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ORIGINAL ARTICLE

Safety and Efficacy of Intra-caesarean IUCD: A Prospective Study at a Tertiary Care Centre

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Abstract

Objective To assess the safety and efficacy of postpartum IUCD in caesarean section patients.

Methods This prospective observational study included 200 women, who gave informed consent for postpartum intrauterine contraceptive device (PPIUCD) insertion during caesarean section from January 2013 to May 2014. These patients were followed up at 6 weeks and 6 months.

Results There were no major complaints in either group in post-operative period. At 6-month follow-up in PPIUCD users, 89.5% of patients continued to use this method. 5.5% were lost to follow-up, 2.5% had spontaneous expulsion, and 2.5% removed the IUCD due to various reasons. Eight per cent of patients who wanted removal of IUCD in the second follow-up were counselled to continue, and they did so.

Conclusion The results of our study suggest that immediate intra-caesarean IUCD insertion appears to be a safe and effective method of contraception. The acceptability of intra-caesarean IUCD was high, and its continuation rate has demonstrated its safety.

Keywords PPIUCD · Contraception · Spacing · Caesarean section

Introduction

Unintended pregnancies carry negative feto-maternal consequences, rates of which vary from 38 to 64% worldwide [1]. 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 [2].

As the delivery of postpartum contraception is limited particularly the time and type [3], 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 [4]. 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, a few complications were reported, and no difference was found in puerperal morbidity or infection [5]. So we did prospective study in our centre to evaluate the efficacy and complications of intra-caesarean PPIUCD insertion.

Materials and Method

This prospective study was conducted on patients admitted to the Umaid Hospital, Department of Obstetrics and Gynaecology, Dr S.N. Medical College, Jodhpur, Rajasthan (India). Women who gave consent for intra-caesarean IUCD insertion during January 2013 to May 2014 were included in

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the study. Approval was obtained from the ethical committee of the medical college.

Subjects for the study were given detailed information about the procedure. Assessment of the women for provision of PPIUCD was done in two phases—first, a general review of the women's medical eligibility for the method and second, prior to insertion, assessment of WHO-Medical Eligibility Criteria [6]. Detailed history was recorded regarding age, socio-economic status, education, family income and residence. The past obstetric history and present delivery events were recorded. Basic investigations were done in all patients.

Inclusion Criteria

Patients aged 18–45 years who had desire to use CuT-380 for contraception, with no known uterine anomalies, genital or pelvic lesions or any genital cancerous condition were included in the study.

Exclusion Criteria

Patients with intra-partum fever, AIDS (not on anti-retro viral therapy), genital tuberculosis congenital uterine abnormality, rupture of the amniotic membrane for more than 18 h, or postpartum haemorrhage were excluded from the study.

All participants gave informed written consent before insertion. The insertion of the intrauterine device was done just after the delivery of the placenta by a trained duty doctor. The IUCD was inserted manually at fundus after delivery of the placenta. The IUCD string was directed towards the cervix. The IUCD device used in our study was CuT-380 A.

Post-insertion, patients were followed up closely in the post-operative ward, and during this time they were counselled regarding the merits and demerits of PPIUCD and about the time for follow-up (after 6 weeks and 6 months). They were reassured that they could consult us at any time if they had any problem with the PPIUCD.

Results

The mean age of the women was 24.87 ± 3.85 years; the details of age-wise distribution are shown in Table 1. Seventy-two per cent cases were antenatal clinic (ANC) booked. Fifty one and half per cent of the cases were counselled for PPIUCD during ANC, and the rest during early labour or prior to LSCS. The counselling is also depicted in Fig. 1. Sixty seven and half per cent were gravida 2. Fifty four and half per cent belonged to rural

Table 1 Age-wise distribution of study group

Age (in years)	No of cases	% of cases	Mean age ± SD (in years)
< 20	2	1	19 ± 0
20–24	99	49.5	22.08 ± 1.39
25–29	74	37	26.14 ± 1.28
30–34	18	9	31.27 ± 1.48
35+	7	3.5	36 ± 2.64

