

A PROSPECTIVE STUDY OF EFFICACY AND SAFETY OF POSTPLACENTAL IUCD INSERTION IN VAGINAL AND CAESAREAN DELIVERY

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ABSTRACT:

Aims and objectives:

1. To study the efficacy and safety of postplacental IUCD insertion in vaginal deliveries in 150 cases.
2. To study the efficacy and safety of postplacental IUCD insertion in caesarean deliveries in 150 cases.

Material and Method: A prospective interventional study was conducted in the department of obstetrics and gynecology, S.M.S medical college Jaipur. 150 vaginal and 150 caesarean delivery cases were enrolled in the study.

Results: In our study proportion of parturients accepting postplacental IUCD was 27.98% in vaginal delivery delivery and 36.95% in caesarean delivery. Follow up rate 54.11% in group A and 81.78% in group B. In group A 10% cases had protrusion of tail outside introitus and 8% cases had missing tail and no case of protrusion of tail. In group A 8.7% cases had partially expelled IUCD while no such type of case in group B. Bleeding p/v was present in 8% cases in group A and 6% cases in group B. There was no case of perforation and infection in both the groups.

Conclusion : To conclude postplacental IUCD is an effective and safe method of contraception .

Keywords: Postplacental, IUCD, postcaesarean, postpartum contraception .

Introduction

Population explosion is a great menace for mankind, especially in the third world. In India, population has already crossed one billion in 2000 and is projected to reach 453 billion by 2050, making it the most populous country in the world.

Studies have shown that pregnancies taking place within 24 months of previous birth have higher risk of adverse outcomes like anemia abortions, premature labour, low weight babies, postpartum hemorrhage, fetal loss and maternal death.

The period of time preceding and immediately following the birth of the child represents a valuable opportunity for the woman or couple to learn about and take advantage of family planning services.

With the introduction of JSSY scheme, there is surge in institutional deliveries which can be taken as platform to counsel the couple regarding immediate postpartum insertion of IUCDs.

BENEFITS OF IMMEDIATE PPIUCD

- Convenience; saves time and additional visit.
- Safe because it is certain that she is not pregnant at the time of insertion.
- High motivation (woman and family) for a reliable birth spacing method.
- Has no risk of uterine perforation because of the thick wall of the uterus. Reduced perception of initial side effects (bleeding and cramping). No effect on amount or quality of breast milk.
- The woman has an effective method for contraception before discharge from hospital.
- Saves time as performed on the same delivery table for post-placental/intraCaesarean insertions. Additional evaluations and separate clinical procedure is not required.
- Need for minimal additional instruments, supplies and equipments.
- Convenience for clinical staff; helps relieve overcrowded outpatient facilities thus allowing more women to be served.

According to UN1997, CuT380A confers protection similar to achieved with tubal sterilization. The CuT380A is approved to remain in place for 10 years with the perfect use in which the user checks or examined for the strings regularly as advised to detect expulsion .The probability of pregnancy in the first year is 0.6% (with the typical use may vary from 0.5% to 0.8%)². Likewise CuT 375 also provides protection for 5 years which can be used for spacing next pregnancy.

With the newer understanding of IUCD in term of effectiveness, acceptability, safety, reversibility, feasibility of insertion immediately after birth and increased institutional deliveries with the introduction of JSY, this present study is undertaken.

Aims and Objectives

3. To study the efficacy of postplacental IUCD insertion in vaginal deliveries in 150 cases.
4. To study the efficacy of postplacental IUCD insertion in Caesarean deliveries in 150 cases.

Material and Method

Place of the study: Department of Obstetrics and Gynecology at SMS Medical College & Associated Group of Hospitals, Jaipur.

Study Design: Prospective interventional analytical study.

Sample Size: 150 Vaginal Deliveries
150 Caesarean Deliveries

Source of Data: Women counseled for PPIUCD during antepartum, intrapartum or during preparation of Caesarean section for post placental IUCD insertion in vaginal delivery or Caesarean delivery.

Inclusion Criteria: Women attending ANC clinics and admitted in labour room in early labour (between 28 to 42 weeks of gestation) counseled for PPIUCD insertion, giving consent for the same and not having any exclusion criteria.

