Original Article

Intracaesarean Intrauterine Contraceptive Device: A Window of Opportunity for Unmet Need

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ABSTRACT

Background: Among the various contraceptive devices, Intrauterine Contraceptive Device (IUCD) is one of the safest method during post-partum period is also known as post-placental IUCD (PPIUCD). Due to fear it is not used as much as expected. Therefore, to evaluate the outcome of IUCD insertion during caesarean section was the objective of the study.

Methods: This hospital based prospective study and was conducted at the inpatient department of Obstetrics and Gynecology in Sir Salimullah Medical College (SSMC) and Mitford Hospital (MH). For this study, data was collected form total 150 women by the investigators. Collected data was analysed by computer with the help of SPSS 16.

Results: More than half of the women (57.3%) were aged between 20-25 years. About 65% resides in rural area. Most of them had an education level below higher secondary (85%). Among them about one third (35.4%) patients were gravid for the 2nd time, and about one third (31.3%) patients were 3rd time. Majority of the women (n=83, 55.3%) were comfortable with PPIUCD at 6 weeks follow up and no expulsion was reported at time. At 3 months follow up, 81.3% women did not report any complications and thread was not found in 65 patients. Total 5.33% women removed IUCD. Eighty six percent were happy with PPIUCD as a method of contraception.

Conclusion: It can be concluded that overall Intracaesarean IUCD insertion appears safe and effective.

Key words: Intrauterine Contraceptive Device, Caesarean Section, Contraception, IUCD

INTRODUCTION

Post-partum period is very vulnerable for mother and they do not desire a pregnancy at this period. The women undergoing caesarean section need effective long-term contraception. An estimated 12% of sexually active Bangladeshi women are identified as having an unmet need for family planning.[1] This means they express a desire to either limit or space future births but are not currently utilizing any family planning methods. During the post-partum period women are clearly non pregnant and highly motivated to initiate long acting contraceptive method. Intra Uterine Contraceptive Device (IUCD) is the most widely used reversible form of contraception, with 100 million estimated users worldwide.[2] Post-placental IUCD (PPIUCD) should be inserted only after counseling the woman, preferably during the antenatal period or in early labor. The insertion of PPIUCD can occur during a cesarean delivery, following the removal of the placenta and before closing the uterine incision. Insertion should be conducted either manually or with the aid of a long instrument, such as placental forceps, to ensure that the IUCD is positioned at the fundus, as high as possible, to minimize the risk of expulsion.[3] In comparison to other contraceptive methods, early postpartum IUCD insertion offers numerous advantages. It offers immediate contraception without disrupting breastfeeding and may help avoid discomfort associated with insertion. Inserting an IUCD immediately after placental removal has not been linked to increased infection, uterine perforation, postpartum bleeding, or uterine subinvolution.[4] In a Cochrane Collaboration review comprising nine randomized controlled trials (RCTs) evaluating the

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viability of immediate PPIUCD insertion, it was revealed that the procedure was safe and effective. However, expulsion rates were observed to be higher for immediate postpartum insertion compared to interval insertion. Consequently, women undergoing immediate postpartum insertion require early follow-up appointments along with self-examinations to check for the presence of the strings and detect any spontaneous expulsions.[5] However, the benefits of offering highly effective contraception immediately after delivery outweigh the disadvantages. This study was conducted to explore the potential outcomes of Copper-T380a insertion following a cesarean section.

METHODS

Prospective follow up study was conducted in Department of Obstetrics & Gynaecology of Sir Salimullah Medical College and Mitford Hospital, Dhaka from 1 July 2017 to 31 December 2017. All pregnant women at term, admitted for caesarean section to SSMC and MH during the study period were approached for the study. Our inclusion criteria were- 1) Delivery by caesarean section at term, 2) Women willing for Copper- T insertion and its follow up, 3) Women satisfying the WHO MEC criteria for postpartum IUCD insertion. And exclusion crireria were- 1) Prolonged rupture of membrane longer than18 hours, 2) Chorioamnionitis or puerperal sepsis, 3) Prolonged labour & obstructed labour, 4) Uterine abnormalities/fibroid, 5) Unresolved postpartum haemorrhage.

