Original Article

Evaluate immediate post-placental intrauterine contraceptive device (IPPIUCD) insertion by ultrasonography and clinical follow up

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Abstract

Aims and Objective: To evaluate immediate post-placental intrauterine contraceptive device (IPPIUCD) insertion by ultrasonography and clinical follow up. **Method:** This study was conducted in the department of Obstetrics and Gynaecology, MKCG Medical College, Berhampur, Odisha from November 2014 to October 2016. Immediate post placental intrauterine contraceptive device (IPPIUCD i.e. CuT-380A) was inserted after vaginal delivery and during caesarean section and followed up till 6 weeks of insertion. USG performed at 24 hours and follow up at 6 weeks both clinically and by performing USG. **Results:** Out of 580 patients 62.8% received IPPIUCD after VD and 37.2% after caesarean section. USG done after 24 hours and IUCD's >10 mm from fundus seen in 19.5% cases. 65.2% cases came back for follow up. Expulsion rate at 6 weeks was 9.8% and seen more in VD group and in multipara. Menorraghia in 16.7% cases and more in VD. Pain abdomen at follow up seen in 12.6% cases and similar in both VD and CS groups. Infection at 6 weeks was 2.1%. Expulsion rate was more with infection (57.1%).Expulsion rate(8.2%) and pain abdomen(74.4%) was higher with misplaced cases. At 6 weeks, misplaced IUCD's seen in 5.5%. 93.2% at 6 weeks had properly placed IUCD's. Removal rate was 8.5%. The leading causes for removal were menorrhagia, pain abdomen(4.4%,3.2% respectively). **Conclusion:** IPPIUCD (CuT-380A) is a highly acceptable contraceptive. No complications like uterine perforation, infection, pregnancy in situ occurred during the study and follow up period. Clinical and USG are the important methods for evaluation. It is beneficial for both clients and service providers. IPPIUCD is an important, useful, safe, convenient, highly acceptable, long acting, doesn't affect tlactation and highly efficacious, temporary contraceptive method after delivery.

Key Words: IPPIUCD, EXPULSION RATES, MISPLACED IUCD, CuT-380A.

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INTRODUCTION

Family planning is important not only for population stabilization but also to improve maternal health and new-born survival and health. Family planning can avert more than 30% of maternal health and 10% child mortality if couples spaced their pregnancies more than 36 months. 65% of pregnancies in India occur in less than 36 months[1]. Most women are sexually active by 6 weeks of post-partum[2]. This early resumption of sexual activity and the unpredictability of ovulation[3] leads to many unwanted pregnancies first year post-partum. Hence immediate post-partum family planning services need to be emphasized where in the woman leaves the hospital with an effective contraception in place. Post-partum IUCD has emerged as the most effective long acting, easily reversible, non-hormonal, coitusin dependent contraceptive device which doesn't interfere with breast feeding and can be given post-partum very easily[4-11].PPIUCD can be given at various times like within 10 minutes, within 48 hrs and after 6 weeks. Out of these Immediate post-placental IUD i.e. within 10 mins seems to have many advantages. The Ministry of Health and Family Welfare GOI, introduced PPIUCD service in 19 states of India in 2010 in collaboration with JHPIEGO, India. CuT-380A has been found to be the most effective non-hormonal IUD with effectiveness of 0.6-0.8

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pregnancies/HWY[11]. Although with high expulsion rates of 7-15% irrespective of mode of delivery, its advantages outweigh the demerits[12]. As only 26% of women are using contraceptives during the first post-partum year, PPIUCD serve as excellent contraceptive in terms of feasibility and effectiveness[13]. The proportion of women opting for institutional deliveries has increased from 41 %(2005-2006) to 86.9 %(2013-2014) due to the flagship programme by the GOI, JSY (Janani Suraksha Yojna), this is an excellent opportunity for providing family planning services. Cost is not a factor as family planning services including PPIUCD's(CuT-380A) are being provided free of cost by GOI. USG is a cheap, safe, non-invasive, diagnostic as well as therapeutic method used for management of problems associated with insertion as well as follow-up of IPPIUCD. Incorrectly placed IUCD leads to increased chances of failure of contraception[14-18]. Many studies have explored the association between the position of IUCD, its subsequent expulsion rate, side effects like menstrual irregularities and lower abdomen pain and non-visibility of strings of IUD.

