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ORIGINAL ARTICLE

A Comparative Study of Manual *vs* Instrumental Intracesarean Postpartum Intrauterine Contraceptive Device

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ABSTRACT

Aims and objectives: The main objective of the study was to compare the two different methods of intracesarean insertion of postpartum intrauterine contraceptive device (PPIUCD), i.e., manual *vs* instrumental, and to study the effectiveness, safety, and continuation rate of intracesarean PPIUCD as a contraceptive method.

Materials and methods: A total of 100 subjects undergoing lower (uterine) segment cesarean section (LSCS) were enrolled for the study. In group I (n = 50), Cu-T 380A was inserted manually and in group II (n = 50), Cu-T 380A was inserted with a PPIUCD forceps. After checking for the inclusion and exclusion criteria and proper counseling, written consent was obtained and subjects were enrolled for the study. All the subjects were followed up for 3 months either clinically or telephonically. All the complaints, side effects, complications, and findings of both the groups were compared and analyzed.

Results: The continuation rate after the period of follow-up was 94% in group I and 92% in group II. There was only one case (2%) of expulsion in group II. A total of 3 (6%) subjects in group I and 3 (6%) of the subjects in group II got PPIUCD removed for various reasons. There was no case of infection, perforation, or contraceptive failure.

Conclusion: Intracesarean PPIUCD is an effective method of postpartum contraception and both the methods (manual and instrumental) are equally effective with minimum side effects and complications and good acceptability by the clients.

Keywords: Intracesarean, Postpartum, Postpartum intrauterine contraceptive device.

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INTRODUCTION

The population of India is 121 crore as per the 2011 census. India contributes to about 20% of births worldwide.[1] By 2050, India's population is projected to be 1.69 billion, and India is expected to be the world's most populous nation overtaking China.[2] Approximately 61% of births in India and developing countries occur at intervals shorter than the recommended birth-to-birth interval of 36 months.[3] Every year, 80 million unintended pregnancies occur worldwide, and more than half of these pregnancies – nearly 46 million – are terminated (26 million legally and 20 million illegally).[4] Unsafe abortion is one of the most common causes of maternal morbidity and mortality. Worldwide, about 13% of the pregnancy-related deaths have been attributed to complications of unsafe abortions.[5] A woman who becomes pregnant too quickly following previous birth faces risks of anemia, abortions, premature rupture of membranes, preterm labor, intrauterine growth restriction, fetal loss, postpartum hemorrhage (PPH), and increased maternal and neonatal mortality.[6]

The postpartum period presents an excellent window of opportunity to provide family planning counseling and methods. Therefore, access to safe and effective contraceptive services in the postpartum period is of utmost importance to prevent unwanted/mistimed pregnancy and unsafe abortions and control population.[7] Among the various postpartum family planning methods, Cu-T is the most effective, long-acting, and reversible method of contraception.[8]

Postpartum intrauterine contraceptive device (PPIUCD) is a method of contraception in which IUCD is inserted immediately following delivery of placenta.[8] Cu-T can be inserted immediately (within 10 minutes) following placental delivery (postplacental), during cesarean section through the uterine incision after delivery of placenta and before closing the incision (intracesarean), and within 48 hours of delivery prior to discharge from the postpartum ward (immediate postpartum). The specific advantages of insertion of PPIUCD are as follows:

- Certainty that a woman is not pregnant.
- Convenient for the woman. It is readily accessible to women who deliver at health care facilities.

- High motivation present among the woman and her family for a birth spacing.
- Single decision leads to highly effective, immediate, reversible, and long-term prevention of pregnancy.
- Reduced perceptions of initial side effects – bleeding and cramping.
- Reduced chances of heavy bleeding, especially among lactational amenorrhea method users, since they experience amenorrhea.
- No effect on amount or quality of milk.
- No interference with sexual relations and immediate return to fertility after removal.[8]

AIMS AND OBJECTIVES

- To compare and examine the effectiveness of two different methods of insertion of intracesarean IUCD, i.e., manual and instrumental.
- To study the effectiveness, safety, and acceptability of intracesarean PPIUCD as a contraceptive method.