Total 352 women were approached for PPIUCD. Among them 150 women accepted PPIUCD. In all cases ethical issues was considered properly and following written informed consent all women were interviewed by a structured questionnaire. Follow up was done in two times at 6 weeks and at 3 months. During follow up clinical history and physical examination were focused about any complication, expulsion, visibility of strings, and any unusual phenomenon. Ultrasonogram was done whenever it was necessary. Following interview, physical examination and investigation (USG) data were collected by using a structured questionnaire. Monthly income of <5,500 taka was considered as below average, 5,500-11,500 taka as average and >11,500 taka as above average.

RESULTS

Acceptance rate 42.6%. About half of the participants (57.3%) had their age between 20-25 years. one third (31.3%) women had age in between 26 to 31 years and 11.4% women had age of more than 32 years. Majority came from rural area (65%), rest of the women were staying at urban area. Forty two percent of the patients had education up to secondary school level. Fifteen percent completed SSC, 30.7% studied up to primary level and 12% were illiterate. About half of the patients (55.3%) in this study had an average socio-economic condition.

Table 1. Practice of contraception before present pregnancy (n=150)

Methods used before	Frequency	Percent
No method	24	16
OCP	53	35
Emergency pill	08	5.4
Condom	17	11.4
Injection	27	18
Implant	07	4.8
IUCD	03	2
More than one method	11	7.4
Total	150	100

Twenty seven percent patients had come from below average income family and 17.4% patients had above average status. About two-third of the patients (71.3%) were housewives, rest were self-employed. Nineteen percent patients were primi gravida, 35.4% patients were gravid for the 2nd time, 31.3% patients were gravid for the 3rd time, 14% patients were gravid for the 4th time and above. Among the women only 18 had prior idea about PPIUCD insertion.
About one-third of the participants (35%) took OCP as method of contraception, 2% women used IUCD, and 16% women never used any method. Table 1 shows the details.

Table 2. Distribution of study population depending upon the reason for choosing PPIUCD (n=150)

Why interested in PPIUCD	Frequency	Percent
Safe	12	08
Long acting	37	24.7
Reversible	23	15.4
Don't need to remember	34	22.7
Doesn't interfere with breast feeding	13	8.6
No hormone-related side effect	09	06
Fewer routine clinic visit	17	11.3
Others	05	3.3
Total	150	100

Study sample was inquired about reason for choosing PPICUCD. About one-fourth women showed interest about PPIUCD due to its long acting action, another one-fourth due to convenience that there is no need to remember daily. See table 2.

Table 3: Complications/ Compliance of Intracaesarean IUCD insertion of patients followed up at 6 week.

Complications	Follow up at 6 week	Follow up at 3 months
No complication	83 (55.3)	122 (81%)
Excessive bleeding	21 (14%)	4 (2.7%)
Spotting	4 (2.7%)	3 (2%)
Pain	17 (11.3%)	7 (4.7%)
Infection	4 (2.7%)	1 (0.7%)
Expulsion	Nil	2 (1.3%)
Mucoid discharge	15(10%)	Nil
Uterine perforation	Nil	Nil
Pregnancy	Nil	Nil
Not followed up	6 (4%)	11 (27.6%)
Total	150 (100%)	150 (100%)

About half of the patients (55.3%) were comfortable with PPIUCD at 6 week's follow up and did not report any discomfort or complication. At 3 month's follow up, 81% women had no complication or complaint.

Table 4: Visibility of thread of Cu-T at follow-up at 6 week and 3 months

	At 6 weeks	At 3 months
Not seen	67(44.67%)	65(43.35%)
Seen	77(51.33%)	72 (48%)
Did not come for follow up	6 (4%)	11 (7.35%)
Expulsed previously	-	2 (1.3%)
Displaced previously	-	Nil
Total	150 (100%)	150 (100%)

There was two cases of expulsion. Seven women complained of pain and eleven women did not come to follow up. Table 3 describes in details about it.

