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Frequency of complications in immediate post-partum intrauterine contraceptive device insertion

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ABSTRACT

Objective: To Determine The Frequency Of Complications (Pid, Expulsion Of Iud) And Missed String) Following Post-Partum Intrauterine Device Insertion

Study Design: Descriptive Study.

Setting: This Study Was Conducted At Department Of Obstetrics & Gynaecology, Shaikh Zaid Women Hospital, Larakana, Pakistan.

Duration: Six Months After The Approval Of Synopsis From December 9, 2019

To June 8, 2020.

Materials And Methods: All Patients Who Fulfilled The Inclusion Criteria And Visited To Shaikh Zyed Women Hospital, Larkana Were Included In The Study. Informed Consent Was Taken After Explaining The Procedure, Risks And Benefits Of The Study. Women Underwent Cesarean Delivery; The Iud Inserter Was Inserted Through The Hysterotomy Site After Delivery Of Baby And Placenta. In Those Patients Underwent Vaginal Delivery, It Was Placed In Uterine Fundus With The Help Of Long And Curved Forceps Without Lock (Kelly's Placental Forceps) For Vaginal Insertions. All Patients Were Assessed At 6 Weeks Duration For Complications (Pid, Expulsion Of Iud And Missed String). All The Collected Data Were Entered Into The Proforma Attached At The End And Used Electronically For Research Purpose.

Results: Mean ± Sd Of Age Was 28.5±6.6 Years. In Distribution For Mode Of Delivery, 85 (34.6%) Patients Had Vaginal Delivery While 161 (65.4%) Had Cesarean Section. Expulsion Of Iud Was Noted As Most Common Complication I.E. 55 (22.3%) Followed By Missed String 33 (13.4%) And Pelvic Inflammatory Disease (Pid) Was Documented In 16 (6.5%), While 142 (57.8%) Patients Had No Complications.

Conclusion: It Is To Be Concluded That Complication Rate Of Post-Partum Intrauterine Device Insertion Is Found To Be Fairly High. It Can Be Avoided If Proper Preventive Measures Are Taken And Increase Awareness Regarding Ppiud And Its Associated Complications **.**.

Keywords: Complications, Pelvic Inflammatory Disease, Postpartum, Intrauterine Device Insertion, Missed String.

1. INTRODUCTION

Usually after delivery of fetus, women are called for follow up visit at 3-6 weeks duration and many patients do not use any contraceptive till that time, when they are guided by healthcare provider regarding these techniques. Due to this period of not using any contraceptive, unplanned pregnancy ensues. Therefore, intrauterine device (IUD) is considered the best method by many gynecologists for protection in immediate postpartum period [1,2]. Howser, still it is not being commonly used in many countries, including western countries and US where only 3.5% of women use this particular technique for

contraception. There may be many reasons for this under usage which may include lack of appropriate information provided by physicians to the patients and families, needing another visit and timing for its insertion, cost and misconceptions about IUDs [3].

Adequate and effective usage of contraceptive techniques following delivery of the baby is important as it prolongs gap between two births which definitely helps mothers to gain health and nutritional deficiencies after childbirth. It is particularly important in context for our social setups, where mothers have to take care of their home responsibilities at the same time and soon after childbirth. So if unintentional pregnancies are avoided, it helps families and mothers to improve their psychological, social and financial costs [4,5]. In order to improve the maternal as well as fetal outcomes by increasing the gap between births. World Health Organization (WITO) las recommended a gap of at least 24 months or 2 years so that minimal hazardous effects of decreasing health to be faced by pregnant women. Like any contraceptive technique, IUD is also associated with some complications including expulsion, bleeding, pelvic inflammatory disease [6], missed string and pelvic paint [7,8]..

In a study, frequency of expulsion of post-partum TUD was formed in 4 of 20 (20%) patients [9]. In another study, PID was found in 0 of 300 patients and missed string was found in 3/300 (1%) patients after postpartum IUD [10]. In a large study, which included 1013 cases of PPIUD, complications found were 16 (2.7%) cases of uterine infection.

