

Immediate Postplacental Insertion of Copper Intrauterine Device and Evaluation of Expulsion Rate in Cesarean Section

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Abstract

Background: Women who undergo a cesarean section (CS) are in a unique position to receive the intrauterine contraceptive device (IUD). They may also want to use the IUD as a long-acting reversible contraceptive method provided the IUD is safe and effective in the presence of a CS scar.

Aim of Study: We aimed to evaluate the efficacy, displacement and expulsion rates of immediate post placental insertion of IUD.

Patients and Methods: This prospective study was carried out at Obstetrics and Gynecology Department Tanta University Hospital on 60 patients for whom IUD was the chosen contraceptive method.

Results: Mean age among 60 patients included in the present study was 25.10 years, as regard postinsertion complications expulsion in 6% of patients, endometritis in 8% and bleeding in 25%, complications occurred after 3 months was in form of expulsion in 2% of patients, bleeding in 4% of patients and PID in 2% and complications occurred after 6 months was in form of expulsion in 4% of patients bleeding in 5% of patients, PID in 4% of patients and pregnancy in 2% of patients.

Conclusion: The findings of the present study confirm previous data that immediate postplacental IUD placement is a viable contraceptive option.

Key Words: Intrauterine device – Postplacental – Cesarean section.

Introduction

CS rates are rising in all countries, including those of the GS. IUD insertion at the time of CS creates an opportunity to increase access to long-acting reversible contraceptive methods. Conversely, a previous CS scar may deter access to interval insertion of an IUD if a previous CS may result in difficulty with insertion and/or future IUD problems [1].

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Postplacental intrauterine device (IUD) placement, defined as IUD placement within 10min after delivery of the placenta, is an appealing strategy for increasing access to postpartum IUDs because it does not require a separate postpartum visit [2]. Insertion during this period is associated with less discomfort; and puerperal women may have increased motivation for contraception [2].

Patients and Methods

This prospective study was carried out at Obstetrics and Gynecology department Tanta University Hospital on 60 patients for whom IUD was the chosen contraceptive method at 2017.

Inclusion criteria:

Any patients with past history of difficulty in application of IUD post partum due to cervical stenosis. Any patient had contraindication to use other contraceptive method. No anomaly in uterus. single pregnancy.

Exclusion criteria:

Multiple pregnancies. Placenta previa. Intrapartum fever. Rupture of membrane for longer than 24h. Active untreated lower genital tract infection. Past history of ectopic pregnancy. Any patient with contraindication to use IUD. Patients with recurrent displacement of the loop. Immunocompromised patients, diabetic patients.

All patients were subjected to Full medical history taking, Ultrasonographic examination.

Technique:

A copper IUD was placed in the fundus of the uterus within 10min of placental delivery (in patients deliver by caesarean section) the IUD was placed through the caesrean section incision using

a ring forceps and the strings were passed through the cervix, at 6 weeks postpartum the string were trimmed to extend just beyond the external cervical os. During caesarean section all women received prophylactic intravenous cefazone 2g.

Radiologic testing:

Prior to discharge, follow-up all patients were re-examined, including abdominal ultrasonography. Transvaginal ultrasonography at 6 weeks, 3 and 6 months postpartum. Patients will instructed to contact one physicians immediately if they experienced pelvic pain, fever, excessive bleeding or an unusual vaginal discharge. Primary outcome: Successful placement, subsequent expulsion.

Secondary outcome: Pregnancy, perforation and other adverse events.

Statistical analyses: Were performed using SPSS software, one way Analysis of variance was performed for parametric variables between patients with a normal distribution.

Results

This prospective cohort study was conducted at Tanta University Hospital on 60 patients for whom IUD was the chosen contraceptive method with the following result:

Mean age among 60 patients included in the present study was 25.10 years with 53.3% of them <25 years and 46.7% >25 years, mean parity was 2.23, the most of the included patients had secondary school 36.7% of them as regarding economic status 40% had low economic status, 36.7% had medium economic status and 23.3% had high economic status (Table 1).

63.3% of patients had no history of previous IUD use but 36.7% had previous use of IUD, as regarding future fertility desire 83.3% of patients desired to fertility (Table 2) 40% of the patients chose IUD posplacental insertion due to Difficult to return to takes methods, 36.7% used it due to its History of difficult insertion and 23.3% used it due to Cervical stenosis (Table 3).

Complications occurred after 6 weeks of insertion was in form of expulsion in 6% of patients, endometritis in 8% and bleeding in 25%, complications occurred after 3 months was in form of expulsion in 2% of patients, bleeding in 4% of patients and PID in 2% and complications occurred after 6 months was in form of expulsion in 4% of patients bleeding in 5% of patients, PID in 4% of patients and pregnancy in 2% of patients (Table 4).