MATERIALS AND METHODS

This study was conducted in the department of Obstetrics and Gynaecology, MKCG Medical College, Berhampur, Odisha from Nov 2014 to Oct 2016. Immediate post placental intrauterine contraceptive device (IPPIUCD i.e. CuT-380A) will be inserted and followed up till 6 weeks of insertion.

Study Design: The study was a prospective analytical study evaluating the efficacy of immediate post placental IUCD insertion by USG and clinical follow up.

Study Population: All the women who delivered at MKCG MCH, Berhampur during study period. Sample size of 580.

Inclusion Criteria

- Women with term pregnancies willing for postpartum IUCD insertion will be included randomly after vaginal delivery and caesarean section.

Exclusion Criteria

- Insertion beyond 10 minutes of delivery.
- Women belonging to category 3 and 4 of MEC for IUCD insertion.
- Women with history of heavy and prolonged bleeding during periods.
- HIV infected women or with active genital infection or those at risk of STD's.
- PROM>8hrs.
- Medical disorders like HTN, GDM, eclampsia and febrile illness.
- Women who were unwilling for sterilisation.

Informed Consent

Informed consents are obtained from all the eligible cases who are willing to participate in the study. It would inform to patient that she is free to withdraw from the trial at any moment without providing the reason thereof. After proper counselling and consent, IUCD (CuT-380A) will be inserted immediately after placental delivery within 10 minutes into the uterine cavity, after normal vaginal delivery and during caesarean section.

Method of Insertion[19]

Post placental: Post placental insertion of the IUCD is done immediately following delivery of the placenta, typically within 10 minutes. The woman is not yet shifted from the delivery table. The insertion takes place immediately following active management of third stage labour and the delivery of the placenta.

Instrumental insertion: (Using Kelly's forceps): The IUCD is held by Kelly's forceps by no touch technique and with all aseptic condition it is inserted in the uterine cavity immediately following ten minutes of delivery of placenta. It is withdrawn by sweeping the forceps to one side of the uterus.

Intra-caeserean: IUCD inserted after placenta removal during caesarean section. The strings can be pointed towards the cervix and were not pushed through the cervical canal to prevent uterine infection. Visibility of strings- if immediately after vaginal delivery the strings appear long then the strings were cut around 2 cm from the external os. She is asked about any pain during insertion and any bleeding subsequent to the insertion. An USG is done for proper positioning of the IUCD and other routine parameters will be assessed at 24 hours. USG will be done on 2nd or 3rd postoperative day in intracaeserean type. In this study, proper position was considered to be the distance of the arm of IUCD from the fundus to be ≤10 mm and >10 mm was considered to be misplaced. She was advised to come for follow up at 6 weeks or any time she has any complaints. At follow up visit the following parameters were assessed:

- She was asked about her satisfaction with IUCD.
- Complaints were inquired if any like any changes in menstrual patterns, pain abdomen, fever, abnormal vaginal discharge or expulsion if has occurred.
- A pelvic examination done to examine the visibility of the thread and were cut when the woman finds them uncomfortable. Conditions like STI, PID, pregnancy, expulsion ruled out.
- AUSGwas done to assess the position of IUCD and any signs of suggestive of PID and others.

At the end of the study, data collected, tabulated and analyzed.

OBSERVATIONS AND RESULTS

Table 1: Type of Insertion and No. of IPPIUCD Inserted

Type	Number	Percentage
VD (post-placental)	364	62.8
CS(Intracaesarean)	216	37.2
Total	**580**	**100**

Total 580 cases were given IPPIUCD.

