Original Research article

Early complications of trans caesarean Insertion of intrauterine contraceptive device – a prospective study

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Abstract

Introduction: The practice of contraception is as old as human existence. Although medical history has documented the desire to control fertility since ancient times, safe and effective contraception did not exist.**Aims:** To study the early complications of trans caesarean insertion of intrauterine contraceptive device**.Materials and methods** :All the patients of age group 18-40 years undergoing elective and emergency caesarean section, fulfilling the inclusion criteria , at government general hospital , Nizamabad , Telangana from January 2019 to November 2019 will be included in the study.**Results:** 106 patients selected for caesarean section were counseled for Intrauterine device o fwhich106 clients accepted and were taken up for intra operative cu T placement. IUCD was inserted in 100 subjects.6 subjects could not meet criteria for insertion. Indication for taking up for caesarean section being CPD, Malpresentation , non-reassuring fetal status and previous Caesarean section. 34% were primigravidae and 66%were multigravidae. **Conclusion:**Family planning is a key intervention in reducing maternal, newborn and child mortality and morbidity through preventing unintended pregnancies, as well as optimizing spacing. The PPIUCD is a good option as a contraceptive method to address the unmet need of family planning in postpartum women.

Keywords: Intrauterine device, Family planning, Caesarean section.

Introduction

The practice of contraception is as old as human existence. Although medical history has documented the desire to control fertility since ancient times, safe and effective contraception did not exist until the beginning of twentieth century. Although the majority (nearly 98%) of Indian men and women have an average knowledge level of one or more contraceptive methods, the contraceptive prevalence for any modern method in India is only 48.5%, which mainly includes 5.2% of condoms, 3.1% of pills, 1.7% of IUCD, 0.1% of injectables and the bulk being permanent sterilization(male and female) 38.3%. Total fertility rate (TFR) for India at present is 2.2 and is in a declining trend. Unplanned pregnancies are relatively common. According to the NFHS-4 survey, 10% births were mistimed and 11% were not wanted at all. If all women wereto have only the number of children they wanted, the TFR would be 1.9 instead of the present 2.2. However, fertility differentials exist across different sections of the country according to residence (rural vs urban), education, household wealth[1].Recent Indian studies have demonstrated a significant gap between the contraceptive awareness and usage[2,3]. Based on NFHS-4 survey, it was observed that currently among married women(age 15-49 years)the reasons for not intending to use contraception in the future are either of the following category: Fertility related (subfecund 26.2%;menopause15.5%) ; opposition to use (by respondent 5.5%; husband 4.4%) ; method related (health concerns 5%, fear of side effects, 4.3%). It was also observed that only one-third of modern contraceptive users were informed about the side effects of their method and less than 30% were ever informed about other family planning (FP) options[1,4]. The gap between the women's knowledge on their reproductive intentions / fertility preferences and their contraceptive behaviour and also the available options, to achieve their stated preferences is known as "KAP gap" and the FP program needs to focus on this. The 'Unmet need' for contraception is defined as the proportion of reproductive age women married or in an union who are fecund and sexually active, do not want any more children but are not using any form of FP (unmet need for contraception for limiting) or those currently married or in union women who want to postpone their next birth for two years but are not using any form of FP (unmet need for contraception for spacing).Importance of unmet need for contraception:Women who are using contraception are said have "met need for FP". The 'unmet need for FP' gives an estimate of the proportion of women who might potentially use contraception. The 'total demand for FP' is made up of the proportion of women of reproductive age either married or in a union with unmet need and women with met need for FP. The unmet need can lead to unintended pregnancies, which pose risks for women, for families, and society at large. These unintended pregnancies contribute torapid population growth and also pose health risks to the women and their offspring. Moreover majority of women with unintended pregnancies often resort to abortion, which is unsafe, adds to maternal mortality and morbidity. Therefore, the unmet need for FP helps the program managers to initiate and to expand the FP program based on the area specific need in order to reduce the unintended pregnancies and its consequences as also population growth. FP is a fundamental right as it reinforces people's rights to anticipate and attain their desired number of children and the timing and spacing of their births. It is achieved through use of contraceptive methods. Family planning is important because it is more than public health. The age at which a

