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Original Research Article

Safety and Efficacy of Intra-caesarean IUCD: A Prospective Study at Darbhanga Medical College & Hospital, Laheriasarai, Bihar

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Abstract:

Background: This study examines the factors responsible for acceptability of the post placental Intracaesarean insertion of IUCD among the clients in the study and evaluates the safety and efficacy and occurrence of complications like bleeding, missing strings, infection, pregnancy and expulsion and their incidence of occurrence after a follow up of 6 months post insertion.

Aim: To assess the acceptability, efficacy, feasibility and safety of IUCD insertion immediately after expulsion of the placenta in a caesarean section.

Methods: We have conducted a study on 400 patients delivering by caesarean section at our hospital (Darbhanga Medical College & Hospital, Laheriasarai, Bihar). After taking informed consent and explaining the patients about the advantages and limitations, we have succeeded in inserting intrauterine device cu-t380A and cu-t375 randomly, (based on availability at that time, but in most cases cuT 380 was used) immediately after expulsion of placenta in patients delivering by caesarean section in 400 patients and followed up the patients at 2-6 weeks and 6 weeks – 6 months period to evaluate the safety, efficacy and complications occurring and their incidence of occurrence.

Results: Total women counseled were 510, Accepted in 408, Declined in 102. Intrauterine cesarean insertion was done in 400 patients and deferred in 8 patients due to post-partum hemorrhage. Out of 400 patients, 55 patients lost to follow up, Removal rate was 32 and continued in 291. The total complications are 130 (Expulsion 22, Bleeding 38, Strings not visible 65, Infections 5, Pregnancy 0). These results were comparable to other national and international studies.

Conclusion: Advantages of immediate post-partum insertion include high motivation, assurance that the woman is not pregnant, and convenience. However, expulsion rates appear to be higher than with interval insertion. Early follow-up may be important in identifying spontaneous IUD expulsions.

Keywords: Intracaesarean, IUD, cuT 380.

Introduction

Unintended pregnancies carry negative feto-maternal con-sequences, rates of which vary from 38 to 64% worldwide. In a study, there was an estimated rate of 144.7 pregnancies per 1000 women aged 15–49 years and 70.1 unintended pregnancies per 1000 women aged 15–49 years. Abortions accounted for one-third of all pregnancies, and nearly half of pregnancies were unintended.

As the delivery of postpartum contraception is limited particularly the time and type, so there is a need to give women some form of contraception before her discharge from the hospital after child birth. The PPIUCD services in India started in 2009 and rapid expansion took place in 2012. The government policy in India is mainly focussing on spacing methods. Immediate postpartum IUCD insertion during caesarean section provides long-term contraception with minimal discomfort to the woman. In a controlled trial, comparing PPIUCD insertion at caesarean section with non-intervention controls, few complications were reported, and no difference was found in puerperal morbidity or infection. So we did prospective study in our centre to evaluate the efficacy and complications of intra-caesarean PPIUCD insertion.

IUCDs work primarily by preventing fertilization, and do not act as abortifacients. When the uterus is exposed to an IUCD, a sterile inflammatory reaction occurs, which is toxic to sperms and

impairs fertilization. The production of cytotoxic peptides and activation of enzymes lead to inhibition of sperm motility, reduced sperm capacitation and survival.cu-t has life span of 5 years and cu-t 380 has life span of 10 years

Methods and Material

The study was conducted from January 2018 to May 2019 at Darbhanga Medical College & Hospital, Laheriasarai, Bihar. 510 patients who were due for elective/emergency caesarean section were counselled for post placental IUCD insertion, out of which 408 patients accepted. Informed written consent was taken by explaining the advantages and limitations of the method. Weused both cu-t375 and cu-t380 based on availability in labour room. Both IUCD are supplied by Govt. Intracaesarean insertion was done in 400 patients and deferred in 8 patients due to postpartum hemorrhage.

Follow-up: The patients inserted with the IUCD were followed up at 2-6 weeks and 6wks-6months period either on phone or on clinical visit and the safety and efficacy evaluated along with the documentation of occurrence of complications.

Inclusion Criteria

1. 20-35 yrs. Old
2. Delivering by caesarean at term gestation.
3. No infections
4. No postpartum haemorrhage
5. Hb>9g%.
6. Patients satisfying the WHO MEC criteria for IUCD insertion.

Exclusion Criteria

1. Fever
2. STDs
3. Ruptured membranes for more than 24 hours before delivery.
4. Uterine abnormalities.
5. Manual removal of placenta.
6. Unresolved postpartum hemorrhage.

Intracaesarean insertion technique

Insertion can be done either manually or using a ring forceps since the provider can easily see and reach the uterine fundus. Aseptic precautions are critical to prevent infections during post caesarean insertion of IUCD. The provider should hold the IUCD between the middle and index fingers of the hand and pass it through the uterine incision. Once it is placed at the fundus, the hand should be slowly withdrawn, noting whether the IUCD remains properly placed. The strings can be pointed towards the cervix but should NOT be pushed through the cervical canal. This is to prevent uterine infection by contamination of the uterine cavity with vaginal flora, and to prevent displacement of the IUCD from the fundus by drawing the strings downward toward the cervical canal. [2]. Care should be taken during closure of the uterine incision that the strings of the IUCD do not get included into the suture.