Exclusion Criteria

- Chorioamnionitis
- More than 12 hrs from rupture of membrane
- PPH
- Extensive genital trauma
- Known distorted uterine cavity (uterine septum, fibroid uterus etc)
- Previous history of malignant or benign trophoblastic disease
- Sexually transmitted diseases
- Severe anemia
- Antepartum haemorrhage
- Intrauterine death

Assessment of women for provision of PPIUCD were done in 2 phases

The first assessment was the general review of the woman's medical history and eligibility for the method. A second assessment was done immediately prior to insertion to assess those criterias which may have changed the eligibility as a result of labour.

Proper Informed Consent Was Taken

Material for PPIUCD insertion

- CuT380A sterile package.
- Long placental forceps without lock.
- Sponge holding forceps and sim's speculum.

From these selected patients detailed history were recorded in the Proforma regarding such as age, schooling, marital status, housing, family income and city of residence. The past obstetric history, previous and present deliveries, events during labor, hemoglobin and hematocrit levels etc. were noted.

Post insertion cases were followed up just before discharge, SOS and up to 12 weeks after delivery. As to clinical follow-up, the cases were asked about IUCD and examined accordingly. Special attention was given to IUCD expulsion, hemorrhages, pelvic pain, infection, string coming out, exclusive breastfeeding or not, and resuming menses. Out of those, cases were randomly allocated 150 from vaginal delivery and 150 from Caesarean delivery group.

Their results were submitted to statistical analysis to derive the conclusion.

