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Original Research Article

Comparative study of immediate post placental vaginal versus intra caesarean insertion of copper T380A

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ABSTRACT

Background: The study was carried out to compare modes of PPIUCD that is safety, removal and expulsion rates of immediate post placental vaginal versus intra-caesarean insertion of copper T380A.

Methods: This was an interventional study conducted from January 2015 to December 2016 in Department of Obstetrics and Gynaecology, Government Medical College and Hospital, Aurangabad. This study involved participants who accepted PPIUCD in antenatal period and delivered in Government Medical College and Hospital, Aurangabad. Copper T380A was inserted vaginally after taking consent in 50 postpartum mothers within 10 minutes of normal vaginal delivery and 50 women who were undergoing caesarean section for obstetric indications who accepted copper T380A from contraceptive basket. Chorioamnionitis, prolonged premature rupture of membranes, unresolved postpartum hemorrhage, major medical disorder and participants who were lost to follow up were excluded. Antibiotic cover was given for 5 days. Participants were followed up either personally or telephonically at 6 weeks, 6 months or earlier if they had any complaints.

Results: Among 50 post placental vaginally copper T380A inserted participants, 6(12%) had menstrual disturbance and pain abdomen each. One participant (2%) had infection vaginitis. Among 50 intra-caesarean copper T380A inserted participants, 3 (6%) had menstrual disturbance and pain abdomen each. 6 (12%) had missing strings. Missing strings which was seen only in intra-caesarean group was statistically significant when compared to post placental vaginal group. Expulsion was seen only in post placental vaginally copper T380A inserted participants (4 out of 50). There was no statistically significant difference in expulsion & removal rates of both the groups.

Conclusions: Both modes of PPIUCD insertion were equally safe for participants except for missing strings which was seen more in intra-caesarean group and was statistically significant.

Keywords: CopperT380A, Immediate post placental vaginal, Intra-caesarean, PPIUCD

INTRODUCTION

225 million people have unmet need of contraceptives.¹ It is estimated that the unmet need of family planning in India is around 65%.² By 2030, universal access of contraceptives is ensured as a part of 3rd goal (good health and well-being) of sustainable development goals after the end of millennium development goals in 2015.¹ Increasing institutional deliveries and high receptivity in

postpartum period has made PPIUCD as one of the important methods of contraception in puerperium. PPIUCD insertion has the added advantage of eliminating six weeks waiting period and an additional hospital visit.

Copper T380A is highly effective, reversible, long term contraceptive that does not interfere with breastfeeding and is also supplied free of cost by government of India. There are 0.6-0.8 pregnancies per hundred women in the

first year of use. The ministry of health and family welfare, government of India introduced PPIUCD service in 19 states of India in 2010, in collaboration with Jhpiego, India.³ A Cochrane review 2015 concluded that the quality of evidence was moderate and future trials are needed to estimate expulsion rates and side effects of PPIUCD.⁴ Keeping this in mind, this study was carried out to compare modes of PPIUCD that is safety, expulsion and removal rates of post placental versus intra-caesarean insertion of copper T 380A. The aim of this study is to compare safety, expulsion and removal rates of immediate post placental vaginal insertion versus intra-caesarean insertion of copper T380A.

METHODS

It was an interventional study done in January 2015 to December 2016 in the Department of Obstetrics and Gynaecology, Government Medical College and Hospital, Aurangabad. Women who accepted PPIUCD in antenatal period and delivered in Government Medical College and Hospital, Aurangabad after applying inclusion and exclusion criteria during insertion constituted the study population.

Inclusion criteria

Postpartum mother within 10 minutes of normal vaginal delivery or women who were undergoing caesarean section for obstetric indications and have accepted copper T380A from contraceptive basket and have given consent to participate in the study.

Exclusion criteria

Chorioamnionitis or history of prolonged premature rupture of membranes >18hours, unresolved postpartum hemorrhage, major medical disorder, lost to follow up.

After applying inclusion and exclusion criteria and taking written valid informed consent, history pertaining to age,

socioeconomic status and parity was noted. Under all aseptic precautions, copper T380A was inserted in two groups of 50 women each.

1. Postplacental vaginally inserted group: Participants who delivered vaginally. After active management of third stage of labour, cervix was held using ring forceps and copper T380A was held in a Kelly's forcep and IUCD was placed in the fundus of uterus vaginally such that no strings were visible at the cervical os.
2. Intra-caesarean group: who were undergoing caesarean section for obstetric indications. After the placenta was removed, Copper T380A was held between index and middle finger and inserted through the uterine incision in the fundus of uterus. The strings were pointed towards cervix but not pushed through the cervical canal. Uterine incision was closed taking care not to include the strings of copper T380A.

