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Post-placental intrauterine device insertion - A five year experience at a tertiary care centre in north India

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***Background & objectives*: In view of high rate of unintended pregnancy in our country, particularly in post-partum women, there is a need for reliable, effective, long-term contraception such as intrauterine device (IUD) in post-partum women. The present study was planned to evaluate the safety and efficacy of immediate post-partum IUD insertion in women delivering vaginally or by caesarian section in a tertiary care centre facility in north India during a period of five years.**

***Methods*: The women recruited had CuT 200B insertion immediately after delivery of placenta in vaginal or caesarean delivery. Women having post-partum haemorrhage (PPH), anaemia, pre-labour rupture of membranes >18 h, obstructed labour and distorted uterine cavity by fibroid or by congenital malformation were excluded from the study. The women were followed up at 6 wk and 6 months after delivery.**

***Results*: A total of 1317 women were included in the study. Of these, 1037 (78.7%) came for first follow up. The cumulative expulsion rate at the end of 6 months was 10.68 per cent. There was no case of misplaced IUD.**

***Interpretation & conclusions*: Although the expulsion rate for immediate post-partum insertion was higher than for interval insertion, the benefits of providing highly effective contraception immediately after delivery outweigh this disadvantage, particularly in country where women have limited access to medical care.**

Key words Contraception - expulsion - intrauterine device - post-placental insertion

Post-partum period is one of the critical times when both woman and newborn need a special and integrated package of health services as morbidity and mortality rates are quite high during this period and also the women are vulnerable to unintended pregnancy. Studies show that pregnancies taking place within 24 months of a previous birth have a higher risk of adverse outcomes like abortions, premature labor, post-partum hemorrhage, low birth weight babies, fetal loss and maternal death. In India, 65 per cent of women in the first year post-partum have an unmet need for family planning. Hence contraception needs to be practiced in this critical period[1].

Intrauterine contraceptive device is the most commonly used reversible method of contraception worldwide with about 127 million current users[2].

Insertion of an IUD immediately after delivery is appealing for several reasons. The woman is not pregnant and is motivated for contraception and the setting is convenient for both woman and provider. For women with limited access to medical care, the delivery affords a unique opportunity to address the need for contraception. The evidence for post-partum IUD insertion was weak when this study was undertaken. Therefore, the present study was planned to evaluate the safety and efficacy of insertion of immediate post-partum IUD in women delivering vaginally or by cesarean section.

Material & Methods

This prospective study was carried out in the department of Obstetrics and Gynaecology, CSM Medical University from 1995 to 2000. Women delivering in the hospital fulfilling inclusion criteria were included in the study after obtaining informed consent. The study protocol was approved by the ethics committee.

The test of proportion (z test) was applied for statistical analysis.

Inclusion criteria: A women delivering vaginally or by caesarian section, counseled for IUD insertion in pre-natal period or in labour and willing to participate in the study.

Exclusion criteria: According to medical eligibility criteria for IUD by WHO, women having anaemia (haemogloblin <10 g/dl), PPH, with pre-labour rupture of membranes >18 h or with obstructed labour were excluded. Women having distorted uterine cavity by fibroid or congenital malformation of uterus were also excluded.

The women included in the study underwent immediate post-partum insertion of CuT 200B after delivery of placenta. The IUD held by sponge holder was introduced in the uterine cavity and placed in the uterine cavity (fundus) of women delivering vaginally. In the case of caesarean section, IUD was placed inside the fundus through the lower segment incision. Uterine incision was then closed routinely. Women were informed about the IUD insertion in the post-partum period. At the time of discharge from the hospital, women were advised to come for follow up after four to six wk as uterus takes around four wk to involute to pre-pregnant size. During follow up visits, women were asked especially for history of expulsion of IUD and excessive bleeding during post-partum period. As IUD insertion can cause pelvic inflammatory disease (PID), women were also asked about pain in abdomen or abnormal discharge *per vaginum* through vagina. Examination (per abdomen, per speculum & per vaginum) was done and the findings were recorded. In per speculum examination if IUD threads were long, they were cut 2 cm from external os. If threads of IUD were not seen and there was no history of expulsion of IUD, pelvic ultrasonography or X-ray pelvis was done to note for misplaced IUD.

Results

A total of 1317 women were included during the study period of five years. All of them underwent immediate post-partum IUD insertion (post placental insertion). All these women were asked to come for follow up after 4-6 wk and thereafter 6 months in the post-partum period. However, 280 (21.38%) women did not come for follow up. The remaining 1037 (78.7%) came for the first follow up visit after 4-6 wk and 118 of 1037 (11.37%) came for second check up after 6 months of delivery. Of the 1037 women, 653 had IUD insertion during cesarean section, while 384 women had IUD inserted vaginally within 10 min of delivery of placenta.

