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Research Article

COMPARISON OF CONTINUATION OF POST-PLACENTAL INSERTION OF COPPER T AFTER CESAREAN SECTION AND NORMAL VAGINAL DELIVERY

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ABSTRACT

Objective: The objective of this study was to assess the efficacy of post-placental copper T insertion following vaginal and cesarean delivery.

Methods: This is a prospective study conducted for the period of 1 year on pregnant females undergoing deliveries at Department of Obstetrics and Gynecology, Sardar Patel Medical College and AGH, Bikaner. The total number of postpartum intrauterine contraceptive device inserted participants included in the study were 200, divided into two groups vaginal (group A) and lower segment cesarean section (LSCS) (group B) groups.

Results: Mean age of the patients was 26.15±4.02 years. Most of the acceptors in both the groups were para-2 with 30% in vaginal group and 76% in LSCS group. The complaints at 6 weeks follow-up, in both groups, were similar, but the rate of removal was higher in vaginal group (9%) compared to LSCS group (2%). At 3 months follow-up, in vaginal group, the most common complaint was bleeding per vagina (PV) in 7.31% cases whereas missing thread 31.25% in LSCS group. Over a period of 3 months, the main reason for intrauterine contraceptive devices (IUCD) removal was bleeding PV in both group (six cases in vaginal group and three cases in LSCS group).

Conclusion: Immediate post-partum insertion of IUCD appears to be safe and effective method of contraception.

Keywords: PPIUCD, LSCS, Vaginal delivery.

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INTRODUCTION

India's maternal mortality ratio stays at an alarming figure of 113/100,000 live births. Post-partum complications and complications related to multiple pregnancies are the major cause of maternal mortality [1]. National Population Policy 2000 aims to attain a stable population, gender, and demographic balance by 2045 by providing affordable and quality health care. Providing quality contraception services to women is one of the cornerstone for MDG goals of improved maternal and child health [2,3]. Postpartum period is one of the critical times when both woman and newborn need special and integrated package of health services as morbidity and mortality rates are quite high during this period and also the woman are vulnerable to unintended pregnancy [4]. Intrauterine contraceptive device (IUCD) is the most commonly used reversible method of contraception worldwide with about 127 million current users [5]. Copper IUCDs are the most commonly used type of IUCDs and the Cu T 380A has been found to be most effective IUCD, available in govt. sector free of charge [6]. It is observed that there are only 0.6–0.8 pregnancies per hundred women in the 1st year of use of postpartum IUCD (PPIUCD) [7]. Main purpose of this study is to compare risk and complication of PPIUCD insertion in both vaginal and cesarean delivery groups and to assess the safety, efficacy, expulsion, removal, and continuation rate of postpartum IUCD insertion in both the age groups.

Aim

The objective of this study was to assess the efficacy of post-placental copper T insertion following vaginal and cesarean delivery.

METHODS

Our study was a prospective hospital-based interventional analytical study conducted in the department of Obstetrics and Gynecology, S. P. Medical College and P. B. M. Hospital, Bikaner, Rajasthan. The sample size was 200 cases (100 vaginal deliveries, i.e., group A and 100 cesarean deliveries, i.e., group B).

Women in third trimester attending the antenatal clinic or admitted in labor room were counseled for PPIUCD. Exclusion criteria were ruled out. These included hemoglobin <8 g/dL, congenital uterine anomaly, coagulation disorders, TB, diabetes mellitus, heart diseases, post-partum hemorrhage, prolonged rupture of membrane >18 h, history of any ectopic pregnancy, distorted uterine cavity, patients consenting for sterilization, and chorioamnionitis. Informed consent was taken from the eligible cases.

Detailed history was taken including age, residence, religion, socioeconomic status, literacy, obstetric history, and number of prior children. Clinical examination and baseline investigations were done. Cu-T 380 was placed in the uterus after delivery of the placenta. Asepsis was ensured and proper technique used as per vaginal or cesarean mode of delivery.

Cases were kept in follow-up for immediate, 6 weeks and 12 weeks post-delivery or at any time in case excessive bleeding per vagina (PV), pelvic pain, foul smelling discharge, and with protrusion of CuT thread. At every visit, detailed clinical history was taken. Data collected were submitted for statistical analysis.