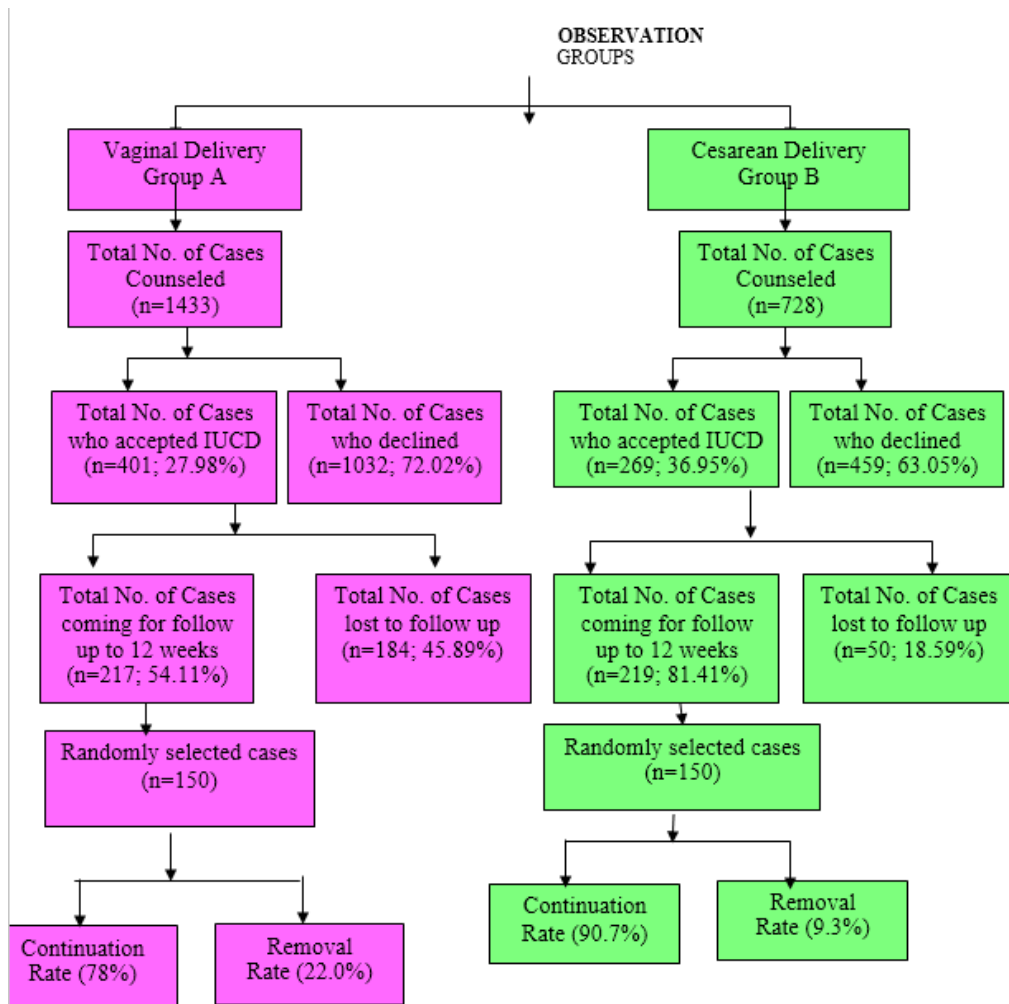


Table No.1
Distribution of Cases according to Antenatal Booking in the Study Groups

Booking Status	Vaginal Delivery (Group A)		Caesarean Delivery (Group B)	
	No.	%	No.	%
Booked	77	51.3	84	56.0
Unbooked	73	48.7	66	1.0
Total	150	100	150	100

According to antenatal booking, 51.3% females in group A and 56% in group B were booked whereas a good percentage of 48.7% in group A and 1% in group B were unbooked.

Table No.2
Distribution of Cases according to Planning of Pregnancy

Planning		Vaginal Delivery (Group A)		Caesarean Delivery (Group B)	
		No.	%	No.	%
Unplanned	Within 2 years	101	67.3	97	64.7
	≥2 years	19	12.7	16	10.7
Planned		30	20.0	37	24.6
Total		150	100	150	100

The above **Table No.** depicts that most of the acceptors had unplanned pregnancy with 80% in group A and 75.4% in group B. Among unplanned pregnancies most of the pregnancies i.e. 67.3% in group A and 64.7% in group B were within 2 years.

Both the groups are comparable to each other.

Table No.3
Distribution of Cases according to Parity

Parity	Vaginal Delivery (Group A)		Caesarean Delivery (Group B)	
	No.	%	No.	%
1	14	9.3	25	16.7
2	40	26.7	103	68.7
3	39	26.0	17	11.2
4	27	18.0	4	2.7
≥5	30	20.0	1	0.7
Total	150	100	150	100
Mean	3.39		2.03	
P	<0.001			

According to parity status, in group A 9.3%, 26.7%, 26.0%, 18.0% and 20.0% of cases are parity 1,2,3,4 and ≥5 respectively. On the contrary in group B a sharp shoot is seen at parity 2 with 68.7% of cases resulting in highly significant p value.

Table No.4
Distribution of Cases according to Complaints up to 12Wks follow up

Complaints	Vaginal Delivery (Group A)		Caesarean Delivery (Group B)		P
	No.	%	No.	%	
Psychosocial	23	15.3	16	10.7	>0.05
Pain	22	14.7	14	9.3	>0.05
Protrusion of tail at introitus	15	10.0	0	-	<0.001
Bleeding PV	12	8.0	9	6.0	>0.05
Spotting	5	3.3	4	2.7	>0.05
Coital Dysfunction	1	0.7	0	-	>0.05
Total no. of Cases having complaints	63	42.0	37	24.7	-
Total No. of Cases	150	100	150	100	-

The cases were enquired about their complaints or issues at follow up and it was found that most common complaint was psychosocial issue (15.3% and 10.7% in groups A and B respectively). In group A other problems were pain (14.7%), bleeding PV (8%), protrusion of tail at introitus (10%) and spotting (3.3%). In group B pain was present in 9.3%, bleeding PV in 6% and spotting in 2.7% of cases. In group B, there was no complaint of protrusion of tail hence p value significant for that parameter, rest all parameters had p value insignificant. The total number of complaints were more than number of patients having complaints as many of them had multiple problems.

Table No.5
Distribution of Cases according to clinical findings up to 12Wks follow up

Clinical Findings	Vaginal Delivery (Group A)		Caesarean Delivery (Group B)		P
	No.	%	No.	%	
Missing Tail	12	8.0	58	38.7	<0.001
Excessive Bleeding through os	12	8.0	9	6.0	>0.05
Protrusion of tail outside introitus with IUCD felt in cervix	13	8.7	0	-	<0.001
Only protrusion of tail outside introitus	2	1.3	0	-	>0.05
Pregnancy	0	-	0	-	-
Infection	0	-	0	-	-
Total no. of cases with positive findings	39	26.0	67	1.7	
Total No. of cases	150	100	150	100	-

The cases were carefully examined and it was found that the most common finding in group A was protrusion of tail outside introitus with IUCD felt in cervix in 8.7% of cases followed by excessive bleeding per vaginam and missing tail in 8% of cases each. In group B missing tail was present in 38.7% of cases followed by excessive bleeding through os in 6% of cases. There was no case of protrusion of tail outside introitus in group B. p value was significant for missing tail and protrusion of tail at introitus with IUCD felt in cervix.