Post insertion counselling was done. Same antibiotics were given in both the groups for 5 days. Participants were followed up telephonically or personally at 6 weeks, 6 months or earlier if there was any complication. PPIUCD outcome was noted in both groups in the form of safety (pain, bleeding, infection, perforation and missing strings), expulsion and removal rate and were compared.

Data was compiled and analysed using statistical tests. Women were offered reinsertion of IUCD or alternative methods of contraception in case of expulsion or removal.

RESULTS

As shown in Table 1, among 50 post placental vaginally Copper T380A inserted group, 20 were belonging to 21-25 years age group, 26 were of upper lower socioeconomic status and 22 were para3 women.

Table 1: Distribution of age, SES and parity of participants.

Variables		Post placental vaginal group n=50	Intra-caesarean group n=50	p-value
Age (years)	≤20	6	5	0.86
	21-25	20	25	
	26-30	18	15	
	31-35	4	4	
	>35	2	1	
Socio-economic Status (Kuppuswamy)	Lower middle	5	6	0.56
	Upper lower	26	30	
	Lower	19	14	
Parity	Para1	12	18	0.11
	Para2	15	20	
	Para3	22	12	
	Para4	1	0	

Similarly, among 50 intra-caesarean group, 25 were belonging to the age group of 21-25 years, 30 were belonging to upper lower socioeconomic status and 20 were para 2 women.

Table 2 showing among 50 post placental vaginally Copper T380A inserted group, 6 (12%) developed menstrual disturbances, 6 (12%) developed pain abdomen and 1 (2%) developed infection. Out of 50 intra-caesarean group, 3 (6%) developed menstrual disturbances, 3 (6%) developed pain abdomen and 6 (12%) had missing strings who were treated.

Missing strings was seen only in intra-caesarean group and was statistically significant when compared to none in post placental vaginally Copper T380A inserted group. One participant of post placental group developed vaginitis which was treated. Missing strings which was seen only in intra-caesarean group was statistically significant (p=0.011) when compared to post placental vaginal group.

Table 2: Comparison according to complications.

Complications	Post placental vaginal n=50	Intra-caesarean n=50	P-value
Menstrual disturbances	6 (12%)	3 (6%)	0.294
Pain abdomen	6 (12%)	3 (6%)	0.249
Missing strings	0 (0%)	6 (12%)	0.011
Infections	1 (2%)	0 (0%)	0.153
Perforation	0 (0%)	0 (0%)	

Missing strings which was seen only in intra-caesarean group was statistically significant (p=0.011) when compared to post placental vaginal group.

Expulsion of copper T380A was seen only in post placental vaginally Copper T380A inserted group in present study. Out of 4 post placental vaginally Copper T380A inserted group, 1 expulsion was within 7 days, 2 were between 1-6 weeks and 1 was after 6 weeks as shown in Table 3.

Table 3: Comparison according to expulsion rate.

Expulsion rate	Postplacental vaginal n=50	Intra-caesarean n=50	P-value
Within 7 days	1 (2%)	0	0.1175
>7 days to 6 weeks	2 (4%)	0	
>6 weeks to 6 months	1 (2%)	0	
Total	4 (8%)	0 (0%)	

Expulsion which was seen only in post placental vaginal group was not found to be statistically significant with p=0.1175.

Among 50 post placental vaginally Copper T380A inserted group, 6 got removed their copper T380A (2 for menstrual disturbances, 2 for pain abdomen, 1 for pressure from family and 1 as she did not want to continue).

Among 50 of intra-caesarean group, 6 got their copper T380A removed for missing strings and 1 each for menstrual disturbance and pain abdomen respectively. There was no statistically significant difference in removal rates in both groups as it is shown in Table 4. There were no statistically significant removal rates in both the groups.

Table 4: Comparison according to removal rates.

Removal rate		Post placental vaginal n=50	Intra-caesarean n=50	P-value
Due to complications	Menstrual disturbances	2	1	0.564351
	Pain abdomen	2	1	
	Missing strings	0	6	
Without complications	Pressure from family	1	0	
	Does not want to continue	1	0	
Total		6	8	

DISCUSSION

Among 100 participants, 9 had menstrual disturbances which is similar to the study conducted by Hooda R, Mann S et al.⁵ Most of them were treated with tranexamic acid and responded well but 2 got removed for the same. Among 100 participants, 9 had pain abdomen which is

similar to the study conducted by Garg N, Grover S et al.⁶ Most of them were treated with analgesics and responded well but 2 got removed. Missing strings was seen in 6 of all the 100 participants and all belonged to intra-caesarean group. They were removed hysteroscopically and counselling for other modes of contraceptive or choice of reinsertion of intrauterine device was given to them.

