Frequency of IUD Removal due to Abdominal Pain after Post-Partum Insertion of Copper-T Intrauterine Contraceptive Device

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Abstract

Objective:
To determine frequency of women presenting for IUD removal due to abdominal pain after immediate post-partum insertion.

Material and Methods:
This is a descriptive case series conducted at Department of Obstetrics & Gynecology, Nishtar Hospital, Multan from 15th January 2016 to 15th July 2016. Pregnant women age 25-34 years old were included with Parity ≥3 having gestational age of 36-40 weeks on ultrasound. Sample size was 148.

Results:
Age range in this study was from 25 to 35 years with mean age of 32.067±1.64 years, mean gestational age 38.040±1.08 weeks, mean BMI was 28.033±1.94Kg/m² and VAS score was 6.662±1.16. Majority of the patients were from 31-35 years (86.5%). 3-4 parity was seen in 82.4% patients. Vaginal delivery was seen in 55.4% patients. IUD removal due to pain was seen in 17(11.5%) patients.

Conclusion:
This study demonstrated that the insertion of immediate post-partum intrauterine device is a suitable, feasible and safe way for contraception. The insertion of IUD at post-partum time is safe, has more advantages due high motivation of the patient and ease of insertion. It is highly convenient for both the patient and the doctor.

Key Words: Gestational Age, BMI, Parity, IUD, Contraception.

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INTRODUCTION

Family planning is the important social practice for controlling the number of children and also the intervals between their births, importantly and particularly by means of contraception methods. Data has shown that it can prevent nearly one third of deaths in conceding mothers and reduce the child mortality up to 10% when couples space their children more than 2 years apart using the methods of effective family planning (Kumar et al, 2014).

International data portrays that short intervals spacing the children births are associated with greater maternal and child mortality and morbidity (Winikoff, 1983). Pakistani couples are less compliance with the family planning methods and show a low contraceptive prevalence rate that is around 35% (NIPS, 2012). Interestingly, in our country delivery may be the only time when a woman comes in contact with healthcare provider. Most women are sexually active by six weeks after the delivery of their child, and those who underwent caesarean section are more likely to resume sexual activity earlier than women with vaginal deliveries. Because ovulation can happen as early as 25-days after delivery and women may not breastfeeding, thus providing an effective and safe contraceptive technique during this postpartum is critically significant for reducing unintended pregnancy (Jackson et al, 2011). Moreover, women are less educated in Pakistan especially in villages and waiting for the 6-week postpartum visit to initiate an effective method of family planning and birth control places women at risk for unintended pregnancy especially in the imminent postpartum period as most of the women don’t come for follow-up visits. (Khajehei et al, 2009). The postpartum period just after delivery is an imperative time to plan contraception and family planning (Stuart et al, 2012). At that time, women are often motivated so as to prevent or delay another pregnancy. Essentially, they have instant access to health care providers, and they are known not be pregnant at that time (Stuart et al, 2012; CDC updates, 2011).

There are multiple methods of family planning and contraception. Intrauterine devices (IUDs) are small devices placed in your uterus to disrupt the of insemination process to avoid birth. IUDs have been on and off the market for decades. The intrauterine contraception (IUC) technique consists of placing a plastic device that is wrapped in copper (Cu IUD), but also of other metals as silver or gold, or may contains hormones, such as levonorgestrel (IUS-LNG). The intrauterine contraception was first introduced in the early 1900s, and during the seventies the device, mainly in form of T, was wrapped with copper and knowns as Copper-T. The T-structure, that is quite modified over the years, is still considered the most commonly employed device in the worldwide. In the 90s, polymers were used to release hormones for control of birth, so as to further improve the contraceptive effectiveness, acceptability and
practicality, but this is also used to get therapeutic results in certain diseases. In the recent years, this intrauterine contraception (IUC) technique of family planning has gained growing interest by the women and the gynecologists. This new modified IUDs offer increased contraceptive efficacy, that is now near to 100%. (Jackson et al, 2011; Nelson et al, 2011). Today, the IUDs are the worldwide most common reversible contraceptive method. It demonstrated high safety and usefulness, additionally available at low costs, give better compliance for long-term use. Copper intrauterine contraceptive devices are the most commonly used type of intrauterine contraceptive device; over 106 million women worldwide use them (Nelson et al, 2011). Abdominal pain is one of the major reasons to remove IUD and several scales are available for pain assessment but it appears the visual analog scale and numeric rating scale are the more popular to choose from. According to VAS score as proposed by national institute of health, rating and grading of pain would be judged by pain levels determined by 0 for no pain, 1-3 for mild pain that interferes little with ADLs (activity of daily living), 4-6 moderate pain that interferes significantly with ADLs, 7-10 for severe pain that unable to perform ADLs (Lundqvist et al, 2009). Post-Partum intrauterine contraceptive devices are still emerging as a relatively new contraception choice in Pakistan. While data on complications with post-partum intrauterine contraceptive device insertions are available from international sources shows the reason for removal of IUCD due to abdominal pain, heavy vaginal bleeding, vaginal spotting, smelly vaginal discharge, perforation and spontaneous expulsion (Afshan et al, 2014; Schrumpf et al, 2020). Above studies results show variations in frequency of removal in different populations, so there is a great need to determine frequency of IUD removal due to abdominal pain after immediate post-partum insertion in our general population. There is no previous data base available keeping in view of removal of IUCD due to pain with specific score so the rationale of my study would project the frequency of IUCD removal with VAS score demarcation on certain grades of pain. Thus, our statistics will not only show severity of pain causing IUCD removal but will also provide ways and effective methods to reduce the removal in order to improve effective contraception immediately after delivery particularly in country like ours where women have limited access to health.