Table 2: Gravida status

Gravida	Number	Percentage
Primi	425	73.3
Multi	155	26.7
Total	**580**	**100**

Table 3: Pain during insertion among recipients

Pain	Number	Percentage
No pain	489	84.3
Mild pain	91	15.7
Severe pain	0	0
Total	**580**	**100**

Table 4: Position of IUCD by USG after 24 hours of insertion

Position from fundus	Number	Percentage
≤10 mm	467	80.5
>10 mm	113	19.5
Total	**580**	**100**

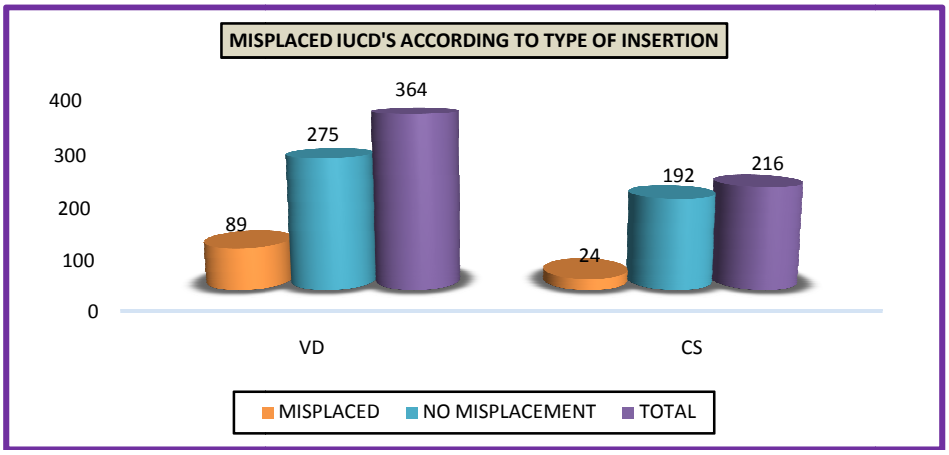

Figure 1: Misplacement of IUCD between VD and CS

In 4 patients, out of 24 cases in CS group, the IUCD was coiled in the uterus. They were all included in the misplaced category. In all of them IUCD was removed and reinserted before discharge. Follow up at 6 weeks

Table 5: Follow up cases at 6 weeks

Total LIPPIUCD Inserted	Total Follow Up Cases	% Of Follow Up Cases	% Of Lost Cases
580	378	65.2	34.8

Table 6: Follow up cases according to type of insertion

Type	Number	Percentage
Vd	264	69.9
Cs	114	30.1
Total	**378**	**100**

Table 7: Expulsion rate of IUCD

Type	Total cases in that group	Expulsions present	Expulsions absent
VD	264	32 (12.1%)	232 (87.9%)
CS	114	5 (4.4%)	109 (95.6%)
Total	**378**	**37 (9.8%)**	**341 (90.2%)**

The overall expulsion rate was 9.8% at 6 weeks.

