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FREQUENCY OF EXPULSION IN IMMEDIATE POST-PARTUM INTRAUTERINE CONTRACEPTIVE DEVICE INSERTION

Dr. Nasreen Sultana*[1], Dr. Rehana Kamal[2], Dr. Afshan Mushtaq[3], Dr. Huma Naeem Tareen[4], Dr. Muhammad Saleem[5], Dr. Hayat Muhammad Kakar[6], Dr. Saleem Khan[7], Zaman Kasi[8]

[1,2,3]Bolan Medical College, Quetta, Obs Gyane Department.

[4]Bolan Medical College, Quetta, Cardiology Department.

[5]Bolan Medical College, Quetta, Surgery Department.

[6]BINUQ, Quetta, Urology Department.

[7]Bolan Medical College, Quetta, Neurosurgery Department.

[8]CPSP, Regional Centre Quetta.

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***Corresponding Author**
Dr. Nasreen Sultana
Bolan Medical College, Quetta, Obs Gyane Department.

ABSTRACT

Introduction: Insertion of an intrauterine contraceptive device (IUD) immediately after delivery has been recommended by the WHO, as one of the safe and effective methods of temporary contraception. In the immediate post delivery period the women are highly motivated and need an effective method for contraception so that the child can be brought up with a relaxed mind without the worry of unintended pregnancy. **Objective:** To determine the frequency of expulsion of IUD following post-partum IUD insertion. **Study Design:** It was a cross-sectional study. **Setting & Duration of Study:** Study was conducted in Gynaecology and Obstetrics department, BMC/SPH Hospital, Quetta. from 17-08-2019 to 16-08-2020, Sampling Technique: Non- probability consecutive sampling. **Methodology:** They were counseled regarding IUD insertion and consent was obtained for it to be inserted. The inserter was then removed, and a ring forceps was inserted through the hysterotomy site to grasp the strings and insert them through the cervix from above, into the vagina. In those patients undergoing vaginal delivery, it was placed in uterine fundus with the help of long and curved forceps without lock for vaginal insertions. All patients were assessed at 6 weeks duration for expulsion as per operational definition. All data was analyzed using SPSS version 24.0. **Results:** A total of 305 patients

were included in the study. The mean age of the patients was found to be 29.75 ± 5.50 years. Most of the patients had gestational age ≤ 37 weeks. The mean gestational age was 36.26±3.07 weeks. The mean parity of patients was found as 2.89 ± 1.42. The mean gravidity was 3.84 ± 1.40. Regarding mode of delivery, most of the patients (64.91%) were delivered through vaginal route. The main outcome of the study was expulsion of IUD, which was observed in 18 patients (5.90%). **Conclusion:** IUD is a strong weapon in the family planning armoury and should be encouraged in both vaginal and caesarean deliveries. Early follow-up should be encouraged to detect expulsions and tackle common problems.

KEYWORDS: Contraception; Device; IUCD; Copper device; Postpartum.

INTRODUCTION

Using family planning to space births at least 36 months apart can avert 30% of maternal deaths and 10% of child deaths.[1] Sterilization has remained the leading method of contraception globally, accounting for 40% of contraception users, but it does not address women's needs for healthy birth spacing. An intrauterine device (IUD) is a coitus-independent, reversible and effective form of contraception with immediate contraceptive action. It is the most widely used method of contraception with approximately 160 million users worldwide.[2] Globally, 14.3 % of female contraceptive users prefer the IUD.[3]

Previous data indicate that IUDs are as effective as tubal sterilization. Moreover, despite the well-known complications such as increased menstrual bleeding and pain long term discontinuation rates are generally low.[4,5] The postpartum intrauterine contraceptive device (PPIUCD) a long-acting, reversible contraceptive offers a safe, effective and convenient alternative.[6-8] Frequency of expulsion of PPIUCD was found in 11 of 210 (5.23%) patients.[9]

The rationale of this study is that post-partum IUD is an important device among measures used for birth control having minimal complications. However, it is also important to know the exact frequency of expulsion among our own population. As IUD is one of the safest methods for this matter, so this study will help in educating our population regarding this important aspect. Although previous studies have been conducted on the topic, however, this study will particularly address the potential complications in our own population as ethnic variations do have an impact.

