Research Article

Clinical Outcome of Intra Caesarean Intrauterine Contraceptive Device Insertion

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Abstract

Background: Intrauterine contraceptive devices (IUCDs) are considered as one of the safest and effective form of contraception. There are 128 million women users worldwide. We fall in those countries where unmet need of contraception is still high. Motivating women for intra caesarean copper T insertion can reduce the incidence of unplanned pregnancies. Postpartum intrauterine contraceptive device (PPIUCD) insertion is an effective, long-term, reversible, non-hormonal contraceptive and best suited for most women. This study was conducted to evaluate the long term complications like bleeding, pain, expulsion rate, perforation, infection and missing strings amongst the users.

Objective: To determine the frequency of complications of intra - caesarean IUCD insertion.

Methodology: This study was conducted in Lady Willingdon hospital, Lahore after approval of ethical committee. The non-probability purposive sampling technique was used. Informed consent was taken from all the patients. IUCD insertion was done under aseptic technique by the researcher. Women were advised to attend for follow-up after 6 weeks. Information was obtained about the complications of IUCD through a proforma that was same for all cases and the variables are listed under heading of operational definitions.

Setting: Lady Willingdon Hospital Lahore, a Leading Tertiary Care Hospital

Results: Total no of insertions in our study were 250 and they were followed for a period of 6 months. Mean age of the patients was 27.16 years. The patients who received PPIUCD with no previous baby was 14.8%, para one 18.4%, para two were 24.4% and 42.4% were with higher parity. Continuation rate was higher with 85.2% at the end of 6 months as compared to the expulsion rate of 14.8%. Bleeding was reported in 14 %, pain in 10% and infection in 18 % of cases. Missing strings were observed in 12% of cases. Removal rate after 6 months was 10%. Majority of the removal were due to infection 5% followed by planning a pregnancy in 3%. Pain was the cause for removal in only 0.5% and bleeding in 0.5% cases.

Conclusion: Intra caesarean IUCD insertion was concluded to be a safe and effective method of contraception for spacing with high continuance rate, low expulsion and complication rates.

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Key Words: Intrauterine contraceptive devices, Postpartum intrauterine contraceptive device

Introduction

IUCDs are considered as one of the safest, most effective methods of contraception and there are 128 million users worldwide. They are affordable, convenient to use and do not require re-supply visits.[1] Providing access to intrauterine contraception is an important measure to reduce the rate of unplanned pregnancies. Amongst IUCD users, there is an average of about 6 pregnancies per 1000 wom-

en years.[2,3] IUCDs can be inserted immediately after a first and second trimester miscarriages or termination of pregnancies and immediately postpartum or >4 weeks postpartum.[4] In case of a Caesarean section, immediate post placental IUCD insertion provides an opportunity to achieve long term contraception with minimal discomfort for patients. Studies conducted on this method have not shown any increase in the risk of infection or other complications. Some reports, in fact, indicated that women who deliver by Caesarean section may have lower expulsion rate as compared to those who have vaginal delivery with immediate IUCD insertion.[5]

In a study, 80 women who accepted intraoperative placement of IUCD, the post insertion adverse events observed were heavy bleeding in 1(1.4%) sepsis 1(1.4%) and expulsion rate of 1(1.4%) by the end of 6 week.[6] The rate of expulsion was 11.6% at the end of six months.[7] There is significant correlation between the use of IUCD and the presence of trichomonas vaginalis ($P<0.05$).[8] In another study bacterial vaginosis in IUCD users was 11.7%.[9] Women using IUCD are at an increased risk of developing pelvic inflammatory disease.[10] Meta-analysis from 15 articles showed minimal complications among women who had an IUCD insertion during the postpartum period. Whereas there was increase in the rate of expulsion in whom there was delayed postpartum insertion as compared to immediate insertion.[5]

Risk of an ectopic pregnancy is 20% in the IUCD users. Uterine perforation during insertion is rare i.e. 0.6 to 16 cases per 1000 insertions, regardless of the type of IUCD used.[4] Population explosion is the biggest problem confronting Pakistan that needs proper family planning service. In pregnancy women are highly motivated and it is easier to counsel them for contraception using IUCD. Interval IUCD are not placed commonly after Caesarean section and there is no large data available regarding its complications in Pakistan. By doing this study we got recent magnitude regarding complications of transcaesarean placement of IUCD. It would then help us to counteract and prevent these complications to make trans-caesarean IUCD placement an effective method for contraception.

Methods

A total of 250 patients undergoing Caesarean section fulfilling the inclusion criteria were included in this study. An informed consent was obtained for using their data in research. This study was conducted after clearance from ethical committee. IUCD insertion were done under aseptic technique by the researcher. Women were advised to attend for follow-up after 6 weeks and then 6 months. Information were obtained about the complications of IUCD through a proforma that were same for all cases and contained the variables that are listed under heading of operational definitions.