Table No. 6
Distribution of cases according to findings at USG

USG Findings	Vaginal Delivery (Group A)		Caesarean Delivery (Group B)	
	No.	%	No.	%
Normal Findings	12	8.0	58	38.7
Downward displaced IUCD	13	8.7	0	-
Protrusion of tail with normal findings	2	1.3	0	-
PID	0	-	0	-
Perforation	0	-	0	-
Pregnancy	0	-	0	-
Total no. of cases requiring USG	27	18	58	38.7
Total No. of Cases	150	100	150	100

The above Table No. depicted that cases requiring USG were more in group B because many had missed tail in that group requiring USG for confirmation of location. It also revealed that in group A on sonography expelled IUCD was found in 8.7% of cases, IUCD in situ with normal finding in 8% of cases and IUCD in situ with protrusion of tail in 1.3% of cases. In group B IUCD in situ with normal findings was present in 38.7% of cases with no case of expelled IUCD. There was no case of perforation, PID and pregnancy.

Table No. 7
Distribution of Cases according to Management up to 12Wks follow up

Management	Vaginal Delivery (Group A)		Caesarean Delivery (Group B)	
	No.	%	No.	%
Counseling	40	26.7	77	51.3
Removal	36	24.0	14	9.3
Medical Management	14	9.33	17	11.3
Partial Cutting of tail	2	1.3	0	-
Total no. of cases requiring extra management	78	52.0	91	60.7
Routine follow up Care	150	100	150	100
Total no. of cases	150	100	150	100

The above Table No. disclosed that most common management required in both the groups was counseling with 26.7% of cases in group A and 51.3% of cases in group B. In group A it was followed by removal (24%), medical management (9.3%), string shortening (1.3%). In group B, it was followed by medical management (11.3%) and removal (9.3%). Routine follow up care was given to 100% of cases.

Table No. 8
Distribution of Cases according to Cause of Removal up to 12 weeks

Cause of Removal	Vaginal Delivery (Group A)		Caesarean Delivery (Group B)	
	No.	%	No.	%
Bleeding PV	12	8.0	9	6.0
Expelled IUCD	13	8.7	0	-
Pain	6	4.0	4	2.7
Next Child	3	2.0	0	-
Sexual dissatisfaction	1	0.7	0	-
Psychosocial	1	0.7	0	-
Sterilization	0	-	1	0.7
Total no. of removal	36	24	14	9.3
Total no. of Cases	150	100	150	100
P	0.010			

According to above **Table No.**, in group A, expelled IUCD was cause of removal in 8.7% of cases, bleeding PV in 8%, pain 4%, next child 2%, sexual dissatisfaction and psychosocial (0.7% each). In group B, IUCD was removed for bleeding PV in 6% of cases, pain in 2.7% and to be followed by sterilization in 0.7% of cases.

Discussion

The post placental insertion of IUCD is a highly effective and easily accessible family planning method that is safe for use by most parturient women and the opportunity should not be missed in a developing country like ours as the chances of women returning for contraception are uncertain.

The purpose of our study is to see the efficacy of post placental IUCD in vaginal and Caesarean deliveries and also to have a comparative evaluation of the two groups.

In our study proportion of parturients accepting postplacental IUCD was 27.98% in vaginal delivery group similar to the study done at Egypt⁴ and 36.95% in Caesarean delivery group similar to study done at Jhansi¹⁷. Hence a better acceptance in Caesarean delivery group.

The follow up rate up to 12 weeks was 54.11% in group A almost similar to Recalde et al⁸ (43.6%) and 81.78% in group B comparative to Katheit et al¹⁶ (83.4%) due to the fact that operative deliveries have overall better follow up.