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woman has her first pregnancy, and the spacing between two consecutive pregnancies affects the health and life of the mother and her baby. Bearing this in mind, the idea of inserting an IUCD just after the delivery of placenta –the post placental IUCD as determined by WHO, was put forward. This would be an ideal situation as it would be a low cost contraceptive also allowing early resumption of sexual activity[5].Immediately after the caesarean section, we are sure that the women is not pregnant, she is highly motivated to accept any advice of contraception and it is easy to insert IUCD with minimal instrumentation and staff which is convenient for both the women and health facilities and chances of return to the health facility for contraceptive advices are very little.The puerperium and lactation make particular demand on the safe choice of contraception as there is an increased risk of venous thromboembolic disease in the first three weeks following child birth and breast feeding is a relative contraindication for the use of combined Oral Contraceptive Pills. Postpartum IUCD is a long acting reversible method that does not interfere with breast feeding, which can be provided before the women leave the health facility and requires no transition from one method to another[10]. It is locally effective and free from systemic side effects.Once placed, it is effective for ten years. The effectiveness of copper Intrauterine devices especially the CuT 380A, has been shown to be comparable to tubal sterilization over the long term, with the extra advantage of being easily reversible. The main disadvantage of IUCD is the rate of expulsion and side effects, such as infection, pain and bleeding which may necessitate the early removal.The mode of delivery, the physical properties of the IUCD; and the method and timing of insertion are all potential factors that may influence the outcome of IUCD use and have been the subject of various studies. In case of trans caesarean insertion of IUCD, it provides a good opportunity to achieve long term contraception with minimal discomfort o the patient. Acceptance and actual insertion of IUCD is low. For women, the only opportunity to receive information about contraception is during child birth, when they are in contact with medical personnel and usually highly motivated to use contraception. Counselling of patient, timing of insertion and training are important factors for IUCD insertion in postpartum period[6].

Aims and objective

Aim of the study: To study the early complications of trans caesarean insertion of intrauterine contraceptive device

Materials and methods

All the patients undergoing elective and emergency caesarean section,fulfilling the inclusion criteria,at government general hospital, Nizamabad,Telangana from January 2019 to November 2019 will be included in the study. Informed consent of the patient will be obtained on a prestructured proforma.

Inclusion criteria: Age between 18-40 years, All women who are para 1 and multigravida delivering by caesarean section not willing for bilateral tubal ligation, absence of risk factors for pelvic inflammatory disease.

Exclusion criteria*:* Medical ineligibility criteria for IUCD : women having severe anaemia, PPH , PROM(>18 hours)or those with obstructed labour, signs of sepsis, Distorted uterine cavity(cases of uterine anomalies, fibroids), Gynaecological tumours, Hemorrahagic disorders and adherent placenta

According to the study done by Arshad F *et al* .,[7]the anticipated complications in the study subjects was 50%,[1] p=50%.

Sample size for frequency in a population

Population size(for finite population correction factor (N): 1000000

Hypothesized % frequency of outcome factor in the population(p): 50% +/-10

Confidence limits as % of 100(absolute+/-%)(d): 10 %

Design effect(for cluster surveys-DEFF):1

Sample size (*n*) for various confidence levels

Confidence levels(%) sample size

95% 97=rounded off to 100

Sample size n=[DEFF*Np(1-p)]/[($d^2Z^2_{1-\alpha/2}$*(N-1)+p*(1-p)]

Intra uterine contraceptive device was inserted within 10 minutes of placental delivery at uterine fundus with string end positioned towards cervix but not beyond it. Post insertion follow up was carried out at 6, 12, and 24 weeks after delivery. By clinical follow up, the women were asked about excessive bleeding, irregular cycles, backache, abdominal pain, vaginal discharge and expulsion of IUCD, missed period on each visit. Per speculum was done to check for the threads of IUCD. Trans abdominal Ultrasonography was performed to check for the intrauterine contraceptive device when threads were not seen on per speculum examination

Statistical analysis: Data will be collected and tabulated in Microsoft Excel sheet. Results will be presented as proportions and percentages.

Results

151clients decided for caesarean section were counselled for Intrauterine cu T of which 106 clients accepted and were taken up for intra operative cu T placement. IUCD was inserted in 100 subjects.6 clients could not meet criteria for insertion. Indication for taken up for caesarean section being CPD, fetal distress, malpresentations and previous LSCS.