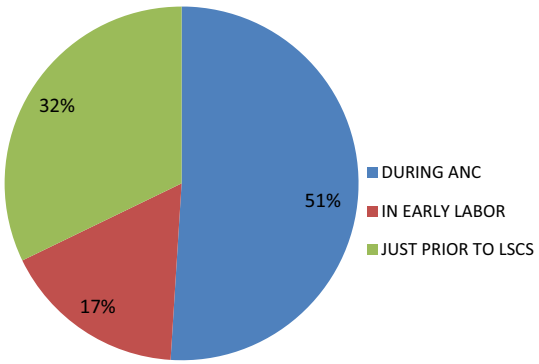

Fig. 1 Antenatal counselling distribution

population. Sixty-two per cent of the cases were taken as elective LSCS, and rest were taken as an emergency. Ninety-nine per cent cases belonged to lower and middle class, and among them 59% were illiterate. Ninety five and half per cent attended the first follow-up, and 94.5% attended the second follow-up, while remaining 4.5%, and 5.5% were lost to first and second follow-ups, respectively. The literacy-wise distribution is shown in graphical form in Fig. 2.

The distribution of follow-up and mode of communication are shown in Table 2. The details of complications and complaints are shown in Table 3. Regarding complains and complications at 6 months, 15% had missed thread, but IUCD was in situ, 14% had menorrhagia, and 6% had abdominal pain. None reported perforation of uterus or pregnancy with IUCD in situ as shown in Table 3.

Status at 6-month follow-up 89.5% continued to use this contraception, 5.5% were lost to follow-up, 2.5% had spontaneous expulsion, and 2.5% removed IUCD due to some problem, and 8% who wanted removal of IUCD in the second follow-up were counselled to continue.

Common causes for removal were menorrhagia followed by abdominal pain, misconceptions about IUCD and disappointing relatives. The compliance of the patients at 6 weeks and 6 months is shown in Table 4.

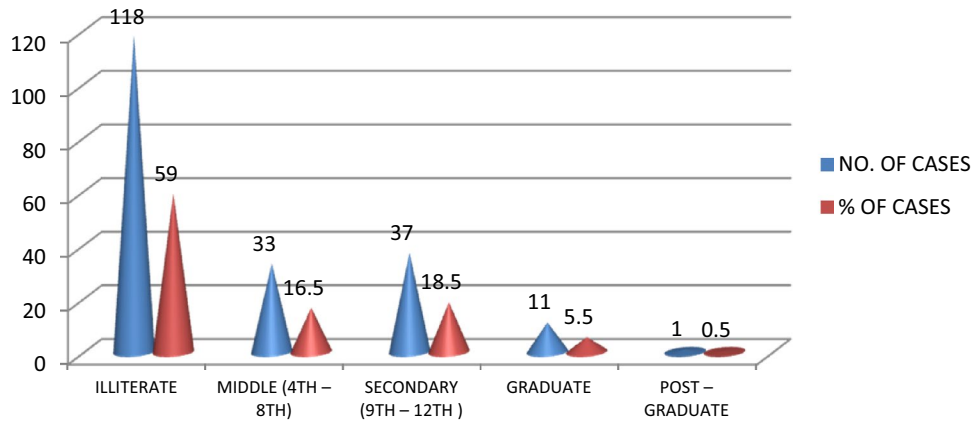

Fig. 2 Distribution of study group as per literacy status

Table 2 Distribution of study group according to follow-up

Follow-up	No. of cases	Follow-up individually	Follow-up telephonically
First follow-up	191 (95.5%)	40 (20%)	151(75.5%)
Second follow-up	189 (94.5%)	66 (33%)	123(61.5%)

Discussion

As LSCS rate is increasing for various causes, women need effective long-term reliable method of child spacing. Furthermore, termination of an unplanned pregnancy in patients with previous scar is dangerous. Women want safe, effective and convenient contraception with few side effects. Continuation rate of IUCD exceeds other hormonal method of contraception (like oral contraceptives). Intra-caesarean IUCD has higher retention rate than other routes of PPIUCD insertion. Despite the safety reports, obstetricians are hesitant to use this with women undergoing operative delivery.

In the present study, the mean age of study group was 24.87 ± 3.85 (19–42 years); 48.5% of patients being in the age group of 20–24 year. This is similar to studies conducted in the past by Singal et al. [5] (300 intra-caesarean insertions of Copper T 380A; the mean age 23.12 ± 2.42 years), Gaikwad and Gurran [7] (122 women delivered by caesarean section, age range 18–35 years, mean age 26 years). Age group 20–40 years), and Afshan and Asim [8] (Immediate postpartum IUCD age between 20 and 29 years).