11 (2.3%) IUD expulsions, 26 (4.4%) IUD removals, and 33 (5.5%) with overall method discontinuation [11]. The rationale of this study is that giving the increasing population of Pakistan, it is necessary to educate our people regarding birth control methods. As IUD is one of the safest methods for this matter, however, there are still complications, which may occur with IUD insertion, so this study helped in educating our population regarding this important aspect. As IUD mas pose side effects to patients, therefore it is important to identify frequency of complications among these patients. Although previous studies have been condensed on the topic, however, this study particularly addressed the potential complications in our own society, as minimal studies from our part of world are available.

2. MATERIAL & METHODS

STUDY DESIGN

Descriptive Study.

STUDY SETTING

Department of Obstetrics & Gynaecology, Shaikh Zyed Women Hospital, Larakana.

DURATION OF STUDY

Six months after the approval of synopsis from ***December 9, 2019***

to ***June 8, 2020***.

SAMPLE SIZE

A sample size of 246 patients was calculated taking confidence level as 95%, precision as 5% and expected expulsion rate as 20% in patients with postpartum IUD [9].

SAMPLING TECHNIQUE

Non-probability, Consecutive Sampling

SAMPLE SELECTION INCLUSION CRITERIA

All the female patients of age 18-40 years undergoing vaginal of caesarean section delivery in our hospital.

Patients with any gravidity and any parity.

Patients willing to have contraceptive device to be inserted.

EXCLUSION CRITERIA

Patients with prolonged rupture of membranes > 18 hours (on clinical records) (as it was a contraindication for IUD).

Potentially infected dai handling cases (Past History) (because they frequently had puerperal infection).

Patients had fever during labour (Past History) (because they frequently had puerperal infection).

DATA COLLECTION

Approval from hospital ethical committee and CPSP was obtained. After approval of the synopsis, patients fulfilling the criteria were included in the study. Patients were told about merits of study and in informed consent was taken for inclusion in the study. They were counseled regarding IUD insertion and consent was obtained for it to be inserted. Among those underwent cesarean delivery, the IUD inserter was inserted through the hysterotomy site after delivery of baby and placenta. The assistant placed a finger on the IUD 10 position the IUD at the uterine fundus. The inserter was then removed, and a ring

forceps were inserted through the hysterotomy site to grasp the strings and insert them through the cervix from above, into the vagina. The ring forceps were then immediately removed from the sterile field to prevent vaginal contamination of the pelvic cavity. In those patients underwent vaginal delivery, it was placed in uterine

fundus with the help of long and curved forceps without lock (Kelly's Placental forceps) for vaginal insertions. All the demographic details of the patients including age, gravidity and parity were noted. Post- operative care was provided as per departmental protocol. All patients were assessed at 6 weeks duration for complications (PID, expulsion of IUD and missed string) as per operational definition. All data was recorded on the proforma.

DATA ANALYSIS

The collected data was entered and analyzed accordingly using SPSS version 20. Mean and standard deviation were calculated for \ age, gravidity and parity, frequencies and percentages were calculated for mode of delivery, PID, expulsion on IUD and missed string.

3. RESULTS

In this study 246 women were included to assess the complications of post-partum intrauterine device insertion and the results were analyzed as:

Mean ± SD of age was 28.5±6.6 with C.I (27.67…….29.32) years as shown in **TABLE 1**.

Mean ± SD of parity was 1.9±1.1 with C.I (1.76…….2.03) as shown in

TABLE 2.

Mean ± SD of gravidity was 2.8±1.6 with C.I (2.59…….3.00) as shown

in **TABLE 3**.

In distribution of mode of delivery, 85 (34.6%) patients had vaginal delivery while 161 (65.4%) had cesarean section as shown in **FIGURE 1**.

In distribution of complications PID were documented as 16 (6.5%) women, expulsion of IUD 55 (22.3%) and missed string were noted in 33 (13.4%) women while 142 (57.8%) women had no complications as shown in **TABLE 4**.