Analysis of antenatal care shows a poor attendance as only 50-55% cases were booked in either group in contrast to a Western study¹⁰. The reason is that a great bulk of deliveries conducted in our institute are referred from PHCs and CHCs which lack operative facilities and also at times blood is not available.

On direct questionnaire to the patient, it was found that 80% cases of group A and 75.3% case of group B had present unplanned pregnancy due to lack of proper knowledge of family planning method, so they immediately accepted the IPPI of IUCD as they didn't want next pregnancy or wanted to limit the family size. Most of the unplanned pregnancies were with in 2 years of last child birth similar to the earlier Indian studies^{17,18}.

The acceptance of IPPI in vaginal delivery from P1 to P5 slight clustering of cases at P2 and P3. In Caesarean group maximum acceptance was at P2, similar to previous study^{11,12,16,18}. This is because there is awareness that family size should be limited or atleast spacing should be done, if there is an operative delivery. At the time of Caesarean there is reluctance for permanent family planning method i.e. sterilization, by the family, and obstetrician both due to high perinatal, neonatal and infant mortality rate in India. IPPI Cu-380 provides a very good alternative which provides contraception for 10 years and is also reversible as soon as removed.

Our study depicted that up to 12 weeks of follow up incidence of complaints like pain, bleeding pervaginum, spotting and psychosocial issues were similar in both the groups. However, protrusion of tail at introitus and coital dissatisfaction were only seen in vaginal delivery group in 10% and 0.7% of cases respectively in vaginal delivery group. In Caesarean delivery group there were no such cases. Neither of group case complained of per vaginum discharge.

Both the groups were carefully examined, it was found that in vaginal delivery group 10% of cases had protrusion of tail outside introitus and 8% of cases had missing tail. Among Caesarean delivery group 38.7% of case had missing tail whereas there was no case of protrusion of tail. All these cases were subjected to ultrasonography which revealed that in vaginal delivery group downward displaced IUCDs were found in 8.7% of cases. These downwards displaced IUCDs represented the partially expelled IUCDs in these 8.7% of cases, hence the expulsion rate similar to previous studies^{14,15,16}. 1.3% of cases had protrusion of tail at introitus but with IUCD in situ. There was no case of expelled IUCD in Caesarean group similar to previous studies^{3,6,7}. This is because of the proper fundal placement of IUCD by senior surgeon under direct visualization whereas in vaginal delivery insertion is a blind procedure.

Our study revealed that on sonographic examination all of the cases with missing tail had IUCD in situ. On comparing both the groups our study showed that missing tail was present only in 8% of cases in vaginal delivery group almost similar to recent studies^{17,18} and 38.7% of cases in Caesarean group similar to the study done by Ricalde⁸ 35%. This is because of the coiling of tail of IUCD above the tighter cervix resulting in a highly significant difference. Rest all parameters were similar in both groups. Bleeding per vaginum was present in 8% of cases in group A and 6% of cases of group B almost similar to previous study¹⁵. There was no case of perforation in both the groups similar to various studies^{1,2,8,13-15}. There was no case of infection during the course of study in contrast to previous studies^{8,11,17}. This seemed to be because of proper training of medical fraternity, appropriate case selection and good antibiotic coverage.

Hence, our study showed that there were no major complications in either group similar to various studies^{13,18}. It also revealed that post placental insertion during Caesarean section are associated with lower expulsion rates than postplacental vaginal insertion similar to study done by Kapp and Curtis⁹ and Gupta et al¹⁵. Complication rates did not differ by the mode of delivery^{3,9}. Apart from the routine care given to all the cases, most of the cases, 26.7% in group A and 51.3% in group B required extra counseling regarding the psychosocial issues or various quarries. 9.3% and 11.3% of cases in group A and group B respectively were easily managed with medical treatment and 1.3% of cases in group A required partial cutting of tail.

Our study represented that 24% of cases in group A and 9.3% of cases in group B required or opted for removal. Analysis of the causes of removal disclosed that apart from the removal done in 8.7% cases in vaginal delivery group for partially expelled IUCDs, in vaginal group bleeding per vaginum and pain were the two most common causes for removal with 8% and 4% of cases respectively. Desire of next child, sexual dissatisfaction and psychosocial causes led to removal of IUCD in 2%, 0.7% and 0.7% of cases respectively. In Caesarean group although IUCD was removed for bleeding PV and pain in 6% and 2.7% of cases respectively but there was no removal done for next child, sexual dissatisfaction, psychosocial issues and expelled IUCD¹⁵.