Results

Total of 250 cases were enrolled in the study. The mean age of the patients was 27±4 years with minimum and maximum ages of 20 & 35 years, respectively. In our study 37(14.80%) patients appeared with no parity, 46(18.40%) patients appeared with parity one, 61(24.40%) patients appeared with parity two, 53(21.20%) appeared with parity three and parity four, respectively. The study results showed that the expulsion was observed in 37 (14.8%) patients and it was not found in 213 (85.2%) patients.

In this study infection occurred in in 18% patients and was not found in 82% patients. In our study, in 37 nulliparous females, infection occurred in 1 case, similarly in 46 patients with parity one, infection occurred in 7 cases, in 61 patients with parity two, infection occurred in 12 cases, in 53 patients with parity three, infection occurred in 8 cases and in 53 patients with parity four, infection occurred in 17 cases. Statistically there is significant difference was found between parity and infection.

Study results showed that out of 37 nulliparous females, expulsion occurred in 4 cases, similarly in 46 patients with parity one, expulsion occurred in 8 cases, in 61 patients, expulsion occurred in 8 cases, in 53 patients with parity three, expulsion occurred in 7 cases and in 53 patients with parity four, expul-

sion occurred in 10 cases. Statistically insignificant difference was found between parity and complication of expulsion.

Our study also depicted that 35 patients (14%) out of 250 presented with irregular or heavy vaginal bleeding and 25 patients (10%) with continues severe or off and on pain. missing strings of IUCD were found in 30 (12%) of cases while IUCD confirmed in place by ultrasound.

After completion of our study for 6 months removal rate was 10%, 25 patients opted for not to continue this method further. out of these patients 13 patients (5%) told the cause of their removal is infection and continues vaginal discharge, 8 patients (3%) opted due to planning of next pregnancy, in 2 patients (0.5%) cause was pain and in 2 (0.5%) was bleeding.

Table I: *Descriptive Statistics of Age (Years)*

Age (years)	**n**	250
	Mean	27.16
	SD	4.14
	Minimum	20.00
	Maximum	35.00

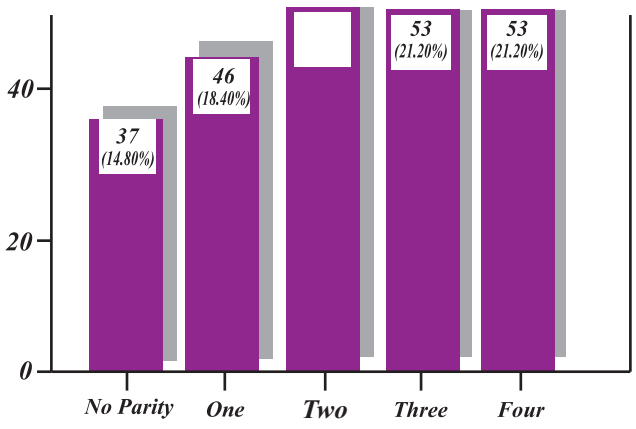

Fig # 1: *Frequency Distribution of Parity*

Table II: *Frequency Distribution of Expulsion*

		Frequency	Percent
Expulsion	**Yes**	37	**14.8**
	No	213	**85.2**
	Total	**250**	**100.0**

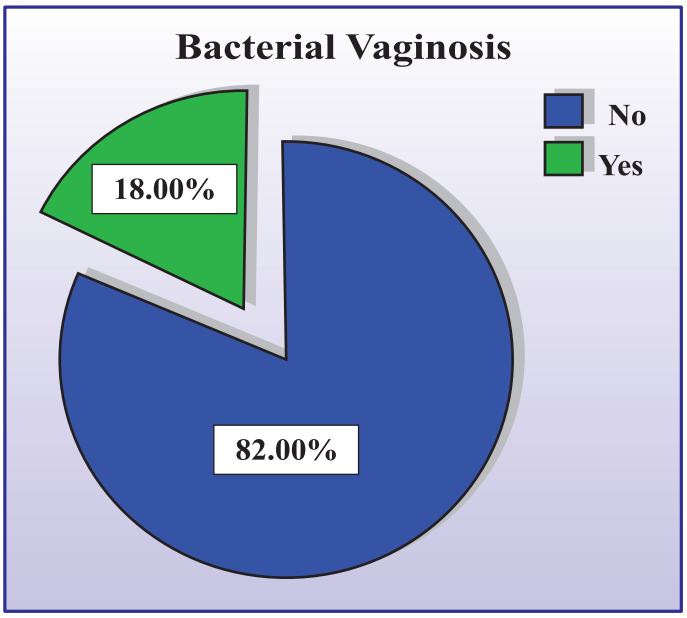

Fig # 2: *Frequency Distribution of Bacterial Vaginosis*

Table # III: *Comparison of Expulsion in Different Parity Groups*

		Expulsion		Total
		Yes	No	
Parity	**Nulliparous**	4	33	**37**
	One	8	38	**46**
	Two	8	53	**61**
	Three	7	46	**53**
	Four	10	43	**53**
	Total	**37**	**213**	**250**