Out of 200 patients in our study group, 72% are ANC booked cases. In Gaikwad and Gurran [7], 68% patients are ANC booked. This shows that ANC counselling can increase PPIUCD insertion rate and continuation.

Out of 200 patients in this study, 135 (67.5%) were gravida 2, mostly previous LSCS. In a study by Ruiz velasco et al. [9], 154 selected volunteers underwent insertion of ML Cu 250 IUD. IUD was inserted in 65, 80 and 9 cases in

Table 4 Compliance of patients at 6 weeks and 6 months

Compliance	AT 6 weeks		AT 6 months	
	No. of cases	% of cases	No. of cases	% of cases
Average	106	53	30	15
Good	78	39	61	30.5
Great	2	1	88	44

Table 3 Complication or complaints of patients

Complication/complain	At 6 weeks		At 6 months	
	No. of cases	% of cases	No. of cases	% of cases
1. Perforation	Nil	–	Nil	–
2. Infection	Nil	–	Nil	–
3. Expulsion	3	1.5	5	2.5
4. Removed	2	1	5	2.5
5. Abdominal pain	36	18	28	14
6. Heavy bleeding	45	22.5	12	6
7. Threads not visible	60	30	30	15
In situ in X-ray KUB	45	22.5	15	7.5
In situ in USG	15	7.5	15	7.5

the first, second and third caesarean sections, respectively. In the study by Gaikwad and Gurram [7], 73% were gravid 2 or higher-order pregnancy.

In our study, 54.5% patients were rural and rest were urban. *T* test shows that there is no significant difference in this, i.e. rural versus urban. Any significant difference can be reduced by good counselling during ANC visit or in early labour. No older study describes their patient distribution according to rural and urban area.

In our study, 59% patients were illiterate and 41% literate; 16.5% had middle school (4th–8th) education, 18.5% had secondary (10th–12th) education, and 6% were graduate and postgraduate. In Afshan and Asim [8], 42.4% patients were illiterate, and 64% of 300 illiterate in the study of Singal et al. [5].

In our study, for the first follow-up; 75.5% were present individually and 20% patients were followed up telephonically. 5.5% patients were lost to the second follow-up, and out of 189 cases, 61.5% patients were present individually and rest telephonically (Table 2). This is comparable to other studies, i.e. in the study of Shukla et al. [10], out of 1317 women, 21.38% did not come for follow-up after 4–6 weeks and 11.37% came for second check-up after 6 months; in the study of Afshan and Asim, [8] 35% women came for the follow-up visit (16% visited and rest on phone). At 6 months, 5% came individually and the rest were contacted by phone in the study by Singal et al. [5]. In study by Gaikwad and Gurran [7], none were lost to follow-up. In the study by Levi et al. [11], 48% women came for 6-week follow-up visits, 47% women were followed up telephonically at 6 months. This high follow-up rate shows the results of good counselling.

In our study, 87.5% patients were Hindu and 12% Muslims. Muslims have some social barriers for contraception which needs to be sorted out amicably.

Table 3 shows no major complaints or complications at 6 weeks except that thread was not visible in 30% cases. The IUCD was in situ in all cases, confirmed by X-ray or ultrasonography. 22.5% patients complained of menorrhagia which could be managed conservatively, 18% patients complained of abdominal pain which required NSAIDs, and 1.5% patients complained of complete expulsion of IUCD. Only 1% cases required removal due to menorrhagia. There was no case of perforation, pregnancy with IUCD in situ or ectopic pregnancy and infection.

As shown in Table 3, there were no major complaints or complication at 6 months. There was loss of string in 15%, but IUCD was in situ; 14% cases complained of abdominal pain, 2.5% patients complained of expulsion and IUCD removal was reported in 2.5% cases. No case of perforation, pregnancy with IUCD in situ or ectopic pregnancy and infection was reported. Continuation rate after 6 months was 89.5%. This is comparable to the study of Ruiz velasco et al. [9] where there was 2.6% IUCD removal for medical reasons and 5.2% for menstrual abnormalities and spontaneous expulsion in 2.6% at one year. Menstruation problems decreased in both studies with time. No perforation, pregnancy with IUCD in situ, ectopic pregnancy was reported in both studies. In the study of Celen et al. [12], there was one unplanned pregnancy; cumulative rates of expulsion, removal for bleeding/pain and other medical reasons were 17.6, 8.2 and 2.4 per cent per year, respectively. The continuation rate was 81.6% at 6 months. In the study of Sukhla et al. [10] (cumulative expulsion rate at 6 months was 10.68%, no case of misplaced IUD was noted and 27.3% complained of menorrhagia); in the study of Gaikwad and Gurran [8] (cumulative rates of expulsion, removal for bleeding/pain and other medical reasons were 17.6, 8.2 and 2.4%, respectively. Continuation rates were 81.6% and 62% at 6 and 12 months, resp. In the study by Singal et al. [5] after 1 year gross cumulative expulsion, removal, failure and continuation rates of 5.33%, 7%, 0.67% and 91%, were noted respectively.