Hence through our study it can be inferred that continuation rate in vaginal delivery group was 78% similar to study done by Celen et al⁵ and 92% in Caesarean group similar to study done by Fernandex et al⁶ showing a better compliance from the latter group.

Conclusion

To conclude post placental IUCD is an effective method of contraception. In our area where the situation is of limited access to post partum case and inability of women to return back for contraceptive measures, the level of programmatic achievement of our study can be considered as success.

References

1. Lavin P, Waszak C, Bravo C. Preliminary report on a postpartum CuT 200 study, Santiago Chile Int J Gynaecol Obstet 1983; 21:71-75.
2. Yan JS, Champion CB. A comparative study of the Copper T and delta T Singapore Obstet Gynaecol 1984; 15:1-47.
3. Bhalerao AR, Purandare MC. Post-puerperal Cu-T insertion: a prospective study. J Postgrad Med 1989; 35(2):70-3.
4. Zhou SW, Chi IC. Immediate postpartum IUD insertions in a Chinese hospital—a two year follow-up. Int J Gynaecol Obstet 1991; 35:157-64.
5. Alvarez Pelayo J, Borbolla Sala ME. IUD insertion during Caesarean section and its most frequent complications. Ginecol Ostet Mex 1994; 62:330-5.
6. Khan ME, Patel BC. Male involvement in family planning: a knowledge, attitude, behaviour and practice survey of Agra district. New Delhi Population Council 1997.
7. Mohamed SA, Kamel MA, Shaaban OM, Salem HT. Acceptability for the use of postpartum intrauterine contraceptive devices: Assiut experience. Med Princ Pract. 2003; 12(3):170-5.
8. Celen S, Moroy P, Sucak A, Aktulay A, Danisman N. Clinical outcomes of early postplacental insertion of intrauterine contraceptive devices. Contraception 2004;69:279-82.
9. Müller ALL, Ramos JGL, Martins-Costa SH, et al. Transvaginal ultrasonographic assessment of the expulsion rate of intrauterine devices inserted in the immediate postpartum period: a pilot study. Contraception 2005; 72:192-5.
10. Ricalde RL, Tobias GM, Perez CR, Ramirez NV. Random comparative study between intrauterine device multiloal Cu375 and TCu380A inserted in the postpartum period. Ginecol Obstet Mex 2006; 74:306-11.
11. Kapp N, Curtis KM. Intrauterine device insertion during the postpartum period: A systematic review. Contraception 2009; 80:327-336.
12. Kittur S, Kabadi YM. International J of Reproduction, Contraception, Obstetrics and Gynecology Int J Reprod Contracept Obstet Gynecol 2012; 1(1):26-32.
13. Levi E, Cantillo E, Ades V, Banks E. Immediate post placental IUD insertion at Caesarean delivery : a prospective cohort study. 2012.
14. Shukla M, Qureshi S, Chandravati. Postplacental intrauterine device insertion – A five year experience at a tertiary care center in North India. Ind J med Res 2012; 136:432-5.
15. Gupta A, Verma A, Chauhan J. Evaluation of PPIUCD versus interval IUCD (380A) insertion in a teaching hospital of Western U.P. Int J Reprod Contracept Obstet Gynecol 2013; 2(2):204-208.
16. Kaithe G, Agarwal J. Evaluation of post-placental intrauterine device (PPIUCD) in terms of awareness, acceptance, and expulsion in a tertiary care centre. Int J Reprod Contracept Obst Gynecol 2013; 2(4):539-543.
17. Gautam R, Arya KN, Kharakwal S, Singh S, Trivedi M. Overview of immediate PPIUCD application in bundelkhand region. J Evol Med Dental Sci 2014; 3(36):9518-9526.
18. Mishra S. Evaluation of safety, Efficacy, and expulsion of post placental and intra Caesarean insertion of intrauterine contraceptive devices (PPIUCD). The federations of Obst Gynaecol Soc of India 2014; 64(5) : 337-343.