Table 1: Signs and symptoms in the study

White discharge Per Vaginum	6 WEEKS		12 WEEKS		24 WEEKS	
	frequency	Percent	frequency	percent	frequency	Percent
Yes	2	2.1	1	1.1	1	1.2
No	95	97.9	87	98.9	85	98.8
Total	97	100	88	100	86	100
Pain in abdomen						
Yes	1	1	1	1.1	1	1.2
No	96	99	87	98.9	85	98.2
Back pain						
Yes	0	0	0	0	0	0
No	97	100	88	100	86	100
Bleeding PV						
Yes	4	4.1	1	1.1	2	2.3
No	93	95.9	87	98.9	84	97.7

Table 2: Intrauterine Cu-T related variables in study

Expulsion	**6 WEEKS**		**12 WEEKS**		**24 WEEKS**	
	Frequency	percent	Frequency	percent	Frequency	Percent
Yes	2	2.1	0	0	0	0
No	95	97.9	88	100	86	100
Thread visibility						
Yes	70	72.2	68	77.3	72	83.7
No	27	27.8	20	22.7	14	16.3
Removal						
Yes	2	2.1	0	0	3	3.5
No	95	97.9	88	100	83	96.5

Table 3:Ultrasonography for missing treads in patients in study

	6 weeks		12 weeks		24 weeks	
Ultrasonography	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	25	92.6	0	0	0	0
No	2	7.4	20	100	14	100
Total	27	100	20	100	14	100

Table 4: Follow up of complications

complications	6 weeks	12 weeks	24 weeks
White discharge	2.1%	1.1%	1.2%
Pain abdomen	1%	1.1%	1.2%
Irregular cycles	4.1%	1.1%	2.3%
Expulsion	2.1%	-	-
Threads not seen	27.8%	22.7%	16.3%
Removal	2.1%	-	3.5%
Continuation	97.9%	97.8%	94.33%

Malpresentation, non-reassuring fetal status and previous Caesarean section.34%were primigravidae and66%were multigravidae .The difference of six patients between the acceptance and uptake was due to failure to meet MEC criteria at the time of Cesarean Section, three patients had anomalous uterus, one had PPH secondary to uterine atony, one had adherent placenta and one subject had unhealthy endometrium.

Multigravidae seemed to have high acceptance as compared to primigravidae. Women who desired more children and women who wanted to delay tubectomy for two years were more likely accept IUCD. Eleven patients were lost to follow-up by the end of the study. There were no serious complications associated with immediate post placental IUCD insertion. There was no case of an unplanned pregnancy. Intrauterine device expulsion occurred in two subjects of which one subject had complete expulsion, while one had partial expulsion. In addition to spontaneous expulsions, the IUCD was removed for spotting in two subjects for menorrhagia in one subject and other medical reasons in one subject. Also one of the subjects discontinued IUCD use for undergoing tubectomy. One patient had white discharge. None of them had back pain.

Discussion

PPIUCD is convenient for many women since the motivation is high for contraception and it does not interfere with breast feeding. IUCD is not only highly effective but also LARC &has long term protection and immediate return to fertility upon removal. Other benefits include non interference with intercourse, can be used by lactating women and helps in preventing ectopic pregnancy. Its limitation however is that it requires appropriate infection prevention practices, does not protect against STI/HIV, may be expelled or translocated, and may increase menstrual bleeding or lochia during the first few months of insertion.Determinants of acceptability and uptake of intra-operative IUCD placement at Caesarean section include Socio-demographic factors, Reproductive factors, Socio-culturalfactors, Socio-economic factors and finally availability of legal policy and current practices offered by the providers. All the mentioned factors are interrelated.The present study was done in 106 patients who underwent caesarean section and had given consent for CuT-380A IUCD insertion following removal of placenta. The objective of the study was to assess the acceptability, uptake of IUCD, (the percentage of participants with an IUCD inserted intra-operatively) and the adverse events which included vaginal bleeding, back pain, pain abdomen and expulsion rates of IUCD insertion in women undergoing Caesarean section.Acceptability was measured at the patient level using a binary (yes/no) variable depending on whether a woman accepts to have an IUCD inserted during caesarean or not. In the present study the acceptability is 70% and uptake is 66%. A study conducted in by Ndegwa et al[8]found acceptability of post placental IUCD at 72% and uptake at 63% for immediate postpartum IUCD through both vaginal and trans-caesarean routes. Intra caesarean has expulsion rates and less perforation rate. Perforation is less in postpartum IUCD. Early complications which are within 6months duration of insertion. In a randomized control trial by Lester et al compared intra-caesarean insertion of the copper T 380A versus 6 week post Caesarean insertion and found that uptake was better in immediate intra-caesarean insertion compared to interval insertion with better continuation rate of 83% in immediate verses 53% in delayed insertion at 6 months[9].In this present study the patients received information about IUCD use during antenatal periods, at the time of hospitalization, prior to caesarean delivery. Mothers who declined in this study gave reasons for their decline. The most frequently stated reason was that IUCD might migrate to other parts of the body. A substantial proportion of the mothers thought IUCD might irritate the partner during sexual intercourse while others thought it would cause sepsis. Misconception and fear for IUCD still exist as few subjects rejected IUCD as it was thought to be a social stigma and would cause deposition of rust. Some other reasons given by the mothers for declining IUCD were their fear that it can cause abortion in future pregnancy while others were satisfied with their previous family planning methods. In their study Ndegwa et al[8] recommended that routine counselling is adequate to allow for increased uptake of postplacental IUCD, and the information is to be given during the antenatal visits[9].In the present study there were two cases of white discharge at the end of 6 weeks and one case at the end of 6 months which subsided with antibiotics. One subject had pain abdomen from the date of insertion of IUCD and during study