RESULTS

Table 1 shows demographic distribution of the study population. Acceptance of PPIUCD, in this study was best in the age group of 21–30 (81% in post-placental and 84% in intra-cesarean) followed by 31–40 years (12% and 13%, respectively). The mean age of acceptors in Group A was 26.28±4.367 years and in Group B that it was 26.02±3.67 years. In our study, majority of acceptors were educated till primary school with 74% in Group A and 73% in Group B. Least acceptors

Table 1: Sociodemographic and obstetrics characteristics of the study population

Age group (years)	Vaginal (group A) (n=100)	LSCS (group B) (n=100)
	No.	No.
≤20	5	3
21–30	81	84
31–40	12	13
≥40	2	0
Religion		
Hindu	86	89
Muslim	14	11
Residential area		
Rural	64	58
Urban	36	42
Education		
Illiterate	16	9
Primary	74	73
Secondary	10	18
Socioeconomic status		
Lower class	13	9
Upper lower class	19	17
Lower middle class	41	44
Upper middle class	23	20
Upper class	4	10

LSCS: Lower-segment cesarean section

were illiterate with 16% in group A and 9% in group B. Majority of cases were belonged to lower middle class (41% cases in vaginal group and 44% cases in lower segment cesarean section [LSCS] group). Most of acceptors that are 64 females in vaginal group and 58 females in LSCS group came from rural area and the rest belonged to urban area. Most of acceptors in both groups were Hindus with 86 in group A and 89 in group B. Rest of the acceptors were Muslims in both groups. Majority of acceptors are multipara with 90% in group A were para-2 or more and 96% in group B were para-2 or more. Only 10% females in vaginal group and 4% in LSCS group were primipara status (Fig. 1).

In Table 2 on 6 weeks follow-up, 55 patients in vaginal group and 42 patients in LSCS group did not have any complaint. Main complaint, in vaginal group, was bleeding PV and pain abdomen with 13% cases each. However, in LSCS group, most common complaint was missing thread with 38% cases followed by bleeding PV in 9% cases. The complaints in both groups were similar and the difference was not statistically significant (p=0.259). Only the percentage of patients who complaint about missing thread were statistically significantly higher in LSCS group (p=0.042).

In Table 3 on 3 months follow-up, 62 patients in vaginal group and 53 patients in LSCS group did not have any complaint. In vaginal group, the most common complaint was bleeding PV in 6 (7.31%) cases followed by pain abdomen and missing thread with 5 (6%) cases each. In LSCS group, most common complaint was missing thread with 30 (31.25%) cases followed by bleeding PV in 7 (7.29%) cases. The complaints in both groups were statistically similar and the difference was not statistically significant (p=0.806). Only the percentage of patients who complaint about missing thread were significantly higher in LSCS group (p=0.001).

In Table 4 per speculum examination at 6 weeks follow-up, significantly high numbers of missing threads were detected in intra cesarean group (35%) as compared to 10% in vaginal group, at 3 months follow-up, missing threads were detected in intra cesarean group (16.29%) as compared to 4.87% in vaginal group.

In Table 5, USG was done for confirmation of location of IUCD in vaginal group, IUCD *in situ* was seen in 91% of cases and IUCD was not seen in 9% cases. In LSCS group, in 98% cases, IUCD was found in uterine cavity and only in 2% cases IUCD was not seen in uterine cavity. At 3 months

Table 2: Distribution of cases according to complaints at 6 weeks follow-up in both the groups

Complaint at 6 weeks	Vaginal (group A)		LSCS (group B)		p-value
	No.	%	No.	%	
Bleeding PV	13	13	9	9	0.367
Vaginal discharge	7	7	3	3	0.195
Missing thread	12	12	38	38	0.005
Pain abdomen	13	13	8	8	0.250
No complaint	55	55	42	42	0.671

LSCS: Lower-segment cesarean section, PV: Per vagina

Table 3: Distribution of cases according to complaints at 3 months follow-up in both the groups