MATERIALS AND METHODS

The study was an open, experimental, and prospective study conducted in the labor room of the Department of Obstetrics and Gynecology, Government Medical College, Patiala, Punjab, India. A total of 100 women undergoing cesarean section were enrolled for the study after proper counseling and taking written consent during the period from 2013 to 2014.

Inclusion Criteria

- All antenatal women admitted in hospital and undergoing cesarean section.
- Willing to have insertion of PPIUCD and come for follow-up.

Exclusion Criteria

- Prolonged premature rupture of membranes >18 hours
- Chorioamnionitis
- Unresolved PPH
- Uterine malformations
- Distorted uterine cavity

The clients for study were divided into two groups of 50 women each:

- Group I – Cu-T 380A was inserted manually.
- Group II – Cu-T 380A was inserted using PPIUCD forceps.

Postinsertion counseling and advice were given to each woman.

Follow-ups were carried out at:

- 6 weeks
- 12 weeks

Any complaint, side effects, and complications regarding PPIUCD were compared and data were analyzed statistically by applying chi-square test and Student's t-test (p-value < 0.05 is significant).

OBSERVATIONS AND RESULTS

All the clients in both the groups were comparable and did not have any significant difference in terms of age, parity, educational status, previous IUCD used, and time of counseling (Table 1).

The counseling was done during antenatal visits, early labor, or while preparing for cesarean section (Table 2).

All the clients were followed up at 6 and 12 weeks either by clinic visit or telephonically. A total of 26 (52%) patients from group I and 22 (44%) from group II were contacted telephonically, while 24 (48%) cases from group I and 28 (56%) from group II came to the clinic for follow-up. The majority of the clients had no complaint (82% in group I and 80% in group II), and they were satisfied with the method of contraception.

The most common complaint was bleeding per vagina (P/V), followed by request for removal, pain in abdomen, irritation by threads, discharge P/V, and backache. All the complaints were similar in both the groups and statistically not significant (Table 3).

Table 1: Demographic features

Demographic features	*Group I (n = 50)*	*Group II (n = 50)*
Mean age	24.72 years	24.50 years
Primipara	36%	44%
Multipara	64%	56%
Education status (Educated)	80%	86%
Previous IUCD used	2%	6%

Table 2: Time of counseling

Time of counseling	*Group I Manual (n = 50)*	*Group II Instrumental (n = 50)*
Antenatal checkup	13 (26%)	15 (30%)
Early labor	17 (34%)	15 (30%)
While preparing for elective LSCS	20 (40%)	20 (40%)

Table 3: Complaints of clients at 12 weeks' follow-up visit

Complaints	*Group I Manual (n = 50)*	*Group II Instrumental (n = 47)*
No complaint	41 (82%)	38 (80%)
Bleeding P/V	5 (10%)	4 (8.5%)
Pain in abdomen	1 (2%)	2 (4.2%)
Discharge P/V	1 (2%)	1 (2.1%)
Thread irritation	2 (4%)	1 (2.1%)
Request for removal	4 (8%)	3 (6.3%)
Any other	Nil	1 (2.1%)
p-value	0.930, not significant	

Group II: Expulsion – 1, removal – 2 prior to 12 weeks, n = 47

Table 4: Reasons for removal

Reason for removal	*Group I Manual (n = 50)*	*Group II Instrumental (n = 50)*
Pain	Nil	1 (2%)
Bleeding	2 (4%)	2 (4%)
Displaced/partially expelled	1 (2%)	Nil
Personal reasons	Nil	Nil
Total	3 (6%)	3 (6%)
p-value	0.368 not significant	

During the first visit, on local examination, Cu-T threads were visible only in 37.5% in group I and 35.7% in group II. On subsequent visits, threads were visible in majority of the clients, 77% in group I and 78% in group II. We also observed that Cu-T threads descend early in those clients who were in active labor prior to undergoing LSCS than those who were not in labor.