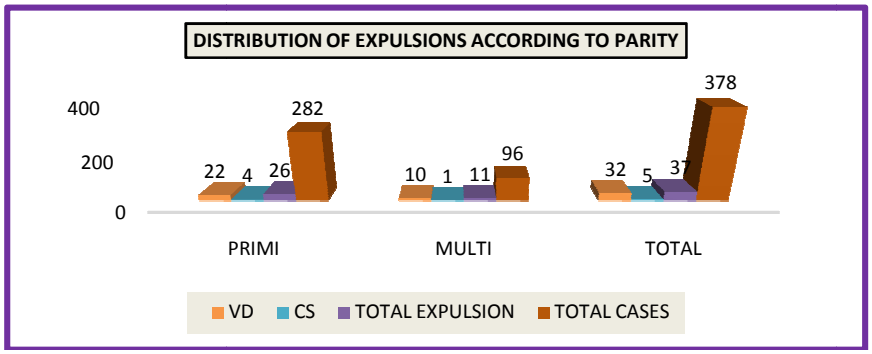

Figure 2: Expulsions according to parity

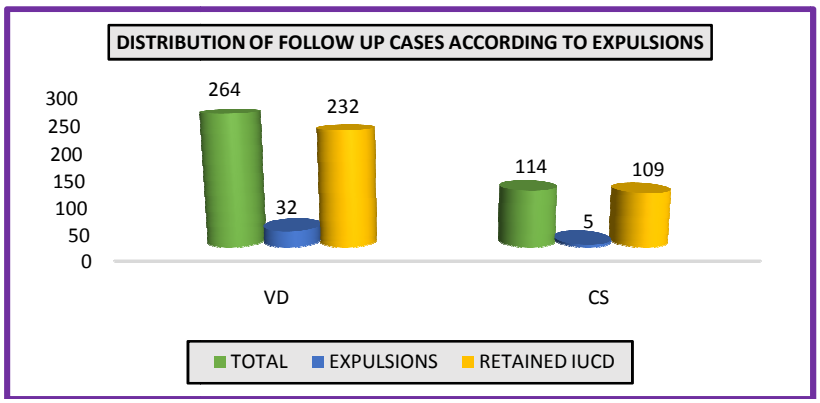

Figure 3:

Table 8: Menorrhagia status and type of insertion in follow up cases

Type of insertion	Total cases in that group without expulsion	Menorrhagia cases	Patients without menorrhagia
VD	232	45 (19.4%)	187 (80.6%)
CS	109	12 (11%)	97 (89%)
Total	**341**	**57 (16.7%)**	**284 (83.3%)**

None of the patients in expulsion group complained of menorrhagia. Menorrhagia seen in 16.7%.

Table 9: Pain status according to type of insertion in follow up cases

Type of insertion	Total patients in that group	Number of cases with pain	Pain absent
VD	232	31 (13.4%)	201 (86.6%)
CS	109	12 (11%)	97 (89%)
Total	**341**	**43 (12.6%)**	**298 (87.4%)**

No pain complained by expulsion group. pain incidence was 12.6%.

Table 10: Vaginal discharge among VD and CS group

Type	Total cases in that group	Number of vaginal discharge	No Discharge
VD	232	46 (19.8%)	186 (80.2%)
CS	109	20 (18.3%)	89 (81.7%)
Total	**341**	**66 (19.4%)**	**275 (80.6%)**

Table 12: Infection at 6 weeks

Type of insertion	Number	% of infection	Fever	Discharge	Pain abdomen
VD	5	2	2	5	5
CS	2	1.8	0	2	2
Total	**7**	**2.1**	**2**	**7**	**7**

7 cases (2.1%) had pelvic infection. All had their IUCD's in position and all had increased vaginal discharge and pain abdomen but only one case had fever.

Table 13: Infection and expulsion status

Infection	Expulsion	No expulsion	Total
Present	4 (57.1%)	3 (42.9%)	7
Absent	33 (8.9%)	338 (91.1%)	371
Total	**37 (9.8%)**	**341 (90.2%)**	**378**

4 cases (57.1%) with infection had expelled their IUCD and 3 cases (42.9%) with infection didn't expel.

Table 14: Status according to missing strings and type of insertion

Type of insertion	Total case in that group	Missing strings	Strings visible
VD	232	19 (8.2%)	213 (91.8%)
CS	109	25 (22.9%)	84 (77.1%)
Total	**341**	**44 (12.9%)**	**297 (87.1%)**

44 cases (12.9%) had undescended strings. These patients were excluded from those who had expelled.

Table 15: Misplaced IUCD'S at the time of insertion in the follow up cases

Type of insertion	Total no cases for follow up in that group	Number of cases with misplaced IUCD's at insertion time
VD	264	64 (24.2%)
CS	114	14 (12.3%)
Total	**378**	**78 (20.6%)**

78 cases (20.6%) had misplaced IUCD's.