On speculum examination at 6 week follow-up, thread was not seen in 67(44.67%) patients.These 67 patients, who were in the group of "thread-not seen" at 6 week, were advised to perform pelvic ultrasound scan. IUCD was found in-situ in 58 patients and nine patients did not undergo pelvic sonogram. At 3 month's follow-up, in 66 patients (43.35%) thread could not be seen on speculum examination and 2 woman had history of expulsed IUCD (Table 4).

All 65 patients, who were in the group of "thread- not seen" at 3 month, were advised to perform pelvic USG. IUCD was found in-situ in 63 patients and expulsion was confirmed in 2 patients.

Table 5: Expulsion rate of PPIUCD

Expulsion	After LUCS (n=150)
At 6 week	Nil
At 3 month	2 (1.3%)
Total	2 (1.3%)

Among 150 women, 2 women reported expulsion in the three month's follow-up period, that is expulsion rate of intracaesarean IUCD in this study is 1.3% which were confirmed at 3 month's follow-up by pelvic USG. Table 5 shows the expulsion rate.

Table 6 : Reason and rate of post placental IUCD removal

Excessive PV bleeding	4 (2.7%)
Pain in abdomen	3 (2%)
Infection	1 (.63%)
Total	8 (5.33%)

Among 150 patients, 8 (5.33%) removed IUCD for various reasons; among them P/V bleeding was the most common cause. Table 6 shows the details.

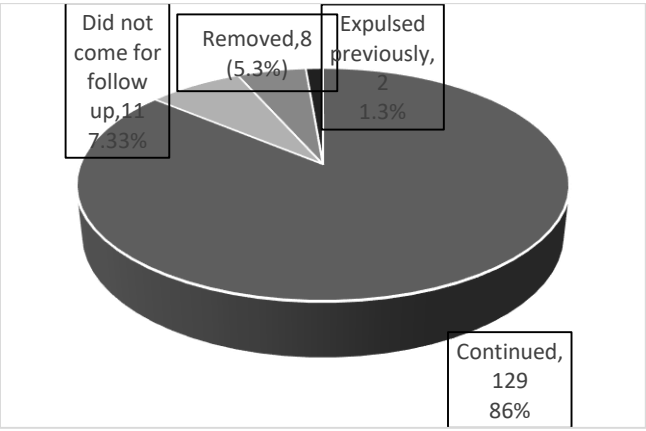

Figure 1. Continuation rate of intracaesarean IUCD (n=150)

This pie diagram shows that out of 150 cases followed up after 3 months, 130 were happy with intracaesarean IUCD as a long term method of contraception and continuation rate is 86%.

DISCUSSION

In our study total acceptance rate of PPIUCD was 42.6% where few years ago a large series in tertiary care hospital of India found total acceptance rate was 46.27%.[6] This is probably due to similar social and cultural background of two neighboring countries.

Acceptance rate varies between urban and rural women. Katheit G et al. also found that a little difference in acceptance rate of PPIUCD between rural (47.6%) and urban (52.4%) women.[7] This difference is noted as urban women have relatively easy access to other methods of contraception.

We have found about half of our participants were in between 20-25 years of age, that is very similar to study of Singh S et al.[6] and Katheit G et al.[7] This indicates that there is a

tendency to delay subsequent pregnancy in younger age group.

In present study, primi or multigravidas (4th gravida and onwards) showed less interest in PPIUCD. And interestingly, women having 2nd and 3rd gravida were more interested for PPIUCD. This may be due to the fact primiparas did not ready to accept PPIUCD as they didn't want long term interal (10years) for birth spacing. Multigravidas prefer permanent contraceptive methods. This findings is consistent with the studies conducted by Grimes D et al., Mishra S and Kumar S et al. where they found higher acceptance in multiparous clients (65.1%), (54.72%) and (53%) respectively.[5,8,9]

Oral combined contraceptive pill was the most widely used method into our participants. Very few heard about PPIUCD. Also women who knew about PPIUCD had many misconceptions and myths about it like it affects lactation, non-reversible method, cause pain and heavy bleeding, hinders during coitus etc. During the study these misconceptions were cleared up and women were educated, counselled and motivated about IUCD along with providing PPIUCD insertions.