There was only one spontaneous expulsion from group II and none from group I. Six of the clients got their Cu-T removed during follow-up period, three clients from each group. The main reason for IUCD removal was bleeding P/V, followed by pain in abdomen and displaced Cu-T. The reasons from each group were similar and statistically not significant (Table 4). There was only one case of displaced Cu-T in group I and none in group II. No case of infection, perforation, or contraceptive failure was reported over the 3-month follow-up period in any of the clients from both the groups.

Overall continuation rate over a period of 3 months was 93%. The continuation rate was 94% in group I and 92% in group II (Graph 1).

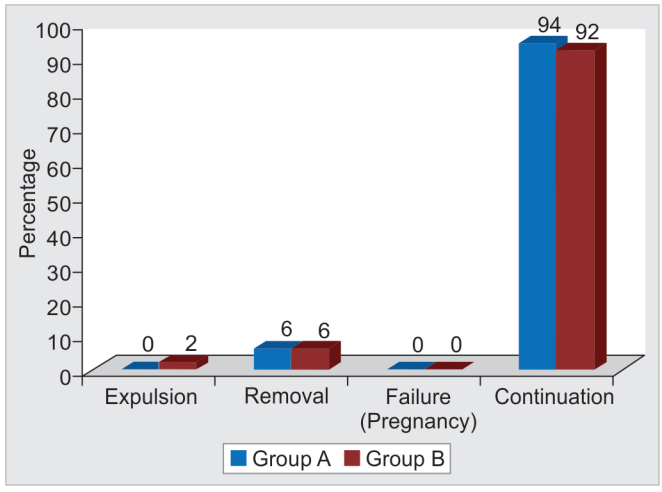
At the end of the follow-up period, all the clients continuing with Cu-T were satisfied with their chosen method of contraception.

DISCUSSION

Various studies on PPIUCD, both postplacental and intracesarean, have used ring forceps or PPIUCD (Kelly's forceps) for IUCD insertion.

Xu et al[9,10] and Gupta et al[11] had compared and studied the two techniques of insertion of IUCD, i.e., manual *vs* instrumental insertion. They found no significant difference between both the insertion techniques. There were no differences observed in respect to various events like side effects, complications, and expulsion, removal, and continuation rates in comparison of the two insertion techniques in the present study also.

In the present study, the cumulative side effects/complications from both the groups are comparable to the study done by Shukla et al[12] and Gupta et al.[11] The



Graph 1: Continuation rate of intracesarean PPIUCD

expulsion rate in our present study was only 2% from group II and none in group I, which was comparable to the study done by Müller et al,[13] Levi et al,[14] and Khatun.[15] The main reason for removal of IUCD was continuous or irregular bleeding P/V, which was 4% in both the groups and similar to the study done by Çelen et al,[16] followed by pain in abdomen (2%), displaced IUCD (2%), and personal reasons. There was no perforation, no infection, and no failure in both the groups in the present study, which was comparable to various studies done by Çelen et al,[16] Shukla et al,[12] Khatun,[15] Xu et al,[9] and Gupta et al.[17] There was a small infection rate of 1.3% recorded by Gupta et al[11] and 5% by Nidhi et al.[18]

The clients from both the groups were highly satisfied by the contraceptive method they were using and showed high continuation rates of PPIUCD of 94% in group I and 92% in group II at the end of 3 months.

CONCLUSION

From the present study, we concluded that PPIUCD is a very good contraceptive method, especially in intracesarean cases, as subsequent early pregnancy may prove to be highly risky in these cases.

The side effects, complications, and expulsion rates between the two different methods of insertion (i.e., manual *vs* instrumental) were statistically similar (p-value > 0.05).

Very few women reported dissatisfaction with the IUCD, and the continuation rate in both the groups was very high and statistically similar. Therefore, either of the methods may be used effectively for postpartum insertion of IUCD. As PPIUCD forceps may not be available at all the centers and manual insertion has no economic implications for purchasing and maintenance of equipment, manual insertion technique should be done wherever PPIUCD forceps are not available.

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