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Original article

Insertion of Intrauterine Device During Cesarean Section

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Abstract

Background: Cesarean section (CS) patients are in a characteristic situation to obtain an intrauterine contraceptive device (IUD). They may also choose to utilize the IUD as a long-acting reversible contraceptive where it is safe and efficacious in the existence of a CS incision., **Aim and objectives;** to look into the effectiveness and safety of Insertion of Intra Uterine Devices (Copper IUDs) during Caesarian Section. **Subjects and methods:** This was a Prospective Interventional research, was conducted at Obstetrics and Gynecology department unit of Benha University Hospitals, Al Dalangat central hospital, Al Shorouk special hospital and Souidan Special Center. By using the history, physical assessment, per speculum assessment, and ultrasonography, all patients were followed up at 6 weeks and 6 months for safety, effectiveness, expulsion rate, adverse reactions, removal rates, and continuation rates. The study duration was 6 months from 7\2022 until 1\2023. **Result**: Outcomes in The first visit; the prevalence of Safety and effectiveness of IUD was 85% from all the studied cases. The IUD Expulsion and pregnancy were observed in 5 cases. The IUD complications, Side effects, and IUD removal were found in 15 cases. **Conclusion:** regarding our results, the Insertion of Intra Uterine Devices (Copper IUDs) during Caesarian Section is excellent, and safe for limiting or space childbirths. It is offered to a woman in a setting when she is highly motivated and genuinely needs it.

Keywords: Intrauterine devices; Cesarean section; Contraception; Time of Insertion.

Introduction

Some women run the chance of a quick, recurrent, or unexpected pregnancy if they wait to start using an effective form of contraception until after giving birth**[1]**.

By six weeks after giving birth, over fifty percent of non-breastfeeding women ovulate. Furthermore, within six weeks after giving birth, over fifty percent of women are sexually active. Frequently, postpartum visits are cancelled, and women who want to utilize an intrauterine device (IUD) for postpartum contraception never get one **[2, 3].**

These women confront obstacles such a lack of transportation, unstable housing, and communication difficulties with their

healthcare providers, and they are more likely to be socially and economically underprivileged. IUD implantation in the first few weeks after delivery has the potential to boost overall IUD usage and lower rates of unplanned pregnancies in the US **[4].**

There is an alternative to interval insertion—immediate post-placental IUD insertion—that may be done within ten minutes after placental release, however there isn't much information available on IUDs implanted particularly for cesarean deliveries **[5].**

It has been shown that immediate postpartum IUD insertion is a secure substitute for interval insertion. The World Health Organization rates the application of a copper T380A IUD in the early postpartum period, including after a CS, as medically eligible for contraceptive usage category 1 **[6].**

Both nursing and non-breastfeeding women are free to utilize it throughout this time period. There is little information available on IUDs implanted at the time of a CS, despite the reported expulsion rates of IUDs implanted immediately postpartum following vaginal delivery being greater than for interval placement **[7].**

The cervix is typically not completely dilated when IUDs are implanted at the time of CS, theoretically making it more challenging for the IUD to be ejected via the cervical canal. Additionally, properly doing it is technically simpler **[8].**

Patients and methods

This Prospective Interventional research had been conducted at Obstetrics and Gynecology department unit of Benha University Hospitals, Al Dalangat central hospital, Al Shorouk special hospital and Souidan Special Center.

The study duration was 6 months from 7\2022 until 1\2023

Sample size

The sample size for this research, which is based on a study by Zaconeta et al., 2019 Epi Info, was determined by taking into account the following hypotheses: - A power of 80% and a two-sided confidence level of 95%. Odds ratio estimated with a 5% error is 1.115. One hundred was the ultimate maximum sample size obtained from the Epi-Info output.

Inclusion criteria: Women aged 20 years old or more, Elective cesarean section, Women willing for copper T insertion, Patients can do informed written consent and Women who consent to follow up reporting.

Exclusion criteria: Chorioamnionitis, membrane rupture lasting more than 18 hours, unresolved PPH, pregnancy anomaly, the cervical cancer, People who have had gonorrhea, chlamydia, or trichomoniasis treated while pregnant and those with leiomyomas that are larger than one, 3 cm, or that are impinging on the uterine cavity.