METHODOLOGY

Expulsion: An expulsion was defined if all of the following are present.

- History of seeing the IUD coming out
- No IUD confirmed by ultrasonography.
- An abdominal x-ray confirming absence of the IUD

Post-partum IUD: was defined as IUD placement within 10 min after delivery of placenta.

MATERIAL AND METHODS

Study design: It was a cross-sectional study.

Setting: Study was done at gynaecology & obstetrics Department, Bolan Medical Complex hospital, Quetta.

Duration of study: 17-08-2019 to 16-08-2020

Sample size: A sample size of 305 patients is calculated taking confidence level as 95%, precision as 2.5% and expected expulsion rate as 5.23% in patients with post-partum IUD[9].

Sample Technique: It was non-probability, consecutive sampling.

Inclusion criteria

- All the female patients of age 18-40 years undergoing vaginal or cesarean 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 is a contraindication for IUD)
- Potentially infected dai handling cases (Past History) (because they frequently have puerperal infection)
- Patients having fever during labour (Past History) (because they frequently have puerperal infection)

Data Collection

Approval from BMC, Hospital ethical committee was obtained. Patients were counseled and informed consent was taken for inclusion in the study. They were counseled regarding IUD

insertion and consent were obtained for it to be inserted. Among those undergoing cesarean delivery, the IUD inserter was inserted through the hysterotomy site after delivery of baby and placenta. The assistant will place a finger on the IUD to position the IUD at the uterine fundus. The inserter was then removed, and a ring forceps was inserted through the hysterotomy site to grasp the strings and insert them through the cervix from above, into the vagina. The ring forceps was then immediately removed from the sterile field to prevent vaginal contamination of the pelvic cavity. In those patients undergoing 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 expulsion as per operational definition.

Data Analysis Procedure

The collected data was entered and analyzed using SPSS version 20. Mean and standard deviation was calculated for quantitative values like age, gestational age, gravidity and parity. Frequencies and percentages were calculated for qualitative variables like mode of delivery and expulsion of IUD. Data was stratified for effect modifiers including age, gestational age and mode of delivery, gravidity and parity. Post-stratification, chi-square test was applied taking $P < 0.05$as significant.

RESULTS

A total of 305 patients were included in the study. The mean age of the patients was found to be 29.75 ± 5.50 years. Patients were further categorized according to age groups into 2 groups and most were in the age range of 31-40 years. Also, most of the patients had gestational age ≤ 37 weeks. The mean gestational age was 36.26±3.07 weeks. The mean parity of patients was found as 2.89± 1.42. The mean gravidity was 3.84±1.40. Regarding mode of delivery, most of the patients (64.91%) were delivered through vaginal route. All these details are given in (table 01).

The main outcome of the study was expulsion of IUD, which was observed in 18 patients (5.90%) (Table 2). Also, stratification of outcome with respect to age, gestational age, gestational age, gravidity, parity and mode of delivery was done. All details are summarized in (Table 3).

TABLE No. 1: Demographic details of patients in this study.

(n=305)

Variable	N (%)
Age	
18-30 years	132 (43.27%)
31-40 years	173 (56.72%)
Mean ± SD	29.75 ± 5.50years
Gestational age	
≤37 weeks	168 (55.08%)
>37 weeks	137 (44.91%)
Mean ± SD	36.26 ± 3.07 weeks
Parity	
≤2	145 (47.54%)
>2	160 (52.45%)
Mean ± SD	2.89 ± 1.42
Gravidity	
≤3	157 (51.47%)
>3	148 (48.52%)
Mean ± SD	3.84 ± 1.40
Mode of Delivery	
Vaginal delivery	198 (64.91%)
Cesarean section	107 (35.08%)

Table No.2: Frequency of Expulsion of IUD.