Later after insertion IUCD client card showing type of IUCD and the date of insertion were prepared. She was informed about the IUCD side effects and normal postpartum symptoms. Women were informed to return for IUCD follow-up at the outpatient department. She was advised to come back if she had noticed any of the following symptoms:

1. Foul smelling vaginal discharge.
2. Lower abdominal pain.
3. Fever.
4. Symptoms of pregnancy.
5. Suspicion of expulsion of IUCD.

Client card was provided for assessment for client comfort. Counseling done regarding possibility of irregular bleeding pattern and cramping pain in the first 6 months.

Results

Table 1: Parity of patients in study group

Paraty	No.	%
Primiparous	267	66.75
Multiparous-2	125	31.25
3	8	2.5
4/>4	0	0

Table 2: Timing of counseling done in the acceptors

Counselling	No.	%
Antenatal	110	26.96
Intrapartum	298	73.03

Table 3: Age group of patients included in the study

Age	No.	%
<19	86	21.5
20-29	274	68.5
30-39	40	10
>=40	0	0

Table 4: Reasons for acceptance among the parturients included in the study

Reason for Acceptance	No.	%
Long term	50	12.5
Safe	90	22.5
Fewer clinical visits	10	2.5
0 No influence in breast feeding	120	3o
Non-hormonal	12	3
One time procedure	330	82.5
reversible	306	76.5

Table 5: Total number of Insertions in Emergency and Elective Caesarean section:

Type of LSCS	No.	%
Elective	272	68
Emergency	128	32

Table 6: Complications at Follow-Up

Follow-Up (No.)	Expulsion (%)	Bleeding (%	Strings Not Visible (%)	Infection (%)	Pregnancy (%)
2-6 Week	20(90.90)	32(84.21)	60(92.30)	4(80)	0
6week-6month	2(9.09)	6(15.78)	5(7.69)	1(20)	0

Table 7: Incidence of occurrence of complications (out of 345)

Complication	No.	%
Expulsion	22	6.37
Bleeding	38	11.01
Strings Not Visible	65	18.84
Infection	5	1.44
Pregnancy	0	0

Table 8: Continuation rate in the study (out of 345)

Continuation rate	NO.	%
Expulsion	22	6.37
Removal	32	12.17
Continuation	291	84.34

Table 9: Expulsion rate

No. Of Cases	Elective(287)	Emergency(113)
Expelled	7	15
Not Expelled	280	98

In our study most of the emergency cases were taken up in active labour, hence expulsion rate is more in them when compared to elective insertions

Table 10: Post insertion bleeding

No of cases	Elective(287)	Emergency(113)
Bleeding present	17	23
Bleeding absent	270	90

Post insertion bleeding is more in emergency insertions.

Table 11: Visibility of strings

No. of cases	elective	emergency
Strings not seen	41	24
Strings visible	246	89

Discussion: The importance of having healthy spacing of pregnancy in India is emphasized by the fact that approximately 27% of births occur in less than 24month after previous birth [3]. The postpartum period provides opportunity to the health care provider for counseling a woman, regarding the available family planning methods, including IUD insertion, to avoid unintended conceptions. It is observed that women who have been counselled for postpartum IUCD insertion have 10 times higher chance of using IUCD, than those, where insertion was delayed till complete involution of the uterus[8]. The intrauterine device is an effective long lasting and reversible method of birth control[1,2,3]. The insertion of IUCDs is now gaining popularity as a method of postpartum contraception worldwide.

The Indian Government is also focusing programmatic attention to postpartum IUCD insertion. Immediate post placental IUCD insertion (PPIUCD) during caesarean section provides a good opportunity to achieve long term contraception with minimal discomfort to the women [7]. It is being increasingly practiced after reported safety and lower expulsion rates following Intracaesarean IUCD insertion [9,10]. In this study, majority of the women (66.75%) were primipara who had at least primary level of education.

The most common complications occurring in the patients included in this study was non-visibility of strings(18.84%) which was most commonly seen at follow-up at 2-6wks(92.30%) and is most commonly due to coiling of the string at the cervical canal which was demonstrated to them on outpatient basis. Few patients needed to get an Ultrasound done for the confirmation of IUCD in uterine cavity and they were found to be in situ. The patients were reassured and sent back for a follow up at a later date. At follow-up at 6wks to 6 months the incidence was 7.69%. Bhutta et al., reported string visibility of 92% and 96% at six months after intracaesarean and interval insertion, respectively [4]. Ergoglu et al., reported missing strings rate of 3.3% and 7.8% at six months and 12 months after postpartum IUCD insertion, respectively.

The higher cases of missing strings in the present study could be because of the use of Copper T 380 A in most of the cases that has shorter string Lakshmi Garuda et al. Clinical Outcome of PPIUCD (Copper-380A)-Intracaesarean Insertion Indian Journal of Obstetrics and Gynaecology Research 2015;2 (4):218-226 225 compared to Multiload 375 inserted in the study by Bhutta et al. Other complications the patients presented with included bleeding (10.41%), expulsion (6.25%), pelvic infection (2.08%) and pregnancy (0%).