TABLE # 1 DESCRIPTIVE STATISTICS OF AGE n=246

MEAN	28.5 (Years)
±STANDARD DEVIATION	6.6
95% CONFIDENCE INTERVAL	27.67…….29.32
MINIMUM	18
MAXIMUM	40
RANGE	22

TABLE # 2 DESCRIPTIVE STATISTICS OF PARITY n=246

MEAN	1.9
±STANDARD DEVIATION	1.1
95% CONFIDENCE INTERVAL	1.76…….2.03
MINIMUM	0
MAXIMUM	4
RANGE	4

TABLE # 3 DESCRIPTIVE STATISTICS OF GRAVIDITY n=246

MEAN	2.8
±STANDARD DEVIATION	1.6
95% CONFIDENCE INTERVAL	2.59…….3.00
MINIMUM	1
MAXIMUM	8
RANGE	7

FIGURE # 1: FREQUENCY FOR MODE OF DELIVERY n=246

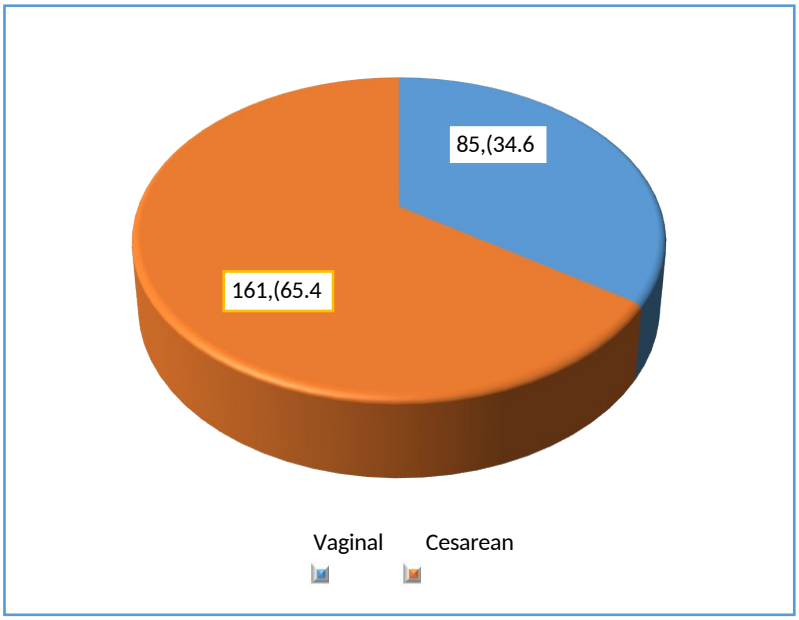

TABLE # 4 FREQUENCY OF COMPLICATIONS n=246

COMPLICATIONS	FREQUENCY	PERCENTAGE
PID	16	6.5
EXPULSION OF IUD	55	22.3
MISSED STRING	33	13.4
NO COMPLICATIONS	142	57.8

4. DISCUSSION

Women undergoing caesarean section seem to have greater probability of accepting postpartum IUCD possibly due to post caesarean conception fear. Further, the number of women following up after intra caesarean insertions was also higher than post placental vaginal insertions, although this difference was not statistically significant. It appears that women undergoing caesarean delivery are more compliant with follow-up visits probably for fear of complications. Although all the women who underwent immediate postpartum IUCD insertions (vaginal or caesarean) were counselled and advised to come for a follow-up examination at our institute, only a few women actually reported for a follow-up clinic visit. The possible

explanation could be that even though a large number of rural women from all over our state and neighboring districts come to our tertiary centre for purpose of delivery, for follow-up examination they prefer visiting their local health centers due to large distances and transportation problems.

In a prospective study of follow-up of PPIUCD from a peripheral health centre of India, scheduled follow up was observed in 65.2% cases. Around 22% cases had to be contacted telephonically and transportation incentives were provided for coming for follow-up [12]. Shukla et al. reported a follow-up of 78.7% in a prospective longitudinal study [13].

In women reporting symptoms of unusual vaginal discharge, actual infection was present in only 1.75% cases on clinical examination. It is known that some women report increased vaginal discharge with the IUCD, which is usually normal leucorrhoea and not a sign of infection [14]. Women delivering by caesarean section seem to be more apprehensive regarding symptoms of discharge, having undergone a surgical procedure. A multicentric follow-up study from India reported an overall infection rate of 4.5% among PPIUCD insertions [15]. Welkovic et al. compared infection rates among women with post placental IUD and women without IUD and found no difference [16]. Some studies have found no incidence of infection after PPIUCD insertion [17,18].

