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RESEARCH ARTICLE

SAFETY, EFFICACY AND COMPLICATIONS OF INTRACAESAREAN CuT 380A

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ABSTRACT

Background: Copper Intrauterine Contraceptive Device is a form of long acting reversible contraceptive device and is considered to be one of the most effective forms of birth control available. Copper T 380A has lowest pregnancy rate among all copper IUDs and can be used for a lifespan of 10 years The advantages of post placental insertion include the assurance that the women is not pregnant, high motivation, convenience and eliminates the 6 week post partum wait. This study examines the factors associated with acceptability of post partum IUCD insertion according to their socio-demographic and obstetrics characteristics and the rates of perforation, expulsion, pelvic infection, lost strings and displacement following insertion among acceptors till 12 months. **Objective:** To assess the safety, efficacy and complications of post placental Copper T 380A insertion following caesarean section. **Study Design:** This was a prospective study conducted on 500 women who underwent LSCS and were willing for CuT 380 A insertion after proper counselling in a tertiary care hospital. After placental delivery CuT was inserted into the endometrial cavity through the incision. The study participants were then followed up after discharge at 6 weeks, 6 month and one year postpartum. Any complaints if present were noted and pelvic examination and Ultrasonography were performed to verify the presence of IUCD and to check for any signs of infection or bleeding. **Results:** Of the 500 patients studied, 487(97.4%) patients came for follow up at 6 weeks, 454(90.8%) at 6 months and 411(82.2%) at 12 months. 15(3%) patients had expulsion of Cu T, of which 3(0.6%) expelled within 6 months, 10(2%) expelled in between 6-12 months and 2(0.4%) expelled at 12 months follow up. A total of 37(7.4%) patients removed the IUCD, 12(2.4%) due to increased bleeding per vaginum, 8(1.6%) due to displacement, 4(0.8%) due to abdominal pain, 1(0.2%) due to leucorrhoea and 12(2.4%) patients removed due to their misperceptions like discomfort, fear of displacement into the abdomen and social pressure. Complications were seen in 162(32.4%) patients such as bleeding in 20(4%), strings not visible in 105(21%), pain abdomen in 5(1%), leucorrhoea in 4(0.8%) and 15 (3%) expelled the IUCD. Pregnancy occurred in 3(0.6%) patients out of which 2(0.4) patients had intrauterine pregnancy and 1(0.2%) ectopic pregnancy. **Conclusion:** Post placental Copper T 380 A insertion following caesarean section is a safe, effective. low cost and convenient method of long term reversible contraception with a low incidence of expulsion and high continuation rates.

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INTRODUCTION

With a population of 1.27 billiion by the year of 2015, India is the second most populous country in the world next only to China, and the need of the hour is control of population, for which several family planning measures have been introduced. Family planning can have a positive impact on population growth, maternal morbidity, newborn and infant outcomes. CuT is one of the effective and safest method of temporary family planning methods among the numerous methods available (WHO, 1987). Spacing the pregnancies is very crucial as it helps not only in improving mother's health but also allows the mother to provide proper care and adequate attention to the neonate.

In case of primi parous as well as multiparous not desirous of permanent contraception, CuT 380A insertions provides temporary contraception with effectiveness up to 10 years (WHO, 1987). Postpartum period is an ideal time to begin contraception, as women are highly motivated to adopt contraception during this period with an advantage of convenience to patient and also service provider, ease of insertion and cost savings (Çelen *et al.,* 2011; United Nations Development programme, 1997). The contraceptive prevalence rate in India is 56.3% and the unmet need is 12.8% according to NFHS 3. The main reasons are lack of awareness, non accessibility of services, restricted women mobility due to cultural factors (Gutgutia *et al.,* 2015; Kapp, 2009). In our country this method is more applicable because delivery may be the only time when a healthy women comes in contact with

health care personnel (United Nations Development programme, 1997; Gutgutia, 2015).