(n=305)

Expulsion of IUD	No. Patients	%
Yes	18	5.90%
No	287	94.1%
Total	305	100%

Table 3: Stratification of expulsion of IUD for age, gestational age, gravidity, parity and mode of delivery.

		Expulsion of IUD		P-value
		Yes	No	
Age groups	18-30 years	7	125	**0.698**
	31-40 years	11	162	
Gestational age	≤37 weeks	9	159	**0.655**
	>37 weeks	9	128	
Parity	≤2	10	135	**0.483**
	>2	8	152	
Gravidity	≤3	10	147	**0.920**
	>3	8	140	
Mode of delivery	Vaginal delivery	12	186	**0.873**
	Cesarean section	6	101	

DISCUSSION

An intrauterine device (IUD) is a coitus-independent, reversible and effective form of contraception with immediate contraceptive action. It is the most widely used method of contraception with approximately 160 million users worldwide. Globally, 14.3 % of female contraceptive users prefer the IUD. Previous data indicate that IUDs are as effective as tubal sterilization. Moreover, despite the well-known complications such as increased menstrual bleeding and pain long term discontinuation rates are generally low.[10]

Immediate post-placental IUD insertion is defined as placement of an IUD within 10 min following delivery. Insertion during this period is associated with less discomfort; and puerperal women may have increased motivation for contraception. Most studies have found immediate post-placental IUD insertion to be safe and effective. Cumulative expulsion rates 12 months after vaginal delivery have been reported to be between 13 and 19 %. Expulsion rates 12 months after caesarean delivery are generally lower and have been reported to be between 9 and 14 %. According to some studies, the risk factors for IUD expulsion following immediate post-placental insertion were vaginal delivery and parity.[11-12]

Only a few studies have addressed the mode of delivery in relation to subsequent IUD expulsion. A multicenter study, with the largest sample size so far, reported that expulsion rates were higher in patients who received an IUD after vaginal delivery. The expulsion rates at 3 months were 10.9 % for IUDs placed after caesarean delivery and 16.4 % for IUDs placed after vaginal delivery; rates which are slightly higher than ours. A more recent study reported that the expulsion rate for IUDs placed immediately after vaginal delivery was 38 %, while only 12 % of IUDs placed after caesarean delivery were expelled.[12,13,14] Similar cumulative expulsion rates for post-placental insertion after caesarean and vaginal delivery have been reported. Our data are in accordance with these latter studies in which the rates of expulsion were similar between groups. However, the relatively small sample size in the present study does not allow us to draw firm conclusions.[15]

As discussed above, vaginal delivery is a risk factor for expulsion according to some (but not all) studies. Parity, as well as operator experience, has also been suggested as a risk factor for IUD expulsion.[16] The probable mechanism behind the increased expulsion rate in patients who delivered vaginally is cervical dilation as well as development of the thin lower segment. We assume this is particularly true for partial IUD expulsions. If this were the case, however, patients who had undergone caesarean delivery in active labour would have had a higher risk

of IUD expulsion.[17] On the contrary, our results suggest that the impact of vaginal delivery or cervical changes in active labour on IUD expulsion is less evident. Parity, however, increases the risk of IUD expulsion regardless of the mode of delivery.[18,19] It should also be mentioned that in the current study all the IUDs were placed by experienced physicians, which controls for another potential confounder. Similar conclusions were reached in a study from Mexico, in which the authors found that parity was the only risk factor for expulsion when the IUD was inserted immediately after delivery.[20]

CONCLUSION

IUD is a strong weapon in the family planning armoury and should be encouraged in both vaginal and caesarean deliveries. Early follow-up should be encouraged to detect expulsions and tackle common problems.

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