Chi value=1.65
p-value=0.800 (Insignificant)

Table 4: *Comparison of BV in Different Parity Groups*

		Bacterial Vaginosis		Total
		Yes	No	
Parity	**Nulliparous**	1	36	**37**
	One	7	39	**46**
	Two	12	49	**61**
	Three	8	45	**53**
	Four	17	36	**53**
	Total	**45**	**205**	250

Chi value=13.64
p-value=0.009 (Significant)

Discussion:

An intrauterine contraceptive device (IUCD) is a commonly used reversible form of contraception with 100 million estimated users worldwide.[10-11] The effectiveness of IUCD's, especially the TCu 380A, has been shown to be comparable to tubal sterilization over the long term. However, it has the additional advantage of being easily reversible.[10-12] The disadvantage of IUCD contraception is the rate of expulsion and side effects which is mostly pain and erratic bleeding. This sometimes necessitates early removal. The present study was conducted at Lady Willingdon hospital, Lahore to determine the frequency complications of intra-caesarean IUCD insertions.

According to our study results the expulsion complication of IUCD was seen in 37 (14.8%) patients. In our study insignificant difference was found between the expulsion and parity status of the patients. Some of the studies discussed below support the outcome of our study.

In the study by SevkiÇelen et al showed that at 6- and 12-month cumulative rates of expulsion was 10.6 and 17.6 per 100 women respectively with about one third of the subjects having complete expulsion.[13] In another study where TCu 380A model IUCD was inserted immediately after the delivery of placenta in Caesarean (26%) and vaginal (74%) deliveries, a cumulative 1-year expulsion rate of 12.3 per 100 women was observed.[14]

Gueye M et al concluded in their study that the insertion of the IUCD following Caesarean delivery had an acceptable rate of expulsion with no increase in rate of adverse effects. The rate of expulsion was 2.2%.[15] In a study done in China by Chi et al., intra-caesarean insertion was seen to have lower rates of expulsion at 1.2% compared to vaginal 9.6%.[16] Low rate was reflected in Khamis et al study. They showed expulsion rate of 1.4%.[6]

A Cochrane database of systematic reviews 2003 reported an expulsion rate of 2.4 to 5.2% by the end of first year.[17]. The rate of expulsion was 11.6% at 6th month.[7] There was significant correlation between the use of IUCD and the presence of trichomonas vaginalis ($P<0.05$).[8]

A study done in Africa (Kenya and Mali) showed the importance of trained personnel and experience in the uptake of immediate postpartum IUCD. The expulsion rate in Nyeri PGH was only 1%. These low rates of expulsion were attributed to the extensive training and experience of the Kenyan providers as compared to Mali.[18-19] Case series report also suggested that insertion at Cesarean section have a lower expulsion rate of 1.2% to insertion immediately after Vaginal birth 9.6%.[20, 21] According to our study results, the infection was observed in 18% patients. In our study, statistically significant results were observed between the BV and parity of the patients i.e. p-value=0.009. Studies have proven higher rates of BV in women using the IUCD than in women using other contraceptive methods.[22-24]

In a Canadian study, 70 women were tested for bacterial vaginosis(BV) and other vaginal infections prior to having an IUCD inserted.[25] In another study BV in IUCD users was 11.7%.[9] Women using IUCD are seen to be at an increased risk of developing pelvic inflammatory diseases as well.[10] In the 2007 IUCD guidelines published by RCOG advised against the testing for BV or treating asymptomatic women before insertion of an IUCD due to lack of evidence of harm.[26,27]

A study by Vilvapriya S., Veeraragavan K, the discontinuation of IUCD in their study results was 12.7 % in which majority 7.2 % opted for permanent methods of sterilisation followed by planning next pregnancy 2.55%. Pain was the cause of removal in only 0.67% and bleeding in 1.67%. This is almost comparable to one study but in our study the leading cause of removal was due to infection 5%, second was planning of next pergnancy 3%, pain and bleeding was cause in 0.5% of cases.

Similarly pain and bleeding and missing strings results 8.9%,8.5% and 11.9% were almost comparable with our results of 10% ,14% and 12%. but important thing in this was duration of study that was of 30 months.

Conclusion:

The conclusion of the study showed effectiveness of Intra caesarean IUCD insertion as a safe and effective method of contraception for spacing. It had higher continuation rate, low expulsion and complication rates. It can be used safely and affectively for child spacing specially in those ladies undergoing operative delivery and it provides prompt and effective reversible contraceptive for those who wants to avoid permanent methods of sterilization.

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Conflict of Interest: The authors declare no conflict of interest
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