The expulsion rate occurred in 3.3% of patients within 7 days and on 1.3% of patients in 7 day-4 weeks. 55% of them only displacement happened and 45% totally displacement (Table 5, Figs. 1,2). 75% of patients having bleeding was in the form of menorrhagia and 25% in form of metrorrhagia, 75% of them got bleeding after preperium and 25% in preperium (Table 6), patients who got infection was in the form of endometritis in 4 patients and in preperium in form of PID in 3 patients (Table 7).

Table (1): Distribution of the studied cases according to demographic data (n=60).

	No.	%	
Age (years)			
<25	32	53.3	
≥25	28	46.7	
Min.-Max.	18.0-36.0		
Mean ± SD.	25.10±5.38		
Median	24.0		
	Min.-Max.	Mean ± SD.	Median
Parity	0.0-4.0	2.23±0.93	2.0
	No.	%	
<i>Education</i>			
No formal education	6	10.0	
Primary	14	23.3	
Secondary	22	36.7	
Higher education	18	30.0	
<i>Economic status:</i>			
Low	24	40.0	
Medium	22	36.7	

Table (2): Distribution of the studied cases according to previous IUD use and future fertility desire (n=60).

	No.	%
<i>Previous IUD use:</i>		
No	38	63.3
Yes	22	36.7
<i>Future fertility desire:</i>		
No	10	16.7
Yes	50	83.3

Table (3): Distribution of the studied cases according to reasons for acceptability (n=60).

	No.	%
<i>Reasons for acceptability:</i>		
Cervical stenosis	14	23.3
Difficult to return to takes methods	24	40.0
History of difficult insertion	22	36.7

Table (4): Distribution of the studied cases according to complications (n=60) after 6 weeks, 3 months and 6 months.

Complications	After 6 weeks		3 months		6 months	
	No.	%	No.	%	No.	%
Expulsion	4	6	1	2	2	4
Endometritis	4	8	0	0	0	0
bleeding	15	25	2	4	3	5
Sub involution of uterus	0	0	0	0	0	0.0
PID	0	0	1	2	2	4
Pregnancy	0	0	0	0	1	2

Table (5): Distribution of the studied cases according to timing and rate of expulsion (n=7).

	No.	%
<i>Type of expulsion:</i>		
Displacement	4	55
Total expulsion	3	45
<i>Timing and rate of expulsion:</i>		
No	53	92
7 days	3	3.3
7 day - 4 weeks	1	1.3
More than 4 wks	3	3.3

Table (6): Distribution of the studied cases according to bleeding (n=20).

	No.	%
<i>Type of bleeding:</i>		
Menorrhagia	15	75
Metrorrhagia	5	25
<i>Timing of bleeding:</i>		
In preperium	15	75
After preperium	5	25

Table (7): Distribution of the studied cases according to infection (n=7).

	No.	%
<i>Type of infection:</i>		
Endometritis	4	55
PID	3	45
<i>Timing of infection:</i>		
In preperium	4	55
After preperium	3	45

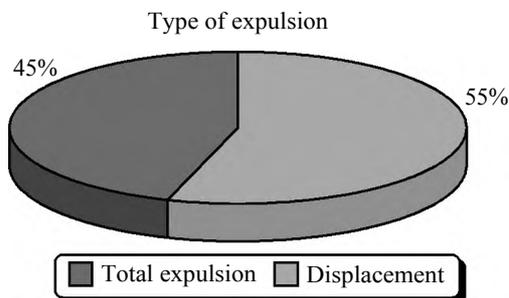


Fig. (1): Distribution of the studied cases according to type of expulsion.

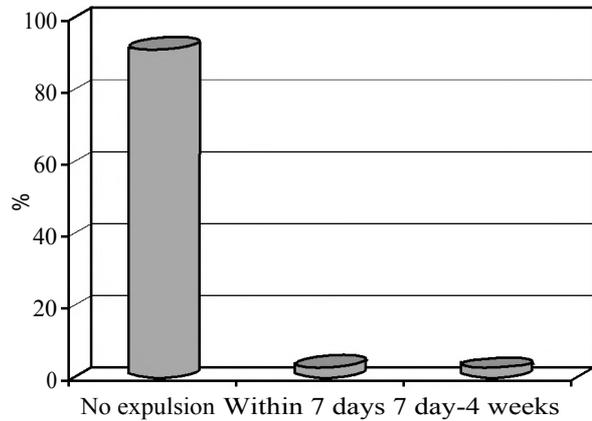


Fig. (2): Distribution of the studied cases according to timing and rate of expulsion.

