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Original Research Article

Copper T (380 A) and risk of uterine perforation in lactating women: rural scenario

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ABSTRACT

Background: Copper T 380 A is commonly used as PPIUCD as well as Interval contraception in rural areas of Chhattisgarh. Studies have reported that interval insertion of intrauterine device in women during their lactation period is associated with high risk of uterine perforation as compared to postpartum insertion similar as our study.

Methods: 50 consecutive women were included, who came in family planning OPD of Chhattisgarh Institute of Medical Sciences (CIMS), a Government Medical College, with history of copper T insertion, during their lactation period, within one year of child birth. The copper T insertion was done by health workers at peripheral health centers with complains of pain lower abdomen, menstrual irregularities, missing thread, vaginal discharge, uterine perforation following Copper T 380 A insertion. Apart from patient's characteristics such as age and parity etc. the method of detection of the perforation and details of management were analyzed.

Results: There was one case of partial uterine perforation, one case of copper T lying in peritoneal cavity, two cases of expulsion and three cases had embedded copper T in the myometrium.

Conclusions: The risk of perforation due to copper T 380A insertion in lactating women is slightly high, thus timing of insertion, proper counseling and providers training, which are vital factors for intrauterine device use during lactation period, should be considered seriously so as to minimize the complications.

Keywords: Copper T 380A, Lactating women, Uterine perforation

INTRODUCTION

Copper T 380A is one of most popular form of long-acting reversible contraception (LARC) after female sterilization used worldwide. In India only 2% women of reproductive age group use it, while In Chhattisgarh, use of IUCD observed in only 1.6% women.^{1, 2} Copper T 380A is a highly effective IUCD, which was introduced for the first time in the National Family Welfare program by the Government of India in 2002. It can be used by all women regardless of breastfeeding status as it has no effect on quality and components of breast milk, in fact lactation facilitates pain free and easy insertion.^{3, 4} Uterine perforation is an uncommon but serious complication

following IUCD insertion in lactating women. These women are likely to have a soft, hyper-involuted atrophic uterus due to breast feeding, which may predispose to uterine perforation. Thus, it is advisable to exercise special care during IUCD insertion in these women and also to ensure that the women are followed up at regular intervals.⁵

The purpose of this study is to identify and compare the incidence of uterine perforation and other adverse events associated with Copper T (380 A) intrauterine device in a lactating woman so that it would help health professionals to revise policies and practices to reduce the complications associated with it.

METHODS

This retrospective and prospective observational study was conducted in the department of Obstetrics and Gynecology at Chhattisgarh Institute of Medical Sciences, a government medical college and tertiary referral centre, between October 2015 and September 2016.

50 consecutive women were included, who came or were referred to family planning OPD from rural health centers with complains of pain lower abdomen, menstrual irregularities, missing thread, vaginal discharge, uterine perforation following Copper T 380 A insertion. Inclusion criteria were, history of copper T insertion for contraception/spacing during their lactation period within one year of child birth. Complete information on demographic and clinical variables like age, parity, health providers, place where IUCD was inserted, complains, complications, investigations and patient outcome were obtained by review of records and discussed. Qualitative data were presented as frequencies and percentages by using SPSS, version 21.

RESULTS

During the one year study period, total 725 cases of Copper T 380 A insertion were observed, out of which 144 were of interval IUCD insertion and rest 581 cases were of PPIUCD insertion. 50 (34.72%) women of interval insertion were included in study and thoroughly analyzed, who had history of insertion at PHC/CHC during their lactation period. Majority of women 44 (88%) were between 20-30 years of age group, 45 (90%) were educated up to primary, 36 (72%) belong to lower socioeconomic status and 44 (88%) were from rural background (Table 1).

Table 1: Demographic details (N=50).