MATERIALS AND METHODS

This was a prospective study conducted at a tertiary care hospital in Pondicherry over a period of 2 years. Clearance from the Ethical committee of institute for the study was obtained and500 women who fulfilled the inclusion and exclusion criteria and underwent caesarean section with consent for IUCD insertion were included in the study. Counselling was done in prenatal period or when in labour. Procedure of the study was explained to the patients before enrolling into the studyand an informed, valid, written consent was obtained. CuT 380A was introduced through uterine incision, following the delivery of the placenta and membranes after ruling out atonicity and uterine anomalies.

Insertion was done either manually or using ring forceps. Patients were examined before hospital discharge and follow up visits were scheduled at 6 weeks, 6 months and 12 months. Pelvic examination and USG were done during each visit to verify presence of IUCD and to check for displacement and signs of infection and bleeding. Expulsions were confirmed clinically and radiologically. Data obtained from the study was analysed using SSPS 11.5 software with chi square test for categorical data and mean SD, frequency for continuous data.

Inclusion Criteria

- Women delivered by LSCS (elective and emergency) without any contraindication who accepted for IUCD insertion after counselling in prenatal period or in labour.
- Age greater than or equal to 18 years.

Exclusion criteria

- Clinical chorioamnionitis
- Prolonged rupture of membranes (> 18 hours)
- Antepartum haemorrhage
- Refractory postpartum haemorrhage
- Intrauterine death
- Active diseases like pelvic tuberculosis, coagulation disorders, uncontrolled diabetes, Sub acute bacterial endocarditis.
- Uterine anomalies, leiomyomata distorting endometrial cavity space or surface.
- History of allergy to copper, Wilsons disease, Abnormal uterine bleeding prior to pregnancy.
- Non counselled or unwilling patients.

RESULTS

A total of 500 eligible and willing women were enrolled in the study. Mean age of the patient was 23.57 $\pm$ 3.64 years and 57.2% patients belonged to class 2 of modified Prasad's classification of socioeconomic strata. Out of 500 recruited, 63.2% were educated upto secondary and 23,2% till higher secondary. Acceptance was significantly high among primpara compared to multipara as 82.2% of the study population was primipara (Table 1).

Table 1. Demographic details

	N= 500(%)
Age (years)	23.57 $\pm$ 3.64
SES	
I	81 (16.2)
II	286 (57.2)
III	107(21.8))
IV	23 (4.6)
V	1 (0.2)
Education	
Illiterate	5 (1)
Primary	63 (12.6)
Secondary	316 (63.2)
Higher	116 (23.2)
Parity	
1	411 (82.2)
2	88 (17.6)
3	1 (0.2)

411 patients were followed up till 12 months and 89 were lost to follow up at the end of 1 year. Table 2 shows the period at which the patients were lost to follow up.

Table 2. Follow up details

	Followed up	Lost to follow up
6 weeks	487 (97.4)	13 (2.6)
6 months	454 (90.8)	46 (9.2)
1 year	411 (82.2)	89 (7.8)

Among the 411 followed up patients, expulsion of the IUCD was seen in 15 patients and the period at which it was expelled is shown in table 3.

Table 3. Time of expulsions

Time of expulsion	N =15 (%)
<6 months	3 (20)
6-12 months	10 (66.7)
>1 year	2 (13.3)

Complications were seen in 162 patients, like bleeding, expulsion, displacement, pain abdomen, failure and strings not visible (table 4).

Table 4. Complication breakup

Complications	N = 162 (%)	Stings not visible N= 120 (%)
Bleeding	20 (12.3)	5 (4.2)
Expulsion	15 (9.2)	3 (2.5)
Displacement	10 (6.2)	4 (3.3)
Failure	3 (1.9)	2 (1.7)
Pain abdomen	5 (3)	1 (0.8)
Strings not visible without other complications	105 (65)	105 (85.7)
Others	4 (2.4)	-

A total of 3 patients had failure with IUCD, 2 patients had intrauterine pregnancy and one had ectopic pregnancy (table 5).