Methods:

When feasible, women had received individual and group counseling with the use of visual aids and movies. Each included woman had been told of the study's specifics, including a description of the Copper IUD, its results, and potential

adverse effects, and informed permission had been recorded on the outpatient documentation and data forms. The ladies had been given the option of a Copper IUD implantation during surgery as soon as a cesarean section was indicated. A formal informed consent will be signed by those who consented to the insertion.

Every Patient was subjected to: taking a whole history, examinations (general assessment, abdominal and local clinical assessment, bimanual pelvic assessment, routine transvaginal assessment, ultrasound assessment, and inspection for any apparent lesions or discharges) and Investigations.

Ethical consideration: Before enrolling patients in the trial, an Ethical Scientific Committee of Benha University had approved the study protocol and informed verbal and written agreement had been acquired from the subjects.

Data management and Statistical Analysis

To code, enter, and analyze historical information, basic clinical exams, laboratory tests, and outcome assessments, Microsoft Excel software was utilized. The data was then imported into the Statistical Package for the Social Sciences (SPSS) version 20.0 application to conduct the analysis. The following tests were performed to determine if differences were significant based on the types of data utilized (qualitative data represented as numbers and percentages, quantitative data continued group representation by mean ±SD); Chi square test (X2) compares and connects qualitative variables. t test comparisons between quantitative independent groups. P value was chosen at< 0.001 for very significant findings and <0.05 for outcomes that were significant.

Statistical Analysis

SPSS 26.0 for Windows was utilized to gather, tabulate, and statistically analyze all of the data (SPSS Inc., Chicago, IL, USA). Number and percentage were utilized to describe qualitative data. The range (minimum and maximum), mean, standard deviation, and median were utilized to characterize quantitative data.

Results

Regarding Age, Mean was27.1 with SD 7.29. Mean of Gravidity with SD was 2.85 ± 1.11. Multipara was observed in 95 cases and primgravida was found in 5 cases only. **(Table 1)**

Regarding Gestational age at delivery, mean was38.35 with SD ± 0.8. Number of single fetuses was 100 cases. Spinal anesthesia was used in 100 cases. **(Table 2)**

There was some complication of IUD use among the study population. Irregular vaginal bleeding, unusual vaginal discharge and Expulsions of IUD were observed in 5 cases from all the studied cases. **(Table 3)**

Outcomes in The first visit; the prevalence of Safety and effectiveness of IUD was 85% from all the studied cases. The IUD Expulsion and pregnancy were observed in 5 cases. The IUD complications, Side effects, and IUD removal were found in 15 cases. **(Table 4)**

Outcomes in second visit; the prevalence of Safety and effectiveness of IUD was 70%

from all the studied cases. The IUD Expulsion was observed in 20 cases. The IUD complications, Side effects, and IUD removal were found in 30 cases. No pregnancy occurred in all the studied cases. **(Table 5)**

Table (1): Descriptive clinical data among the study population

	Study population (n = 100)
Age (yrs)	
Mean ± SD.	27.1 ± 7.29
Median (IQR)	24 (21 - 34)
Range (Min-Max)	22 (20 - 42)
Gravidity	
Mean ± SD.	2.85 ± 1.11
Median (IQR)	2.5 (2 - 4)
Range (Min-Max)	4 (1 - 5)
Parity	
- **Multipara**	95 (95%)
- **Primi gravida**	5 (5%)

SD: standard deviation **IQR:** interquartile range

Table (2): Delivery features among the study population

	Study population (n = 100)
Gestational age at delivery (yrs)	
Mean ± SD.	38.35 ± 0.8
Median (IQR)	38 (38 - 39)
Range (Min-Max)	3 (37 - 40)
Number of fetus	
- **Single**	100 (100%)
- **Multiple**	0 (0%)
Type of anesthesia during CS	
- **Spinal**	100 (100%)
- **Other**	0 (0%)

SD: standard deviation **IQR:** interquartile range

Table (3): Complications of IUD use among the study population

	Study population (n = 100)
abnormal vaginal discharge	5 (5%)
irregular vaginal bleeding	5 (5%)
painful lower abdominal cramps	0 (0%)
Expulsions	5 (5%)
Uterine perforation	0 (0%)
Puerperal sepsis	0 (0%)