The expulsion rate was highest (90.9%) at follow-up at 2- 6wks. According to Multicentric International study done in Belgium, Chile and Phillipines which showed the rate of expulsion at one month ranging from 4.6- 16%[19]. One recent Study from Turkey of Postpartum Intracaesarean insertion reported an expulsion rate of nearly 18%[20]. 80% expulsions happen in first 3 months according to Thiery M, et al; Contraception Apr 1985. According to an ICMR study on urban women, pelvic pain is a common symptom reported in 25% users following interval IUCD insertion [1]. All women diagnosed with pelvic infection in the present study, were treated successfully with antibiotics. According to Ethiopian Multicentric study [17], 42% of PPIUCD insertions were followed up after 6wks and the results were 97%-Continuation rate. 2.3%-Expulsion rate. 9.16%-Removal rate. Infection Rate-Negligible. Experience from India (Jhpiego, New Delhi) [16]-Revitalization of PPIUCD services-At 6wks Post partum 90%-Continuation rate. 3.2%-Expulsion rate.4.5%-Infection rate.7%-Removal rate.

The cumulative removal rate was 12.17% and continuation rate with or without complications was 84.44%. There were no cases of unintended pregnancies in this study. These observations are similar to the previously reported cumulative pregnancy rate of less than 1/100 women within one year of use [2,3]. All the complications and side effects are comparable to all national and international studies.

Global changes in the thinking about IUCD and resurgence of interest in the IUCD are in view of:-

1. Accessibility and convenience of using Intracaesarean IUCD. Postplacentalintracaesarean Copper T 380A insertion in primiparous women is a safe and effective method of reversible contraception, with low expulsion and high continuation rates.[11].
2. Higher satisfaction rate and continuation rates i.e. 99% versus 91% for pill users.[11].
3. >99% effectiveness (6-8 pregnancies/1000 in the first year).
4. One time procedure and immediately effective.
5. Can be used as both short term and long term method.
6. Greater coverage of population due to incorporation with institutional deliveries.
7. Immediate return of fertility once device is removed.
8. No effect on breast feeding.[12].
9. Negligible risk of Pelvic inflammatory disease in Intracaesarean IUCD users.
10. Intra caesarean IUCD insertion may be an alternative to tubectomy for some couples especially in multiparous women, women near to menopause age and group of women who refuses tubectomy on religious grounds.

Post-partum insertion versus interval insertion: Challenges and considerations:- In a study done in Egypt in 2004[14], women were provided with family planning counseling during the antenatal and intrapartum periods. Of those counselled, 28.9% chose IUCD as their method of family planning. Women were more likely to have IUCD inserted intra caesarean (71.2%) than those preferring interval insertion (7.1%). (i.e. they were more certain of their choice than those who chose interval insertion).

1. Uterine Perforation: In a recent systematic review of literature regarding PPIUCD insertion, there were no reported cases of uterine perforation in any of the studies reviewed[7]. Perforation of uterine wall during interval IUD insertion is rare but does occur sometimes due

to the instrument used to "Sound" the uterus which is not involved in PPIUCD insertion.

2. Infection: Post placental Intracaesarean insertion appears to have no significant effect on risk of genital tract infections, which is very low in interval IUCD as well. The risk is < 0.05). Number of removal of IUCD was almost similar in both groups (5.6% v/s 6.0%) but bleeding as a cause of removal was significantly more in interval group (23.5% v/s 88.5%).[13].
3. Another major advantage of INTRACAESAREAN IUCD is that the discomfort related to interval insertion can be avoided and any bleeding from insertion will be disguised by lochia. These women perceive less of IUCD related irregular bleeding and cramping pain as these two symptoms are common after Caesarean section.

Limitations of Intracaesarean PPIUCD

General limitations

1. No protection against HIV or other sexually transmitted infections.
2. Menstrual irregularities.
3. Having an IUD inserted, or removed, always requires a procedure performed by a specially trained provider in a clinical setting.

Limitation unique to PPIUCD. The strings will not be initially visible after post-partum insertion because of the length of the string compared to the length of postpartum uterus.

Usually the strings will descend into vagina by the time of first follow-up visit at 4-6wks. This occurrence however may be delayed and this may require additional follow-up and investigation to reassure the women that it has not fallen out. (Global PPIUCD Reference Manual).

Conclusion

Post placental intracaesarean Copper T 380A and CU-T375 insertion in primiparous and multiparous women is safe and effective, with low expulsion and high continuation rates; it can contribute significantly to increase the use of IUCD as a long acting reversible contraception in Indian population. A 2010 Cochrane Review concluded that PPIUCDs were safe and effective contraceptive method. With the high level of acceptance despite the low level of awareness, the Indian government needs to develop strategies to increase public awareness of the PPIUCD through different media sources. It is also important to arrange for training on PPIUCD in order to increase knowledge and skills among health care providers. This will also further promote PPIUCD use and aid in reduction of expulsion rates.

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