal delivery compared to caesarean delivery at 6 weeks but this was not statistically significant. Discharge P/V was significantly higher in vaginal delivery compared to caesarean delivery at 3 months.

Infection was not statistically significant in two groups at 6 week and 3 months.

Missing thread was significantly higher caesarean delivery compared to vaginal delivery.

It was also found that refusal/ continuation was more common in vaginal delivery compared to caesarean delivery, which was not statistically significant.

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