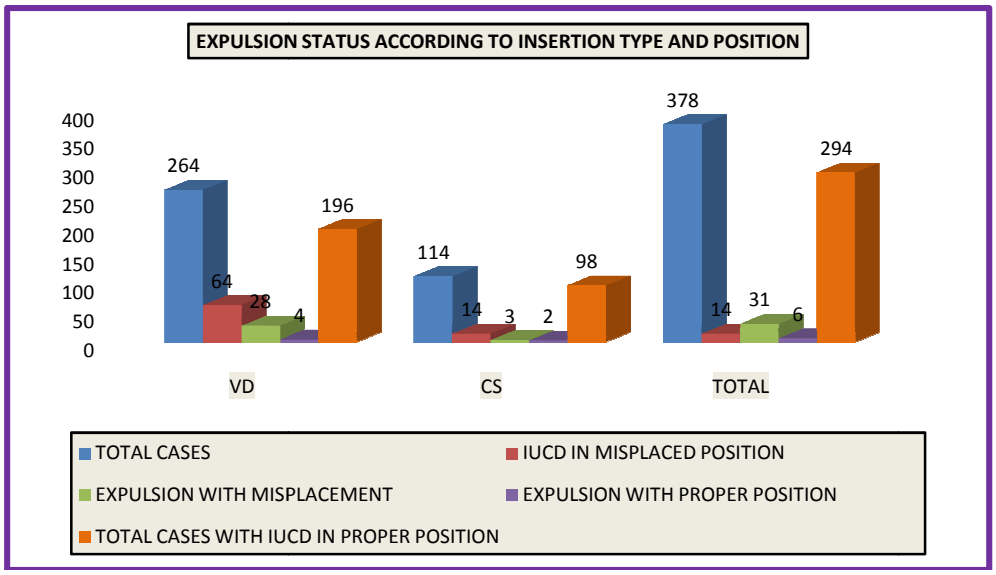

Figure 4:

Table 16: Position with type of insertion at 6 weeks by USG

Type Of Insertion	<10 Mm	%Of Proper Position	>10 Mm	% Of Misplaced IUCD	Total
VD	215	92.7	17	7.3	232
CS	103	94.5	6	5.5	109
Total	**318**	**93.2**	**23**	**6.7**	**341**

Table 17: Comparison of parameters according to misplacement and proper position

Position of IUCD	Expulsion	Menorrhagia	Pain abdomen	Vaginal discharge
Misplaced	31(8.2%)	24(42.1%)	32(74.4%)	12(18.2%)
Proper position	6(1.6%)	33(57.9%)	11(25.6%)	54(81.8%)
Total	**37**	**57**	**43**	**66**

Table 18: Removal status

IPPIUCD Removed	Continuing IUCD	Total
29 (8.5%)	312 (91.5%)	341

Table 19: Causes of removal

Cause of Removal	Number of Case	%
Pain	11	3.2
Menorrhagia	15	4.4
Infection	1	0.3
Discharge	2	0.5
Total	**29**	**8.5**

DISCUSSION

580 women were provided with PPIUCD during this study and 62.8% given after VD and in 37.2% IUCD was inserted during CS. Mostly (73.3%) of the recipients were primipara. This study was similar to a study where acceptance was 70.47 %[20]. No pain was complained by 84.3% cases which was similar to the study [2] which described 71% recipients with no pain. In 80.5% cases the IUCD was ≤10 mm from the fundus in proper position which was less than the study [(21)] which

described properly positioned IUCD incidence at 98% but was higher than the study[22] of 56% of properly positioned IUCD. In VD group misplacement rate was 24.5% whereas it was only 11.1% in the CS group. Incidence of misplacement by USG was more in VD group than in CS group in this study which was similar to the study[23] which described misplaced IUCD in 23% in VD group and 6.25% in CS group. But itcontrasted with another study [(24)] which described no difference in position of IUCD amongst the VD and CS groups. 65.2% showed up at follow up and 34.8% cases were lost to follow. Decrease in the incidence of follow up may be due to casual health practices in this rural region during the post-partum period which was almost similar to 76.95% incidence rate of follow up cases in another study[25].