Variable	No. of women	%
0-20	4	8.0
21-25	26	52.0
26-30	14	28.0
31-35	6	12.0
Educational status		
Educated	45	90.0
Uneducated	5	10.0
Socioeconomic status		
Upper lower (Class IV)	14	28.0
Lower (Class V)	36	72.0
Residence		
Rural	44	88.0
Urban	6	12.0

Regarding parity, 44 (88%) women observed to be were multiparous, having a parity of one or two. It was noted that 38 (76%) women were having lactational amenorrhoea while 12 (36%) were menstruating

regularly. In 42(84%) cases Copper T was inserted either by ANMs or by LHV's, while in 8 (16%) women it was inserted by staff nurses. Insertion time since last delivery was six months or less in 30 (60%) women while rest 20 (40%) women had insertion after 6 months since last child birth. Regarding follow-up services, most of the patients were advised to report health providers only if needed. (Table 2).

Table 2: Parity, providers, time since last child birth (N=50).

Variable	No.	%
Lactational amenorrhea	38	96.0
Parity		
1	24	48.0
2	17	34.0
3	5	10.0
≥4	4	8.0
Providers		
ANMs/LHV's	42	84.0
Staff Nurse	8	16.0
Time since last child birth		
<6 months	30	60.0
>6months	20	40.0

Major complain observed was pain lower abdomen which was reported in 15 (30%) cases. Other complains were menstrual irregularities, vaginal discharge, missing thread and uterine perforation observed in 12 (24%), 6 (12%), and 5 (10%), 2 (4%) cases respectively. Surprisingly 10 (20%) women were asymptomatic, who insisted for USG in order to have assurance for the correct placement of Copper T in uterine cavity (Figure 1).

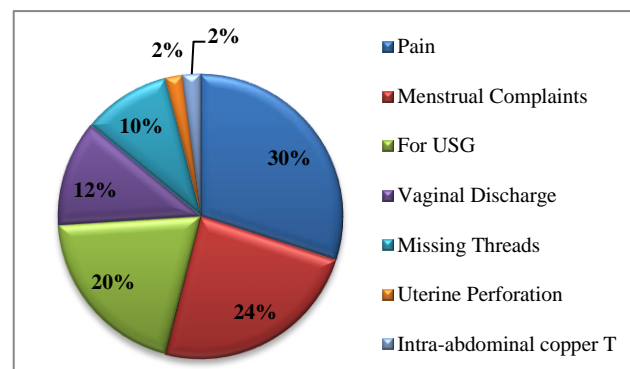


Figure 1: Presenting complaints.

Majority of women 45 (90%) required only counseling and or symptomatic treatment. In three cases of missing thread, Copper T was found embedded in superficial layers of the myometrium on TVS, which were removed successfully without any complications with the help of Copper T removal hook. Fortunately, only 2 (4%) cases of uterine perforation were observed in our study, of which one case was of partial perforation, where left transverse arm of device had perforated uterine wall close

to the left uterotubal junction. Another case was of complete uterine perforation, where Copper T was lying in peritoneal cavity. Both cases needed laprotomy because of omental as well as intestinal adhesions (Table 3).

Table 3: Complications and management.

Complications	Management	No	%
Complete perforation	Laprotomy	1	2.0
Partial perforation	Laprotomy	1	2.0
Expulsion	Counseling	2	4.0
Embedded	Removal	3	6.0
Total		7	14.00

DISCUSSION

Chhattisgarh is one of the eight high focus states for family planning with high TFR and high MMR, where 77% population lives in rural areas. Women are generally married at an early age as compare to other EAG states and by the time they reach the age of 24- 26 years they actually have 2 or 3 children. Breastfeeding for two years or longer is a common practice following child birth. Major decisions like abortion, contraception etc is taken either by husband or mother-in-law.^{5,6} Overall contraceptive prevalence in our state is 57.7% in currently married women, 46.2% women are sterilized in contrast of 0.7% male sterilization. Condom is still most preferred contraceptive method used in 3.9% couples. The use rate of Pill is 1.7% while IUCD is used by only 1.6% women. Many studies have reported that women refuse to use contraceptive methods either without any reason, or due to fear of complications, lack of family support, having preference for natural methods like lactation amenorrhea.^{2,7,8}