Table 5. Failure of Cu T details

Failure	N = 3 (%)
Intrauterine	2 (66.7)
Ectopic	1 (33.3)

37 patients removed IUCD among the followed up for reasons such as bleeding, displacement, pain abdomen and did not want to continue (table 6).

Table 6. Reasons for removal

Reasons for removal	n = 37 (%)
Bleeding	12 (32.4)
Displacement	8 (21.7)
Don't want to continue	12 (32.4)
Pain abdomen	4 (10.8)
Others	1 (2.7)

DISCUSSION

The IUCD is an effective long lasting and reversible method of birth control. The postpartum period provides opportunity to the healthcare provider for counselling a woman regarding the family planning services to avoid unintended conception. It is observed that women who have been counselled for PPIUCD have 10 times higher chance of using IUCD than those where insertion was delayed till complete involution of uterus (Thonneau, 2008). Immediate post placental insertion following caesarean is an ideal time to achieve long term contraception with minimal discomfort to the woman and is being increasingly practiced after reported safety and lower expulsion rates (Kapp, 2009; Thonneau, 2008; Eroglu, 2006; Xu, 1994; Celen *et al.,* 2004). In this study, majority of the women (63.2 %) in the study population had secondary level of education. Acceptance of PPIUCD was higher among women with higher and secondary education (23.2 % and 63.2. This was similar to a study done in Egypt by Safwat et al. (2003) and Thomas, (1996). Primipara were more compliant towards IUCD insertion when compared to multipara. and this finding was contrary to that of the study by Grimes et al[12] where they found higher acceptance in multiparous clients (65.1 %). Though bleeding was seen in 12.3% of the followed up patients only 2.9% of them insisted on getting it removed. Whereas study by Mishra, (2014) found bleeding as the main complication (23.5 %). In the present study, among the 411 followed up patients strings were not visible in 120 patients. Out of these 3 expelled the IUCD and in the remaining 117 patients strings were curled up in the cervical canal. Among the 117 patients though strings were not visible, only 12 had complications like leucorrhoea, bleeding, pain abdomen, displacement and failure which is comparable to the study by Mishra S[13]. Among 10 patients who had displaced CuT only 2 were willing for reinsertion. Expulsion of IUCD is an important factor affecting the efficacy of device. In the present study 15 (3.6%) patients had expulsion of IUCD with maximum between 6 and 12 months, while CelenS et al. (2004) had an expulsion rate of 17.6% at the end of 12 months. In the present study, 37 patients removed IUCD for reasons such as bleeding (32.4%), displacement (21.7%), pain abdomen (10.8%), others (2.7%) and remaining (32.4%) removed due to their misperceptions like discomfort and fear of displacement into abdomen. In the study conducted by Mishra S[13] and Sharma et al. (2015) cumulative removal rate was 7% and 13.5%, respectively. The commonest cause for removal was psychosocial followed by menstrual complaints and persistent pelvic pain. Failure of IUCD was seen in 3 patients in the present study, whereas CelenS etal[9] andSunitaSinghal et al. (2014) have quoted a failure rate of 0.4% and 0.67%, respectively.

Conclusion

Post placental Copper T 380 A insertion following caesarean section is a safe, effective. Low cost and convenient method of long term reversible contraception with a low incidence of expulsion and high continuation rates. The acceptance of PPIUCD was high in the present study, and it is comparable to other studies done globally. Awareness of the PPIUCD among these women was very poor despite high acceptance. Majority of the women had never heard about the PPIUCD and the acceptance was higher among educated women and primigravida. A little more than 50% opted out despite counselling for intra caesarean Cu T, which shows that counselling has to be strengthened qualitatively and quantitatively by recruiting and training a dedicated work force. The low rates of complications can be further be reduced by consolidating training of the post graduates. The government needs to develop strategies to increase the public awareness of IUCD through different media sources which will further promote PPIUCD acceptance and reduce the accompanying misconceptions.

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