Complaint at 3 months	Vaginal (group A)		LSCS (group B)		p-value
	No.	%	No.	%	
Bleeding PV	6	7.31	7	7.29	0.775
Vaginal discharge	4	4.88	2	2.08	0.408
Missing thread	5	6	30	31.25	<0.001
Pain abdomen	5	6	4	4.16	0.734
No complaint	62	75.60	53	55.21	

LSCS: Lower-segment cesarean section

Table 4: Per speculum examination results at 6 weeks and 3 months follow-up in both the groups

Per speculum examination at 6 weeks	Vaginal (group A)		LSCS (group B)	
	No.	%	No.	%
Thread not seen	10	10	35	35
Thread seen	90	90	65	65
Per speculum examination at 3 months	**n (82)**		**n (96)**	
Thread not seen	4	4.87	25	26.04
Thread seen	78	95.13	71	73.96

LSCS: Lower-segment cesarean section

Table 5: Distribution of cases according to USG finding

USG findings at 6 weeks	Vaginal (group A)		LSCS (group B)	
	No.	%	No.	%
IUCD *in situ*	91	91	98	98
IUCD not seen	9	9	2	2
USG findings at 3 months	**n=82**		**n=96**	
IUCD *in situ*	80	97.56	94	97.91
IUCD not seen	2	2.43	2	2.08

IUCD: Intrauterine contraceptive devices

follow-up in vaginal group, out of 82 cases, IUCD *in situ* presents in 80 (97.56%) cases while IUCD was not seen in 2 (2.43%) cases. In LSCS group, IUCD presents in 94 (97.91%) cases while IUCD was not seen in 2 (2.08%) cases.

In Table 6, at 6 weeks follow-up, the rate of removal and expulsion each was higher in vaginal group (9%) as compared to LSCS group (2%). At 3 months, the rate of removal in vaginal group is 8.53% (seven cases) as compared to LSCS group, that is, 5.2% (five cases). Expulsion rate was same in both the groups.

In Fig. 2 over a period of total 3 months, the main reasons for IUCD removal in vaginal group were bleeding PV (6%) and pain (4%). In LSCS group, the main reason for IUCD removal is bleeding PV (3%) and opts to sterilization (2%).

Table 6: Outcome of IUCD in both the groups

Outcome of IUCD	Vaginal (group A)		LSCS (group B)	
	At 6 week	At 3 month	At 6 week	At 3 month
Continuation rate	82 (82%)	73 (89.02)	96 (96%)	89 (92.70%)

IUCD: Intrauterine contraceptive devices

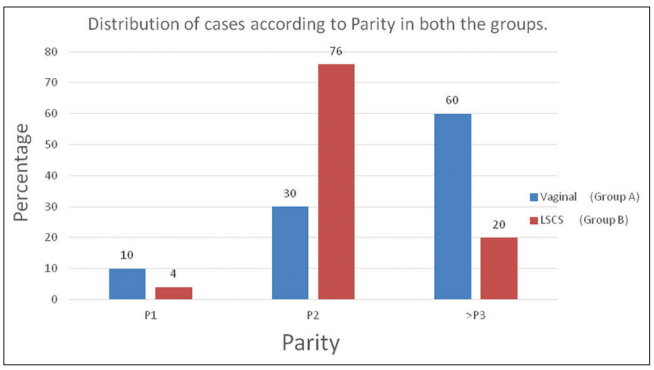

Fig. 1: Parity of study subjects

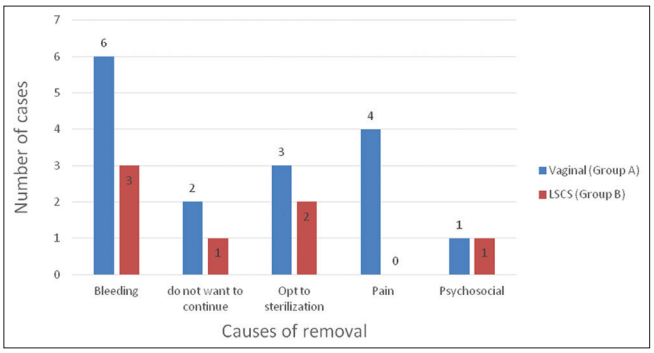

Fig. 2: Distribution of cases according to causes of removal over a period of 3 months

DISCUSSION

The need for contraception is highly warranted in our country since approximately 27% of births in India occur in less than 24 months after a previous birth. Another 34% of births occur between 24 and 35 months. Hence, the term birth-to-pregnancy interval is important which is the time period between a live birth and the start of the next pregnancy [1,10,11]. In our study, we compared immediate post-placental vaginal delivery IUCD insertion (group A) and post-placental insertion after LSCS (group B). Both groups had 100 cases in each group. The cases were followed up at 6 weeks and 3 months with set of parameters.