Missing strings was seen in 6 of intra-caesarean group which is similar to the study conducted by Reetu Hooda, Sonika Mann et al.⁵. There was not a single case of perforation which is similar to the study conducted by Reetu Hooda, Sonika Mann et al.⁵. There was no statistically significant difference in menstrual disturbances, infection or perforation between post placental vaginal and intra-caesarean group which is similar to Hooda R, Mann S et al.⁵ There was no statistically significant difference in pain abdomen in both the groups. Missing strings was seen in only intra-caesarean group and was found to be statistically significant when compared to post placental vaginally Copper T380A inserted group. This is similar to the study conducted by Halder A et al.⁶

Expulsion was seen only in post placental vaginally Copper T380A inserted group in present study which is similar to the study conducted by Rahaman M, Col. (Dr.) Sood AK et al.⁷ Gupta D, Sharma S et al also reported lower expulsion after intra-caesarean insertion.⁸ Present study demonstrated removal rate of 12% (6 /50) in post placental vaginally Copper T380A inserted group which is in accordance with the study of Sujananendra M and Goutam R, Arya KN et al and 12% (6/50) in intra-caesarean group which is similar to the study conducted by Garuda L et al.⁹⁻¹¹

CONCLUSION

PPIUCD can be one of the important modes to meet the unmet needs of contraception especially during postpartum period. Both modes of PPIUCD insertion were equally safe for participants except for missing strings which was seen only in intra-caesarean group of participants in present study and was statistically significant.

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REFERENCES

1. "Transforming our world: the 2030 Agenda for Sustainable Development" United Nations - Sustainable Development knowledge platform.

Retrieved 23 August 2015. Available at: <https://sustainabledevelopment.un.org/post2015/transformingourworld>

2. Postpartum IUCD Reference Manual, 2010, Family Planning Division, Ministry of Health and Family Welfare, Government of India.
3. Lopez LM, Bernholc A, Hubacher D, Stuart G, Van Vliet HA. Immediate postpartum insertion of intrauterine device for contraception. The Cochrane Library. 2015 Jan 1.
4. Singal S, Bharti R, Dewan R. Clinical outcome of postplacental Copper T 380A insertion in women delivering by caesarean section. *J Clinical Diagn Res: JCDR.* 2014 Sep;8(9):OC01.
5. Hooda R, Mann S, Nanda S, Gupta A, More H, Bhutani J. Immediate postpartum intrauterine contraceptive device insertions in caesarean and vaginal deliveries: a comparative study of follow-up outcomes. *Int J Reprod Med.* 2016;2016.
6. Halder A, Sowmya MS, Gayen A, Bhattacharya P, Mukherjee S, Datta S. A prospective study to evaluate vaginal insertion and intra-caesarean insertion of post-partum intrauterine contraceptive device. *The J Obstet Gynecol India.* 2016 Feb 1;66(1):35-41.
7. Rahaman M, Col. (Dr.) Sood AK, Col. (Dr.) Shrivastava AK. Evaluation of spontaneous expulsion after immediate postpartum intrauterine contraceptive device (PPIUCDs) insertion. *IOSR J Dental Med Sci (IOSR-JDMS).* 2017;16(5):60-3.
8. Gupta D, Sharma S, Kanhere A, Jahan I. Study of acceptance of intra caesarean IUCD as a method of contraception. *Int J Reprod Contracept Obstet Gynaecol.* 2017;6:5033-7.
9. Sujananendra M. Evaluation of safety, efficacy and expulsion of postplacental and intra-caesarean insertion of intrauterine contraceptive device (PPIUCD). *J Obstet Gynaecol India.* September-October 2014;64(5):337-43.
10. Gautam R, Arya KN, Kharakwal S, Singh S, Trivedi M. Overview of immediate PPIUCD application in Bundelkhand Region. *J Evol Med Dent Sci.* 2014 Aug 18;3(36):9518-26.
11. Garuda L, Kambham S, Neelohita B. Clinical Outcome of Ppiucd (Copper-380A)-Intra-caesarean Insertion. *Indian J Obstet Gynecol Res.* 2015;2(4):218-26.

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