Incidences of uterine perforation range from 0.4 to 2.2 per 1000 IUCD insertions.⁹ As postulated by Esposito et al there are two mechanisms of uterine perforation, that is primary perforation (perforation at the time of insertion) and secondary perforation (perforation at least 4 weeks or more after insertion has taken place), which is caused by gradual erosion through the myometrium. Embedment is another term used, when device impinges on the endometrium with a force of underlying tissue and penetrates into the superficial layers of the myometrium.¹⁰ Perforation may be partial, with the depth of device in varying degree within the uterine wall or complete, with the device totally in the abdominal cavity.¹¹

IUCD does not affect lactation, but appears to be associated with higher perforation rate. Prolong breastfeeding causes hyper involution of uterus and low-estrogen endometrium during postpartum state, which may predispose to uterine perforation, since the inserter will perceive less resistance to insertion and the acceptor will experience less pain during the procedure due to circulating higher β -endorphin levels.^{4,5,12} Imbalance

between the size of the IUCD and that of the uterine cavity, causing production of asymmetrical uterine forces may also lead to Copper T embedment and secondary perforation in these women, other risk factors include, period of insertion <6 months since delivery, insertion by less experienced clinicians, high number of previous abortion and lower parity.¹³⁻¹⁷ Presentation of majority of women in our study coincides with the previous studies.^{4,18} Surprisingly 10 (20%) women who were asymptomatic, came to get confirmed their position of Copper T in utero by USG for their mental satisfaction, that shows word to mouth popularity of USG as an important diagnostic tool to detect any abnormality in the body. Rate of uterine perforation is much higher in our study, that may be because of associated multiple risk factors i.e. low parity in 44(88%), lactational amenorrhea in 38(76%), time of insertion less than 6 months or <36 weeks in 30(60%), less experienced providers in 42(84%), and lack of follow-up, which all coincides with the findings of previous studies.¹⁵⁻¹⁹ This indicates poor health services and an extreme shortage of trained health care providers in our state similar to earlier studies.^{20,21}

In present study, uterine perforation observed were two, of which one case of partial and another was of complete perforation. Both cases were from remote areas, both had history of on and off pain in lower abdomen, which started 2-3months following insertion, which was missed by health workers. It took almost 5months in one case to confirm partial uterine perforation due to lack of follow-up services and poor availability of diagnostic facilities. IUCDs can be very well seen in vaginal ultrasonography (TVS), but alternatively X-rays, computerized tomography or magnetic resonance imaging can be used in locating missing devices.²² Both cases of perforation needed laprotomy because of associated omental and bowel adhesions, similar as previous studies.^{23,24}

IUCDs are remarkably simple, safe, cost-effective, associated with low morbidity with their use, even when uterine perforation occurs. Thus, providers should not be deterred from using this method, especially in developing countries like India, but should be attentive and expert enough so as to facilitate correct insertion thus preventing these potential problems.¹¹ Although, more studies are needed to determine whether there is a significant risk of uterine perforation in lactating women with IUCD insertion.

CONCLUSION

There is wide gap seen between knowledge and practice of contraception in our state, which may be because of poor access, lack of knowledge, lack of faith on government health services especially after the episode of maternal deaths following family planning operation in November 2014. Regarding IUCD insertion in lactating women, more emphasis should be given on training programs and follow-up services similar as PPIUCD programs, to improve provider's skill and to check

complications. Other alternatives like LAM should be promoted in rural areas where facilities for monitoring are almost nil. Finally, we need sympathetic attitude and collaborative efforts, to strengthen their belief, to make them understand the importance of contraception and to alleviate the acceptance for contraceptive choices in rural communities.

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