period but was managed conservatively.In 29.03% subjects threads were not visualized on per speculum examination at the end of 6weeks.This number decreased to 22.98 % at the end of 12 weeks and 14% at the end of 6months. The threads were trimmed in 10% of the subjects at the end of 6weeks.The rate of removal was 2.1% at the end of 6 weeks and 5% at the end of 6 months. There were no cases of perforation or pregnancy with Cu-T in-situ. Outcomes of immediate post placental insertion like increase in postpartum blood loss were thought to be significant earlier. This has been disputed by other studies showing minimal or no increase in postpartum blood loss[10]. In the present study, there were no cases of postpartum hemorrhage. However literature does mention menorrhagia due to IUCD but in the present study, one subject experienced irregular cycles at the end of 6months, and was managed conservatively. At the end of 6 weeks, two subjects had vaginal spotting and the IUCD was removed for one. Two subjects had menorrhagia of which one was managed on tranexamic acid and one patient requested IUCD removal. At the end of 12 weeks one subject had bleeding for one month and at the end of 6 months two subjects had moderate to heavy flow during cycles, all of who were managed conservatively.A Cochrane database of systematic reviews 2003 reports an expulsion rate of 2.4 to 5.2%by the end of first year. A study by Kittur S et al[11], show sex pulsion rate of 5.23% and it was concluded that the expulsion rates after PPIUCD would be minimal if it was inserted by a trained provider and placed at the fundus. In a study done in Western U.P. by Gupta et al., reported that the expulsion rates were significantly high in PPIUCD (4.3%) when compared to interval insertion(2%)[12]. In the present study the rate of expulsion was 2.1% at the end of 6 weeks and no further expulsions after 6 weeks.Because of immediate and convenient contraception and low expulsion rate during caesarean section, intraoperative placement is more advisable. Trans-cesarean IUCD placement has not only been proven to be safe but also recognized to be of convenient,acceptable timing.The proportion of discontinuation was also assessed.

The success rate of intraoperative IUCD placement can be measured by the continuation rates which were at 87% at the end of 6 months in our study. These results are similar to other studies which reported continuation rates of postpartum IUCD of 90.5% at 6 weeks and 80% at 6 months. Another study conducted by Gupta et al., compared the rates of removal following postpartum insertion versus interval insertion and found that they were similar (5.6% v/s 6.0%). However bleeding as a cause for the removal was notably high in the interval insertions (23.5% v/s 88.5%) and social factors were the most common cause for removal. In our study too, 10% women came back requesting removal due to pressure by other family members because of perceived complications. The majority of them could be counseled about the unfounded basis of their apprehensions. This highlights the fact that greater awareness needs to be generated both in the women and the decision makers in their families if we are to increase the uptake of family planning methods in general and PPIUCD in particular[12]

Conclusion

Family planning is a key intervention in reducing maternal, newborn and child mortality and morbidity through preventing unintended pregnancies, as well as optimizing spacing. The PPIUCD is a good option as a contraceptive method to address the unmet need of family planning in postpartum women. The increased institutional deliveries are the opportunity to provide women easy access to PPIUCD services. Providing PPIUCD services is cost–effective and efficient because it does not require significant increases in staff, supervision or infrastructure. It is a LARC so best method for spacing.Most mothers post cesarean will require along term contraception and IUCD would be the option of choice. They will also have the opportunity to have their IUCD inserted by the most experienced health providers. The postpartum period represents a critical window of opportunity for women to receive family planning services because many will access health services during pregnancy and childbirth at which point they can be introduced to and linked with PPFP services. Increased use of PPFP and PPIUCD can result in dramatic reductions of high risk pregnancies and improvements in the health and survival of millions of mothers and children in India.

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