Table (4): First visit results among the study population

	Study population (n = 100)
IUD safety	85 (85%)
IUD complications	15 (15%)
IUD effectiveness	85 (85%)
Pregnancy	5 (5%)
IUD Expulsion	5 (5%)
Side effects	15 (15%)
IUD removal	15 (15%)

Table (5): Second visit results among the study population

	Study population (n = 100)
IUD safety	**70 (70%)**
IUD complications	**30 (30%)**
IUD effectiveness	**70 (70%)**
Pregnancy	**0 (0%)**
IUD Expulsion	**20 (20%)**
Side effects	**30 (30%)**
IUD removal	**30 (30%)**

Discussion

The main results were as followed:

This current study showed that regarding age, mean was 27.1 with SD 7.29. mean of gravidity with SD was 2.85 ± 1.11. Multipara was observed in 95 cases and primgravida was found in 5 cases only.

Our results supported with others **[9]** who aimed to evaluate the effectiveness and safety of placing a TCu 380A IUD right away after a cesarean section after the placenta has been removed. The research comprised 245 pregnant women who were planned for cesarean deliveries and whose median age was 26 years. Their ages ranged from 18 to 41 yrs. Seventy three percentage of the participants were multiparous, 67% had previously used an IUD, and 61% desired to use an IUD.

Also similar with our results were obtained from a research **[10]** who aimed to contrast women who were randomly assigned to post-placental implantation at the time of cesarean birth versus delayed insertion 4–8 weeks after delivery while using the levonorgestrel intrauterine device (LNG-IUD) at 1 year after delivery. 42 instances were included in the research. 20 were placed in the post-placental group and 22 were placed in the delayed group. Regarding Age, Mean was 27.1±6.2 and was 28.4±5.3 respectively.

Our current study showed that there was some complication of IUD use among the study population. Irregular vaginal bleeding, unusual vaginal discharge, and Expulsions of IUD were observed in 5 cases from all the

studied cases. Outcomes in The first visit; the prevalence of Safety and effectiveness of IUD was 85% from all the studied cases. The IUD Expulsion and pregnancy were observed in 5 cases. The IUD complications, Side effects, and IUD removal were found in 15 cases. Also our current study showed that outcomes in second visit; the prevalence of Safety and effectiveness of IUD was 70% from all the studied cases. The IUD Expulsion was observed in 20 cases. The IUD complications, Side effects, and IUD removal were found in 30 cases. No pregnancy occurred in all the studied cases.

Our findings correspond to the study which revealed that there were no recorded expulsions, and no IUD removal requests were submitted (11). Thirty-four (80%) of those ladies said they were "happy" or "very happy" with their IUDs after the first six months. No participants said that they were "unhappy" with their IUD. Twenty-three (55%) of the ladies did mention menstrual cramps or heavy bleeding.

Also our results were similar to the study which revealed that The immediate post-placental IUD implantation following cesarean section offers sufficient pregnancy prevention [9].

In our current study showed that prevalence of Expulsion of IUD was 20% from all studied cases. While prevalence of Reversed of IUD was 10% from all studied cases.

Our results supported, the results of others which revealed that at the moment of a cesarean birth, immediate post placental IUD implantation is both safe and appropriate [11].

The TCu 380A or TCu 380S was shown to be superior to other copper IUDs in an earlier Cochrane systematic review for prevent pregnancy **[12].**

When the TCu 380A model IUD was implanted just after placenta delivery in prior research that included both cesarean (26%) and vaginal (74%) births, a cumulative ejection rate of 12.3 per 100 women was noted after one year **[13].**

Another element influencing the expulsion rate might be the time of the IUD placement. According to the patient's request, research compared immediate, early (10 min to 48 h), and interval IUD insertions. The interval group had the lowest 12-month cumulative expulsion rate (6.9%), while the immediate (36.9%) and early (69.8%) groups had the highest rates **[14].** But there have not been any genuine randomized clinical studies to examine the impact of various IUD implantation times **[15].**

All women undergoing CS may utilize the IUD, a long-acting reversible contraceptive treatment. It is necessary to address the issues of device ejection, missing threads during follow-up, and the propensity for increased puerperal hemorrhage.**[16]**

Conclusion

Regarding our results, the Insertion of Intra Uterine Devices (Copper IUDs) during Caesarian Section is excellent, and safe for limiting or space childbirths. It is offered to a woman in a setting when she is highly motivated and genuinely needs it.