Discussion

Immediate postpartum intrauterine device (IUD) insertion deserves great attention as it can provide immediate contraception and prevents repeat unintended pregnancies [3].

In the present study we aimed to evaluate the efficacy, displacement and expulsion rates of immediate post placental insertion of IUD, we include 60 patients for whom IUD was the chosen contraceptive method.

In the present study we found that mean age among 60 patients included in the present study was 25.10 years with 53.3% of them <25 years and 46.7% >25 years. Mean parity was 2.23. 63.3% of patients had no history of previous IUD use but 36.7% had previous use of IUD, as regarding future fertility desire 83.3% of patients desired to fertility.

Sharma A., et al., found that among total of 113 women were included with 45.13% of them aged 20-25 yrs, 43.36% aged 26-30 years and 11.50% aged 31-35 years 48.67% of them were para 2 and 7.07% more than 3 [4].

Another study by Maluchuru S. et al., they conclude 1000 patients with 558 patients aged 20-29 years, 383 aged 30-39 years and 59 aged <19 years, 572 patients were para 1, 348 patients were para 2 and 80 patients were para 3, 608 patients had last birth since 1-2 years [5].

In the current study 40% of the patients chose IUD posplacental insertion due to Difficult to return to takes methods, 36.7% used it due to its History of difficult insertion and 23.3% used it due to Cervical stenosis.

Compared with other contraceptive methods, early post-partum IUD insertion has several advan-

tages. It provides immediate contraception without interfering with breast feeding, and it may avoid discomfort related to insertion. Inserting an IUD immediately after placental removal has not been associated with increased infection, uterine perforation, postpartum bleeding, or uterine subinvolution. The expulsion rate is higher (approximately 12% in the first postpartum year) after immediate postpartum insertion compared to insertion 4 to 8 weeks later. Continuation rates are relatively high (87.6% and 76.3%, at 6 and 12 months, respectively) [6].

In the present study we found that complications occurred after 6 weeks of insertion was in form of expulsion in 6% of patients, endometritis in 8% and bleeding in 25%, complications occurred after 3 months was in form of expulsion in 2% of patients, bleeding in 4% of patients and PID in 2% and complications occurred after 6 months was in form of expulsion in 4% of patients bleeding in 5% of patients, PID in 4% of patients and pregnancy in 2% of patients.

The cumulative expulsion rates had a similar frequency of 8.7, 8.9 and 11.3% in groups 1,2 and 3, respectively ($p > 0.05$ in all pair wise comparisons). The expulsion rates at 6 weeks postpartum were 4.3, 6.7 and 9.7% in groups 1,2 and 3, respectively ($p > 0.05$ in all pair wise comparisons). In each group, more than half of the expulsions occurred within 6 weeks postpartum. There were no pregnancies in the study population while the IUD was in place. Suggesting that immediate postplacental insertion of Copper IUD is a safe and effective method [2], which is in accordance with the previous reports [7].

In agreement with our result Welkovic et al., [8] studied post-partum bleeding and infection after post placental IUD insertion and found no difference in the incidence of excessive bleeding.

On the other hand et al., revealed that Immediate post placental insertion (within 10 minutes of delivery of the placenta) of copper-bearing or hormone-releasing IUDs is generally safe and acceptable, although compared with interval insertion it carries a higher risk of expulsion, thus affecting effectiveness and overall patient acceptance.

In the current study we found that 75% of patients having bleeding was in the form of menorrhagia and 25% in form of metrorrhagia, 75% of them got bleeding after preperium and 25% in preperium, patients who got infection was in the

form of endometritis in 4 patients and in preperium in form of PID in 3 patients.

As regard bleeding post insertion a study by Zhang H., et al., the objective was to study the effects of immediate insertion of a frameless IUD during Cesarean section on the bleeding pattern, duration of lochia and healing of uterus. Two hundred women used the IUD and 204 women who did not use the IUD served as the control group. Follow-up visit was performed at 42 days and 90 days after delivery. There was no significant difference in postpartum hemorrhage, continuance of lochia, and healing of uterus was normal.

The expulsion rate was 4%. However, it was found that removal of the IUD was difficult in a significant number of women due to the slow degradation time of the cone material. It was concluded that further research on the improvement of absorption time of the biodegradable component may provide additional benefits of the retention technology.

In a systematic review by Kapp, et al., [10] the outcomes of post-partum insertion of IUD at different time interval were compared. The evidence demonstrated no increase in risk of complications among women who had an IUD inserted during the post-partum period; however, some increase in expulsion rates occurred with delayed postpartum insertion when compared to immediate insertion. Expulsion rates were more when compared to interval insertion. Post-placental insertions during caesarean section were associated with lower expulsion rates than post-placental vaginal insertions without any increase in other complications [5].