**MATERIALS & METHODS**

**Sampling**

This is a descriptive case series conducted at Department of Obstetrics & Gynecology, Nishtar Hospital, Multan from 15th January 2016 to 15th July 2016. A total of 148 pregnant women with parity ≥3, 36-40 weeks of gestational age and have desire to have CuT after counselling were included in the study.

**Exclusion/inclusion criteria**
Patients with pre-labor rupture of membranes for >18 hours, Hb ≤ 8 g/dl, history of diabetes mellitus and hypertension were excluded.

Procedure
The women underwent immediate postpartum insertion of Copper T 380A within 10 minutes of placental expulsion. The intrauterine contraceptive device was held by sponge holding forceps and introduced in the uterine cavity and placed at the fundus in the women delivering vaginally. In the case of caesarean section, intrauterine contraceptive device was placed at the fundus in the uterine cavity through the lower segment incision. Uterine incision was closed routinely. All the procedure was done by 3rd year resident under the supervision of consultant gynecologist having 3 years post fellowship experience. At the time of discharge from the hospital, women were advised to come for follow up every month for 6 months. At follow up visit, women were assessed for removal due to abdominal pain. Those women who did not return for their follow up visit were contacted by phone and reminded about their scheduled visit. Data was recorded for IUD removal due to abdominal pain.

Statistical analysis:
Data was collected and analyzed through SPSS version 23 and Chi Square test was applied to evaluate the association of different parameters on IUD removal due to abdominal pain and other parameters.

RESULTS
In our study, the age range in was from 25 years to 35 years with mean age of 32.067±1.64 years, mean gestational age 38.040±1.08 weeks, mean BMI was 28.033±1.94Kg/m² and VAS score was 6.662±1.16 as shown in Table-I.

Our study constitutes majority of the patients from 31-35 years (86.5%), whereas patients from 25-30 were 13.5% as given in the table-II.

3-4 parity was seen in 82.4% patients. Table-III shows the %age of patients according to mode of delivery. Vaginal delivery was seen in 55.4% patients and 44.6% patients underwent Cesarean section. IUD removal due to pain was seen in 17(11.5%) patients as shown in Table-IV.

Stratification of IUD removal with respect to age groups and with respect to gestational age is shown in Table-V and VI respectively.

Table-I: Patients according to age, gestational age, BMI and VAS score.
<table>
<thead>
<tr>
<th>Demographics</th>
<th>Mean±SD n=148</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Age(years)</td>
<td>32.067±1.64</td>
</tr>
<tr>
<td>2 Gestational age(weeks)</td>
<td>38.040±1.08</td>
</tr>
<tr>
<td>3 BMI(Kg/m²)</td>
<td>28.033±1.94</td>
</tr>
<tr>
<td>4 VAS score</td>
<td>6.662±1.16</td>
</tr>
</tbody>
</table>

Mean±SD of patients according to age, gestational age, BMI and VAS score.

Table-II: %age of patients according to Age distribution
<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Patients n=148</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-30</td>
<td>20</td>
<td>13.5%</td>
</tr>
<tr>
<td>31-35</td>
<td>128</td>
<td>86.5%</td>
</tr>
</tbody>
</table>

Table-III: %age of patients according to mode of delivery

Table-IV: %age of patients according to IUD removal due to pain

DISCUSSION

The post-partum period offers a safe and easy opportunity to achieve long-term contraception with minimal discomfort by IUD insertion. This study examined the 6-months outcomes in women who opt for Cu-T 380A IUDs insertion immediately after postpartum period. The major side effect of Copper-IUD usage is abdominal pain. In this study only 11.5%, women had removed the IUD due to lower abdomen pain. Our study results are compatible with the study results of Trivedi and associates who reported that after immediate post-partum insertion of copper-T the removal rate at 6 months was 16.62% due to abdominal pain (Trivedi et al, 2013). In another study by Shukla and fellows (Shukla et al, 2012), Cu-T-200-B was used in immediate post-partum period, 27.23% women asked for removal of the IUD due to complications. But interestingly, none of the studied women complained of vaginal discharge or any of them had any sign of PID, and the follow up rate was only 11.3% (6 months). In an interesting systematic review, the results of insertion of IUD at post-partum but at different time interval was compared. The study came with the evidence that there is no increase in risk of complications in the women who opt for IUD at the post-partum time. In the same study, they found that the post-placental IUD placements during caesarean section leads to lesser expulsions as compared to post-placental vaginal insertions (Kapp and Curtis, 2009).