At 6 weeks, 53% showed average, 39% good, and 1% great compliance, and at 6 months 15% showed average, 30.5% good and 44% great compliance. In the study of Levi et al. [8, 11], 0% reported being "happy" or "very happy" with their IUDs. Data from both studies show that compliance increases with time as patients adjust with IUCD. Four and half per cent patients wanted IUCD removal at 6 weeks, and 8% at 6 months. Eighty-eight and half per cent patients wanted to continue with IUCD at 6 weeks, and 81.5% at 6 months.

Conclusion

The current national strategy in India is for increasing PPIUCD uptake. The available patients eligible for PPIUCD as a method of contraception has expanded in recent years. This presented the opportunity to provide many more women with effective birth spacing. These women now leave the hospital with a contraceptive in place, rather than being required to return for IUCD insertion at later date.

Maternal education level, socio-economic status and area from which she belongs (rural or urban) do not affect the acceptability and uptake of intra-caesarean IUCD insertion.

Disclosure There is no financial assistance from anywhere else except the supply of IUCD and gloves from government national programme.

Compliance with ethical standards

Conflict of interest There is no conflict of interest.

Ethical Approval Approval of the study was obtained from the ethical committee of the medical college.

Informed Consent Informed written consent was received from all the participants.

References

1. Hanson JD, Nothwehr F, Yang JG, et al. Indirect and direct perceived behavioral control and the role of intention in the context of birth control behavior. Matern Child Health J. 2015;19(7):1535–42. https://doi.org/10.1007/s10995-014-1658-x.
2. Singh S, Shekhar C, Acharya R, et al. The incidence of abortion and unintended pregnancy in India, 2015. Lancet Glob Health. 2018;6(1):e111–20. https://doi.org/10.1016/S2214-109X(17)30453-9.
3. Henderson V, Stumbras K, Caskey R, et al. Understanding factors associated with postpartum visit attendance and contraception choices: listening to low-income postpartum women and health care providers. Matern Child Health J. 2016;20(Suppl 1):132–43.
4. Dr. Saswati Das, PPIUCD services in India: The journey from start to scale up, April 2013 https://www.k4health.org/sites/default/files/India%20Experience%20in%20PPIUCD_Presented%20at%20PPIUCD%20Zambia%20Mtg_April%202013.pdf
5. Singal S, Bharti R, Dewan R, et al. Clinical outcome of postplacental copper T 380 A insertion in women delivering by caesarean section. J Clin Diagn Res. Serial online 2014 09 (cited:2015 Jan 21) 9 O01.
6. WHO-Medical Eligibility Criteria WHO Library Cataloguing-in-Publication Data Medical eligibility criteria for contraceptive use—5th ed. Fifth edition 2015.
7. Gaikwad S, Gurran A. Int J Basic Appl Med Sci. 2014; 4(2), 195–197. ISSN: 2277-2103 (online) http://www.cibtech.org/jms.htm.
8. Afshan A, Asim SS. Immediate postpartum IUCD (PPIUCD): an opportunity not to be missed. ASH & KMDC. 2014;19(1):15.
9. Ruiz-velasco V, Garcia C, Castro H. Caesarean section IUD insertion. Contracept Deliv Syst. 1982;3(1):21–4.
10. Shukla M, Qureshi S, Chandrawati. Post placental intrauterine device insertion—A five year experience at a tertiary care centre in north India Deptt. of Obstetrics & Gyna. KG Medical University, Lucknow. Indian J Med Res. 2012;136(3):432–5.
11. Levi E, Cantillo E, Ades V, et al. Immediate postplacental IUCD insertion at caesarean delivery: a prospective cohort study contraception. 2012;86:102–5.
12. Celen S, Sucak A, Yildiz Y, et al. Immediate postplacental insertion of an intrauterine contraceptive device during caesarean section. Contraception. 2011;84(3):240–3.

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