Conclusion:

The findings of the present study confirm previous data that immediate postplacental IUD placement is a viable contraceptive option.

References

- 1- GOLDSTUCK N.D. and STEYN P.S.: Insertion of intrauterine devices after cesarean section: A systematic review update. *International Journal of Women's Health*. 18 April Volume, 2017: 9 Pages, 205-212, 2017.
- 2- SUCAK A., OZCAN S., ÇELEN Ş., et al.: Immediate postplacental insertion of a copper intrauterine device: A pilot study to evaluate expulsion rate by mode of delivery. *BMC Pregnancy and Childbirth*, 15: 202, 2015.
- 3- RODRIGUEZ M.I., EVEN M. and ESPEY E.: Advocating for immediate postpartum LARC: Increasing access, improving outcomes, and decreasing cost. *Contraception*. 90 (5): 468-471, 2014.

- 4- SHARMA A., GUPTA V., BANSAL N., et al.: A prospective study of immediate postpartum intra uterine device insertion in a tertiary level hospital. Int. J. Res. Med. Sci. Jan., 3 (1): 183-187, 2015.
- 5- MALUCHURU S., ARUNA V. and PRABHAVATHI N.: Post Partum - Intrauterine Device Insertion - 2yr Experience at a Tertiary Care Center in Guntur Medical College /Govt. General Hospital, Guntur. (IOSR-JDMS). Volume 14, Issue 3 Ver. IV, pp 56-61, 2015.
- 6- ÇELEN Ş., SUCAK A., YILDIZ Y., et al.: Immediate postplacental insertion of an intrauterine contraceptive device during cesarean section. Contraception, 84: 240-3, 2011.
- 7- LARA RICALDE R., MENOCA TOBIAS G., RAMOS PÉREZ C., et al.: Random comparative study between intrauterine device Multiload Cu375 and TCu 380a inserted in the postpartum period [in Spanish]. Ginecol. Obstet. Mex., 74: 306-11, 2006.
- 8- STEFAN WELKOVIC, COSTA L., FAUNDES A., et al.: Postpartum bleeding and infection after postplacental IUD insertion. Contraception, 63: 155-8, 2011.
- 9- ZHANG H., FANG G. and ZHOU C.: Study on GyneFix PP IUD insertion during cesarean section. Chinese Journal of Family Planning, 12 (8): 481-482, 2004.
- 10- KAPP N. and CURTIS K.M.: Intrauterine device insertion during the postpartum period: A systematic review. Contraception, 80 (4): 327- 336, 2009.

تقييم وضع اللولب النحاسي مباشرة بعد انفصال المشيمة في الولادة القيصرية

إن اللولب جهاز يستخدم كوسيلة لمنع الحمل داخل الرحم ويعتبر الأكثر استخداماً على نطاق واسع ويستخدمه ما يقرب من ١٦٠ مليون مستخدم في جميع أنحاء العالم حيث يفضل ما يقرب من ٣٠.١٤٪ من النساء على مستوى العالم وتشير البيانات السابقة أن اللولب هو وسيلة فعالة مثل عملية ربط الأنابيب على الرغم من المضاعفات المعروفة مثل زيادة نزيف الطمث وآلام الطمث.

أستخدام اللولب على الفور بعد ولادة المشيمة أثناء القيصرية في غضون ١٠ دقائق يتميز الإستخدام في هذه الفترة بتقليل مشقة التركيب بعد ذلك ويعتبر وسيلة آمنة وفعالة لمنع الحمل. معدل تحرك اللولب أو وقوعه خلال ٦ شهور بعد القيصرية هي أقل عموماً عند إستخدام هذه الطريقة وقد ذكرت الدراسات أنها تتراوح بين ٩-١٤٪ وهناك بعض الدراسات توضح ارتفاع معدل تحرك اللولب بعد الولادة ويرجع ذلك إلى اتساع عنق الرحم.

وقد أوضحت بعض الدراسات سلامة هذه الوسيلة منها ما نشر في الولايات المتحدة من معايير نشرت لإستخدام وسائل منع الحمل المختلفة. وقد تمت مقارنة تحركه بعد الولادة ب ١٠ دقائق من ولادة المشيمة بإستخدامه بعد ٧٢ ساعة من الولادة ووضحت أن أدنى معدل للتحرك عند وضعه بعد ولادة المشيمة ب ١٠ دقائق وأيضاً تمت المقارنة بوضعه بعد الولادة الطبيعية.

وبذلك يتم التوجيه بإستخدامه في هذه الفترة بالرغم من المضاعفات التي يمكن أن تحدث في الأسابيع التالية للولادة مثل انقلاب الرحم في النساء المرضعات فهو الخيار الأمثل والوسيلة المثلى.