The safety, efficacy and patient-acceptability of Cu-T 380A was studied in another study (Nelson et al, 2013), and it was demonstrated that PP-IUD as a safe and convenient method but vaginal insertions are linked higher expulsion rates later on. Our results showed that IUD removal was done in 11.5% women, thus intra caesarean insertions results have demonstrated high levels of device retention with lesser complications. Similarly, Welkovic and colleagues studied postpartum bleeding association with infection in cases of post-placental device insertions, and they also found no difference in the incidence of the relevant symptoms importantly the vaginal bleeding (Welkovic et al, 2001). Moreover, low-dose copper with nitinol-IUDs demonstrated high efficacy and safety in patients with follow up of 2-years (David et al, 2020).

Multiload Cu-375 was used immediately after normal vaginal delivery (NVD) and/or caesarean-section in a study by Fernandes. And the results were quite significant when the difference in expulsion/removal rate in post-placental device insertion

<table>
<thead>
<tr>
<th>IUD removal</th>
<th>Patients</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>17</td>
<td>11.5%</td>
</tr>
<tr>
<td>No</td>
<td>131</td>
<td>88.5%</td>
</tr>
</tbody>
</table>

Table-IV: Stratification of IUD removal with respect to age groups.

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Yes</th>
<th>No</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25-30</td>
<td>4(20%)</td>
<td>16(80%)</td>
</tr>
</tbody>
</table>
Frequency of IUD Removal due to Abdominal Pain after Post-Partum Insertion

<table>
<thead>
<tr>
<th>2</th>
<th>31-35</th>
<th>13(10.2%)</th>
<th>115(89.8%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>17(11.5%)</td>
<td>131(88.5%)</td>
</tr>
</tbody>
</table>

Table-V: Stratification of IUD removal with respect to gestational age.

<table>
<thead>
<tr>
<th>Gestational age (weeks)</th>
<th>IUD removal</th>
<th></th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>36-38</td>
<td>10(11%)</td>
<td>81(89%)</td>
</tr>
<tr>
<td>2</td>
<td>39-40</td>
<td>7(12.3%)</td>
<td>50(87.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>17(11.5%)</td>
<td>131(88.5%)</td>
<td></td>
</tr>
</tbody>
</table>

after vaginal deliveries and caesarean sections; the expulsion/removal was 32% among the subjects in the case of vaginal delivery group as compared to no expulsions/removals in the caesarean section group (Fernandes et al, 2004). Interestingly, our study the removal was more in IUD insertion after vaginal delivery (14.6%) vs caesarean section (7.6%) for the period of 6 months follow up. In another study, Cu-T-380A insertion at caesarean time was studies and the rate of expulsion or removal for bleeding was 17.6%, for pain was 8.2% and for other medical reasons was 2.4% (Celen et al, 2011). Quite similar to our results, a study reported expulsion rate of 10.68% at the end of 6 month (Shukla et al, 2012). Jose and colleagues compared levonorgestrel intrauterine-system (LNG-IUS) -with Cu-T-380A at the time of caesarean section, and found only 4.5% rate in each group (Jose et al, 2011).

An interesting study in local population was done to check the efficacy of multiload Cu-375 IUD usage at the time of caesarean-section for safe and effectivity. They found that 10% women were infected, lochia was heavy in only 4% women and most importantly 82% women were happy and wanted to continue with device without any complications (Shereen et al, 2011). Our study showed that the intra caesarean IUD are associated with lower rate of associated complications, and thus resulted in lesser removals or expulsions. Moreover, the appropriate timing of the insertion at caesarean-section offers a quite practicable alternative1to the common practice of tubal1ligation especially in the cases of multiple repeat caesarean-sections.

CONCLUSION
The immediate use of IUD at post-partum is useful, safe and effective contraceptive method as the motivation of the patients is quite high. Thus, our study concluded that insertion of IUD at the time of post-partum has many advantages such as ‘ease of insertion’ and ‘convenience’ for both the patients and the doctors.

Conflict of interest
Authors declare that there is no conflict of interest.
Ethical approval
Ethical and other necessary approvals were taken from Ethical Review Board of Nishtar Hospital, Multan, Pakistan.

Consent for Publication
All authors approved manuscript for publication.

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Frequency of IUD Removal due to Abdominal Pain after Post-Partum Insertion

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