Majority of the women in this study who accepted intracaesarean IUCD had education upto secondary school level. This is because most of the patients in govt. hospitals of our country are from below average economic condition, thus their literacy level was low. Similar study was done by Singh S et al.[6] The study showed that acceptance of PPIUCD was higher among women with primary and secondary school level (65.16%) than those with formal or higher education (18.36% and 16.46%). Mishra S also found that PPIUCD use was higher among women with primary and secondary education (28.56 % and 13.88), than those with no formal or higher education (7.75 and 8.21 %).[8] Another study done in Egypt where women with no formal education had an acceptance of 9.4 %, while those with formal education were 19.4 %.[10] This finding confirms education renders people more receptive to new ideas and practices of spacing methods, and importance of small family norms. Educational status plays a major role in fertility control in a population. Choudhary et al. found secondary and higher education influenced contraceptive use.[11]

About half of our participants had average family income. This is because our govt. hospitals provide free of cost medical services and the affluent peoples seek medical services mostly in private hospitals and clinics. In the study of Mishra S 64.72% and 30.82% were from below and average income group respectively.[8]

Mishra S showed in her study, most of the participants (49.29%) trusted their doctor's advice for accepting PPIUCD, 36.88% women agreed for no remembrance, 17.91% chose it for reversibility, 18.44% found it safe and 9.04% accepted it for being safe.[8] The findings of the present study are quite comparable to that study.

In the present study complications like pervaginal bleeding experienced by the patients were similar to the other studies of Singh Set al.[6] and Katheit G et al.[7] who reported 15.70% and 10.5% bleeding respectively.

Pain abdomen was reported in 11.3% patients. There is a vast difference in the percentage of patients reporting pain in various studies ranging from 43.8% to 8%. However, present study correlates with study by Katheit G et al who reported 12.9%.[7]

Irregular spotting was reported by 2.7% patients, mucoid vaginal discharge was found in 10% patients who were subsequently treated for vaginitis and 2.7% patients suffered from pelvic infection. There was no case of PPIUCD expulsion,uterine perforation or pregnancy. During 3 month follow up, there were fewer number of complications (11.4%). Thread were not seen in 44.67% and 43.35% of cases at 6 week and 3 month follow up respectively. It poorly correlate with studies by Sudha CP et al. (23.3%)[12], Kittur S. et al (24.76%)[13], Gunjan Goswami (20%)[14] missing strings.

USG was advised for all the cases of missing IUCD strings and IUCD was found to be in situ in 58 and 63 patients at 6 week and 3 month follow up respectively and nine patients did not undergo pelvic ultrasonogram at 6 weeks follow up. Expulsion rate of intracaesarean IUCD in the present study was 1.3% during 3 months follow up which almost correlates with the study of Sudha CP. et al (3.33%)[12] and Kumar S. et al (4%)[9] but much lower than Singh S. et al (10.63%)[6]. Katheit G. et al (8%)[7] and Mishra S (8.99%)[8]. Tranceserean Insertion is known to have lower rates of expulsion at 1.2% compared to vaginal 9.6% in a study done in China by Chi IC et al.[4] Such low rate were reflected in our study having expulsion rate of 1.3%, whether this very high retention rate relates to the direct visual fundal placement by the surgeon or to the undilated cervix at the time of elective cesarean is unclear. It is to be mentioned here during insertion high fundal placement is an important step.[7] A Cochrane database of systematic reviews 2003 reports an expulsion rate of 2.4 to 5.2% by the end of first year.[5]

No cases of uterine perforation or pregnancy with IUCD-in-situ were reported during the study that is very similar to other studies.[15,16] The continuation rate in this study was 86% which matches with the study by Mishra S (81.11%)[8], Singh S. et al. (81.62%)[6] and Sudha CP. et al (88.3%)[12], but lower than Jamkhandi SS et al. (95%)[17] and higher than Katheit G. et al.(63.22%)[7].

CONCLUSION

Overall intracaesarean IUCD insertion appears safe and effective long-acting reversible contraceptive method. Intracaesarean intrauterine insertion of IUCD has no significant level of complication. And very few expulsion rate.

Limitation of the study

- This was a single centered study.
- Sample size was not big.
- Long time follow up was not considered
- Some patients had to be followed up on phone.

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