The women were between 22-30 yr of age, 417 (31.66%) women were primiparous and 900 (68.33%) were multiparous.

Neither of the women complained of pain in lower abdomen or abnormal discharge through vagina nor did any of them had any sign of PID on examination. However, 283 women complained of heavy bleeding during menstruation. They were given mefanamic acid (250 mg TDS) during this period and were informed about the fact that bleeding during initial two or three menstrual cycle can be heavy due to IUD. But 65 women were not willing to continue. Therefore, IUDs were removed in them. The remaining 218 women responded to the treatment and continued with IUD as a contraceptive method.

IUD was confirmed to be in place in 920 women in first follow up visit. However, IUD threads were not seen in 117 (11.2%) women. Pelvic ultrasonography confirmed expulsion of IUD. These women were informed about IUD expulsion and were advised to use alternative methods of contraception. IUD threads were not seen in 12 of the 118 women who came for second

follow up visit. After X-ray and lower abdomen pelvic USG, IUD expulsion was confirmed in these women. The cumulative expulsion rate at the end of 6 months was 10.68 per cent. There was no case of misplaced IUD.

Discussion

As a contraceptive used during post-partum period, the IUD has a distinct advantage. It is free from systemic side effects and does not affect breast feeding as seen with hormonal methods. It is a reversible method. In addition, IUD does not require regular user compliance. It is also not coital dependent and there is no pain on insertion when used post-placentally.

Timing of insertion, counseling and provider training are important factors for IUD insertion in post-partum period as quoted in United Nations Population Information Network (UN-POPIN) report[3]. Of these, the timing of insertion is important as it influences the risk of expulsion. Ideally post-partum insertion should take place within 10 min of placental delivery (post-placental application) or later till 48 h of delivery. The risk of expulsion is higher if inserted after 48 h of delivery[1]. In the present study, IUD was inserted post- placentally in women delivering by caesarean section or vaginally (within 10 min of delivery of placenta). In all studied women, 129 had expulsion of IUD and the cumulative expulsion rate at the end of 6 months was 10.68 per cent. Four multisite studies in UN-POPIN report found that after six months, the cumulative expulsion rate was 9 per cent for immediate post-placental insertion compared with 37 per cent for insertions done between 24 to 48 h after delivery[3]. A study conducted in India on 115 women undergoing IUD insertion within first 10 days post-partum reported high rate of expulsion; 67 per cent of cases retained IUD, 4.3 per cent of cases had IUD slid in cervical canal and 6.1 per cent women had complete expulsion of IUD. The author concluded positively on post-partum insertion of IUD especially in the rural setting where women come to the hospital only for delivery[4]. Another Indian study conducted on 168 women reported 16.4 per cent as IUD expulsion rate in women undergoing post-puerperal IUD insertion[5]. As the insertion was done in post-puerperal period, the expulsion rate was higher in this study as compared to the present study. Another study by Celen *et al* in 2003 had 11.3 per cent cumulative expulsion rate for CuT 300B[6].

In the present study, the rate of IUD expulsion was slightly lower in the group of women delivering by caesarean section as compared to those delivering vaginally, although the difference was not statistically significant. Studies conducted in other parts of the world also reported similar expulsion rate. The expulsion rate in present study was however, slightly higher than reported in interval insertion technique (1-7%).

There were no cases of perforation or misplaced IUD in the present study. Global health technical briefs on immediate post-partum insertion safety and efficacy said that there are a few reports addressing the relative safety of immediate post-partum insertion[4]. A multisite trial found no instances of perforation or infection due to post-partum IUD. As the present study had small number of patients; it does not accurately reflect the incidence of the rare event of perforation or misplaced IUD.

In the present study, there were no cases of PID. A study conducted in 13 countries studied infection (PID) due to IUD. They have reported similar rate of infection with immediate insertion and interval insertion[7]. Another trial did not find any instance of infection due to post-partum IUD insertion[8].

The literature mentions menorrhagia due to IUD.(I) In the present study, 27.23 per cent had menorrhagia. Of these, IUD had to be removed as menorrhagia did not respond to mefenamic acid in 65 women. Welkovic *et al* studied post-partum bleeding and infection after post-placental IUD insertion, and found no difference in the incidence of excessive bleeding[8].

In conclusion, immediate post-partum insertion of IUD appears to be safe and effective method of contraception. There was no case of IUD perforation. The method may be particularly beneficial in our setting where women do not come for post natal contraception counseling and usage. The limitations of the study were a small sample size being followed up for 6 months only. The lost to follow up rate (21.38%) was also high. The patients should have been followed for at least one year to comment on the failure rate of this technique.

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