The mean age of acceptors in vaginal group was 26.28±4.367 years and in LSCS group it was 26.02±3.67 years. Kanwat *et al.* reported that mean age of acceptors was comparable in the both groups, being 24.42±3.79 years in vaginal and 24.20±3.42 years in cesarean group [8].

The cases were followed up to 3 months post-delivery. On 6 weeks follow-up, in vaginal group, the most common complaint was bleeding PV and pain abdomen with 13% cases each. However, in LSCS group, most common complaint was missing thread with 38% cases followed by bleeding PV in 9% cases. Chawla *et al.* reported pain abdomen (in vaginal group 16% and in LSCS group 23%) was most common compliant in both the groups [12]. Tripathi and Sahu reported bleeding PV (23% in vaginal group and 11% in LSCS group) as most common complaint at 6 weeks of follow-up in both the groups [9].

On 3 months follow-up, in vaginal group, the most common complaint was bleeding PV in 6 (7.31%) cases followed by pain abdomen and missing thread with 5 (6%) cases each. In LSCS group, most common complaint was missing thread with 30 (31.25%) cases followed by bleeding PV in 7 (7.29%) cases (p=0.806). Only the percentage of patients who complaint about missing thread were significantly higher in LSCS group (p=0.001). This is due to the curling of strings within the uterine cavity in intra-cesarean technique. The most common complaint as reported by Chawla *et al.*, out of 155, one subject (0.3%) had pain abdomen, excess bleeding PV was found in one (0.3%) [12]. Tripathi and Sahu [9] and Soni *et al.* [13] also reported excessive bleeding PV as main cause in both groups.

Per speculum examination at 6 weeks follow-up, significantly high numbers of missing threads were detected in intra cesarean group (35%) as compared to 10% in vaginal group. Our study is comparable with the study conducted by Halder *et al.* where missing tails was found in 30% cases of cesarean group and 16% cases of vaginal group [14]. USG was done for confirmation of location of IUCD at 6 weeks. In vaginal group and LSCS group, IUCD was not seen in uterine cavity in 9% cases and 2% cases, respectively, due to unnoticed spontaneous expulsion, similarly reported by Kanwat *et al.*

At 6 weeks follow-up, the rate of removal and expulsion each was higher in vaginal group (9%) as compared to LSCS group (2%). Similar to present study, Halder *et al.* found that total removal was 8% in vaginal group and 4% in intra-cesarean group. Expulsion rate was 4% in the vaginal group and 2 % in intra-cesarean group [14]. Lall and Nagar and Hooda *et al.* also found similar results [4,15].

In our study, overall continuation rate was 73% in vaginal group and 89% in LSCS group at the end of 3 months, similar to study done by Soni *et al.*, Kanwat *et al.,* and Lall *et al.*

Over a period of total 3 months, the main reasons for IUCD removal in vaginal and LSCS group were bleeding PV 6% and 3%, respectively. Similarly, Soni *et al.* and Tripathi and Sahu reported in the vaginal group, excessive bleeding per vagina was the most common cause for removal.

CONCLUSION

Immediate post-partum insertion of IUCD appears to be safe and effective method of contraception. The effectiveness of post-placental IUCD insertion after normal vaginal delivery and after LSCS is comparable and there is no major side effect after either of the procedure. The expulsion rate was slightly higher in vaginal group but the difference was not statistically significant. The feasibility of accepting PPIUCD insertion can increase with antenatal counseling and institutional deliveries. It can contribute significantly to increase the use of IUCD as a long-acting reversible contraception in Indian population.

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AUTHORS' CONTRIBUTION

All the authors have contributed equally.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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