Overall expulsion rate was 9.8%. Expulsions occurred more in VD group (12.1%) when compared to CS group (4.4%) which was similar to another study[26] with expulsion rates at 10.5% at 6 weeks and another study[27] with expulsion rate of 13% in VD group and 9% expulsion in CS group. The high rate of expulsion may be due to improper insertion, small sample size and due to difference in sample size between two groups. In multipara expulsion rate was 11.5%which was higher than primipara (9.2%). It was observed that expulsion occurred more in VD group than in the CS group which was similar tostudy[28] which described expulsion in 25.9% in multipara patients which was more than primipara patients. 16.7% cases had menorrhagia and none of expulsion group complained menorrhagia. Also, menorrhagia in VD and CS group was seen to be 19.4% and 11% respectively. This observation was consistent with the study[29] where menorrhagia was described in 16.66%. Pain abdomen was seen in12.6% cases. In VD and CS group pain was seen in 13.4% and 11% respectively and was similar to another study [(29)]which described pain at 13.54% overall; 13.46% in VD group and 12.19% in CS group. 2.1% of the cases had infection. In VD and CS group infection was seen to be 2% and 1.8% respectively. It was similar to the study[30] where infection at end of 6 weeks was described to be 1.17% and to another study[31] where infection was described at 1.75%. Certainstudies[32,33] found no infection after IPPIUCD insertion. In majority (57.1%) of cases of infection there was associated expulsion. Excessive vaginal discharge was 19.4%. Vaginal discharge was similar in both VD (19.8%) and in CS (18.3%) group which was similar to study[34] which described excessive discharge in 20.07% cases. Incidence of missing strings in t follow up group was 12.9%. CS group incidence was higher (22.9%) than VD group (8.2%) This might be due to shorter strings in case of the IUCD i.e. CuT-380A used in this study which was similar to study [(35)] which described missing strings in 12.7% and another study [(30)] which described undescended strings in 38% in CS group and none in VD group. 20.6% cases in follow up group had misplaced IUCD's at the time of insertion. Misplaced IUCD's were higher in VD group (24.2%) than in CS group (12.3%). In VD group expulsion rate with misplacement was more (10.6%) than in CS group (2.6%). Expulsion rates were higher in cases with misplaced IUCD's (8.2%) when compared with cases with properly placed IUCD's (1.6%) which was similar to other studies of 8%[36] and 5.2 %[(23)] expulsion rates with misplaced IUCD's. Pain abdomen was 74.4% with misplaced IUCD's as compared to 25.6% with proper position. Hence pain abdomen was more common with misplaced IUCD's which was similar to study[36] of increased pain with misplaced IUCD's and other studies[37,38]. Incidence of menorrhagia in misplaced group was less (42.1%) as compared to cases with proper position (57.9%). This study was in contrast to the study [(36)] which described increased bleeding in misplaced IUCD cases compared to cases with properly placed. Misplacement rate was 6.7% at 6 weeks. 93.2% of follow up cases were found with properly placed IUCD's at the end of 6 weeks. In VD and in CS group properly placed IUCD incidence was found out to be 92.7% and 94.5% respectively which was similar to properly placed IUCD rate at 90.2% at end of 6 weeks of insertion in a study [23]. IUCD was removed in 8.5% cases and the continuation rate at end of 6 weeks was found out to be 91.5%. It was similar to removal rate of 8.6%[39] and overall continuation rate of 93% at 6 weeks[40]. The major cause of removal of IUCD at the end of 6 weeks were menorrhagia (4.4%) and pain (3.2%). In the study, there was no reports of cervical laceration, uterine perforation, or in situ pregnancy.

CONCLUSION

Immediate post-placental IUCD (CuT-380A) is a highly acceptable contraceptive. No serious complications like uterine perforation, infection, pregnancy with IUCD in situ occurred during the study and follow up period. Clinical and ultrasonogram are important methods for evaluation. It is beneficial for both clients and service providers. Hence immediate post-placental IUCD (IPPIUCD) is an important, useful, safe, convenient, highly acceptable, long acting, without affecting lactation and highly efficacious, temporary contraceptive method after vaginal and caesarean deliveries.

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