References

1. Sothornwit, J., Kaewrudee, S., Lumbiganon, P., Pattanittum, P., & Averbach, S. H. *Immediate versus delayed postpartum insertion of contraceptive implant and IUD for contraception.* Cochrane Database of Systematic Reviews, 2022(10).

2. Makins, A. and S. Cameron, *Post pregnancy contraception.* Best practice & research Clinical obstetrics & gynaecology, 2020. 66: p. 41-54.
3. Simmons KB, Edelman AB, Li H, Yanit KE, Jensen JT. *Personalized contraceptive assistance and uptake of long-acting, reversible contraceptives by postpartum women: a randomized, controlled trial.* Contraception, 2013. 88(1): p. 45-51.
4. Parks, C. and J.F. Peipert, *Eliminating health disparities in unintended pregnancy with long-acting reversible contraception (LARC).* American journal of obstetrics and gynecology, 2016. 214(6): p. 681-688.
5. Mishra, S., *Evaluation of safety, efficacy, and expulsion of post-placental and intra-cesarean insertion of intrauterine contraceptive devices (PPIUCD).* The journal of obstetrics and gynecology of India, 2014. 64: p. 337-343.
6. Cwiak, C. and S. Cordes, *Postpartum intrauterine device placement: a patient-friendly option.* Contraception and reproductive medicine, 2018. 3(1): p. 3.
7. Armstrong MA, Raine-Bennett T, Reed SD, Gatz J, Getahun D, Schoendorf J, et al., *Association of the timing of postpartum intrauterine device insertion and breastfeeding with risks of intrauterine device expulsion.* JAMA Network Open, 2022. 5(2): p. e2148474-e2148474.
8. Goldstuck, N.D. and P.S. Steyn, *Insertion of intrauterine devices after cesarean section: a systematic review update.* International journal of women's health, 2017: p. 205-212.
9. Çelen Ş, Sucak A, Yıldız Y, Danışman N., *Immediate postplacental insertion of an intrauterine contraceptive device during cesarean section.* Contraception, 2011. 84(3): p. 240-243.
10. Whitaker AK, Endres LK, Mistretta SQ, Gilliam ML., *Postplacental insertion of the levonorgestrel intrauterine device after cesarean delivery vs. delayed insertion: a randomized controlled trial.* Contraception, 2014. 89(6): p. 534-539.
11. Levi E, Cantillo E, Ades V, Banks E, Murthy A. *Immediate postplacental IUD insertion at cesarean delivery: a prospective cohort study.* Contraception, 2012. 86(2): p. 102-105.
12. O'Brien PA, Kulier R, Helmerhorst FM, Usher-Patel M, d'Arcangues C. *Copper-containing, framed intrauterine devices for contraception: a systematic review of randomized controlled trials.* Contraception, 2008. 77(5): p. 318-327.
13. Çelen Ş, Möröy P, Sucak A, Aktulay A, Danışman N. *Clinical outcomes of early postplacental insertion of intrauterine contraceptive devices.* Contraception, 2004. 69(4): p. 279-282.
14. Eroğlu K, Akkuzu G, Vural G, Dilbaz B, Akın A, Taşkın L, et al., *Comparison of efficacy and complications of IUD insertion in immediate postplacental/early postpartum period with interval period: 1 year follow-up.* Contraception, 2006. 74(5): p. 376-381.
15. Grimes DA, Lopez LM, Schulz KF, Van Vliet HA, Stanwood NL. *Immediate post-partum insertion of intrauterine devices.* Cochrane Database of Systematic Reviews, 2010(5).
16. Bahamondes, L., M. Valeria Bahamondes, and L.P. Shulman, *Non-contraceptive benefits of hormonal and intrauterine reversible contraceptive methods.* Human reproduction update, 2015. 21(5): p. 640-651.

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