The symptom of irregular bleeding per vaginum was not influenced by route of insertion. The women mainly complained of excessive bleeding and were treated adequately with Nonsteroidal Anti- Inflammatory Drugs (NSAIDs) and haematinics. Shukla et al. indicated a higher incidence of menorrhagia (27.2%) with use of CuT 200 in postpartum women [14]**.** Gupta et al. observed bleeding in 4.3% PPIUCD cases using CuT-380-A [18]. Other studies using CuT-380 A have reported IUCD removal due to bleeding/pain as 6% to 8% [12,18]. Difference in types of IUCD could possibly explain the different rates of bleeding problems.

In the present study, a lesser number of spontaneous IUCD expulsions were observed as compared to other studies. Celen et al. reported 1- year cumulative expulsion rates of 12.6% and 17.6% in two different studies of PPIUCD insertions [19,17]. In a recent study by Kittur and Kabadi, using similar technique and timing (within 10 minutes of placental delivery) of PPIUCD (CuT-380 A), as in our study, and also trained providers resulted in similar fewer expulsions (5.23%) as in the present study [12]. Timing of IUCD insertion is an important determinant of expulsions. UN-POPIN report stated that 6-month cumulative expulsion rate was 9% for immediate post placental insertions (within 10 minutes) compared with 37% for insertions between 24 and 48 hours after delivery [20].

The expulsions were significantly higher in post placental IUCD insertions after vaginal deliveries as compared to caesarean insertions. This difference was also observed in a recent systematic review of PPIUCD insertions [21]. Gupta et al. also reported lower expulsions after intra caesarean insertions [18]. Letti Muller et al. studied expulsion rates of immediate post placental CuT-380 A insertion by transvaginal sonography and found statistically significant higher expulsions in vaginal insertions than caesarean insertions [21]. In the present study, even if we combine the discontinuations (removal of IUCD for different medical or personal reasons) and spontaneous expulsions we still have a commendable IUCD continuation rate. In the absence of IPPIUCD insertions, these women would have left the hospital premises without effective postpartum contraception. Similar rates of removal of PPIUCD have been reported in recent studies [13-15].

In our study, the mean age was noted as 28.5±6.6 years. Whitaker AK, et al [9] noted the mean age as 27.1±6.2 years. A study conducted by Arck PC [22], reported the mean age as 29.4 years. In this study, the mean parity was found to be 1.9±1.1. Tan PC, et al [23] also reported the prevalence of mean parity as 1.4±1.5. Sridhar SB, et al [24] stated the mean parity as 0.79±0.89. In recent study, the mean gravidity was 2.8±1.6. In present study, in distribution of mode of delivery, 85 (34.6%) patients had vaginal delivery while 161 (65.4%) had cesarean section. In a two group study [25] cesarean section was noted as 50.7% and 43%. In the study of Iqbal S, et al [26], 62% had normal vaginal delivery and 38% had Caesarean delivery. In a study conducted by Shaikh F, et al [27], vaginal delivery occurred in 59 (59%) cases and caesarean section was performed in 41 (41%). Khurshid N, et al [28] stated that in her study, vaginal delivery occurred in 67% of cases, 33% of cases had caesarean section.

In current study, complications of PPIUD was noted as PID 16 (6.5%), expulsion 55 (22.3%), and missed string was documented in 33 (13.4%) women while 142 (57.8%) had no complications. Whitaker AK, et al [9] reported expulsion in 28.6% patients.

In our study, stratification of age, parity, gravidity and modes of delivery were done with respect to complications.

One of the main observations at follow-up was that of undescended IUCD strings. The practice of leaving the full length of IUCD string in uterine cavity during caesarean section and not passing it through the cervix, unlike study by Celen et al., may have had a role in the significant difference in the incidence of undescended strings in intra caesarean insertions. Our technique might also be the reason for lower expulsion rates as compared to study by Celen et al. (5.3%) for intra caesarean IUCD insertions at 6 weeks of follow-up [19]. Counselling the women and confirmation of IUCD in uterine cavity by ultrasound are important to reassure the women and encourage them to continue with the device.

5. CONCLUSION

It is to be concluded that complication rate of post-partum intrauterine device insertion is found to be fairly high. It can be

avoided if proper preventive measures are taken and increase awareness regarding PPIUD and its associated complications. More epidemiological studies are necessary using large sample size with multiple study centers in Pakistan are needed to confirm the findings of the present study..

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