International Journal of Gynecology and Obstetrics 116 (2012) 31–34

Contents lists available at SciVerse ScienceDirect

International Journal of Gynecology and Obstetrics

journal homepage: www.elsevier.com/locate/ijgo

CLINICAL ARTICLE

Puerperal and menstrual bleeding patterns with different types of contraceptive device fitted during elective cesarean delivery

Mervat S.E. Elsedeek *

Department of Obstetrics and Gynecology, Faculty of Medicine, Alexandria University, Alexandria, Egypt
Elshatby Maternity University Hospital, Alexandria, Egypt

ARTICLE INFO

Article history:
Received 21 March 2011
Received in revised form 24 July 2011
Accepted 3 October 2011

Keywords:
Elective cesarean
Intraoperative fitting
Intrauterine contraceptive device
Intrauterine system
Menstrual
Puerperal

ABSTRACT

Objective: To evaluate the impact of a copper-containing intrauterine contraceptive device (IUCD) and the levonorgestrel-releasing intrauterine system (IUS) on puerperal and menstrual bleeding when fitted intraoperatively during scheduled elective cesarean. *Methods:* Participants were allocated to 3 groups: cesarean with no device inserted; IUCD inserted during cesarean; and IUS inserted during cesarean. *Results:* There was significantly shorter and lighter puerperium in the IUS group (20.2 ± 7.7 days and 3.1 ± 1.6 pads/day) than in the IUCD (33.4 ± 9.5 days and 4.9 ± 2.4 pads/day) and the control (27.0 ± 11.4 days and 4.9 ± 2.3 pads/day) groups ($P<0.012$ and $P<0.0001$, respectively). At the end of puerperium, mean duration of amenorrhea was significantly longer in the IUS group than in the IUCD and control groups ($P<0.0001$). Menstrual periods were longer and heavier in the IUCD group than in the control group but the difference was not significant ($P>0.07$). In the IUS group, menstrual periods were significantly shorter and lighter than in the other groups ($P<0.0001$). *Conclusion:* Intrauterine system fitting at the time of elective cesarean is associated with significant reductions in the duration and amount of puerperal blood loss, as well as a high incidence of amenorrhea and lighter periods thereafter.

1. Introduction

Intrauterine contraceptive devices (IUCDs) are a popular contraceptive method in low-income countries because they possess many of the criteria of the ideal contraceptive—being simple, cheap, long acting but reversible, and devoid of systemic adverse effects. Insertion of an IUCD in the delivery setting is desirable for many women because the need and motivation for contraception is high and the setting is convenient for both the woman and the service provider [1,2]. Scheduled elective cesarean is another occasion when an IUCD can be fitted, with the additional advantage of a closed cervix—which might reduce expulsion rates [3,4]. These methods of application are popular in several low-income countries such as China, India, Mexico, and Egypt, where population expansion is fast and contraception is highly desirable, although women's compliance is low [5]. Intraoperative fitting of IUCDs circumvents most of the difficulties associated with office insertion, including difficult or failed insertion with tight cervix, pain, vasovagal attacks, misplacement, perforation, and ascending infection. The levonorgestrel-releasing intrauterine system (IUS) has several potential advantages over IUCDs, including higher effectiveness and fewer contraindications, but for ex-IUCD users the major difference is the marked reduction in menstrual blood loss compared with the usual increased bleeding associated with IUCDs [6,7]. In addition, the IUS is suitable for use in some women for whom the insertion of IUCDs is excluded, such as those with a history of or increased susceptibility to pelvic inflammatory disease [8] and HIV [9]. Efficacy has been compared to that of female sterilization, and reversibility is prompt [10].

The aim of the present study was to test the hypothesis that the IUS can be fitted during cesarean—like other IUCDs—without affecting puerperal physiology, uterine involution, and breastfeeding, in addition to evaluating its impact on puerperal bleeding.

2. Materials and methods

All patients scheduled for elective cesarean delivery between January 1, 2007, and January 1, 2009, at Elshatby Maternity University Hospital, Alexandria, Egypt, and at 2 private hospitals in Alexandria were counseled for postpartum contraception using either a copper-containing IUCD (Nova-T; Bayer Schering, Turku, Finland) or the IUS (Mirena; Bayer Schering, Turku, Finland). Allocation relied on patient choice (Fig. 1) because randomization and blinding were not possible or ethically acceptable, and patients had been approached earlier during the third trimester to allow enough time for making a choice. All participants were multiparous women undergoing elective repeat cesarean for term singleton pregnancy for up to the 5th time. Inclusion criteria were age between 30 and 40 years; body mass index (BMI, calculated as weight in kilograms divided by the square of height in meters) up

* 649 Elhoreya St Janaclis, Alexandria, Egypt. Tel.: +20 35759915; fax: +20 34832363.
E-mail address: mervatsheikhelarab@yahoo.com.

0020-7292/$ – see front matter
doi:10.1016/j.ijgo.2011.07.036

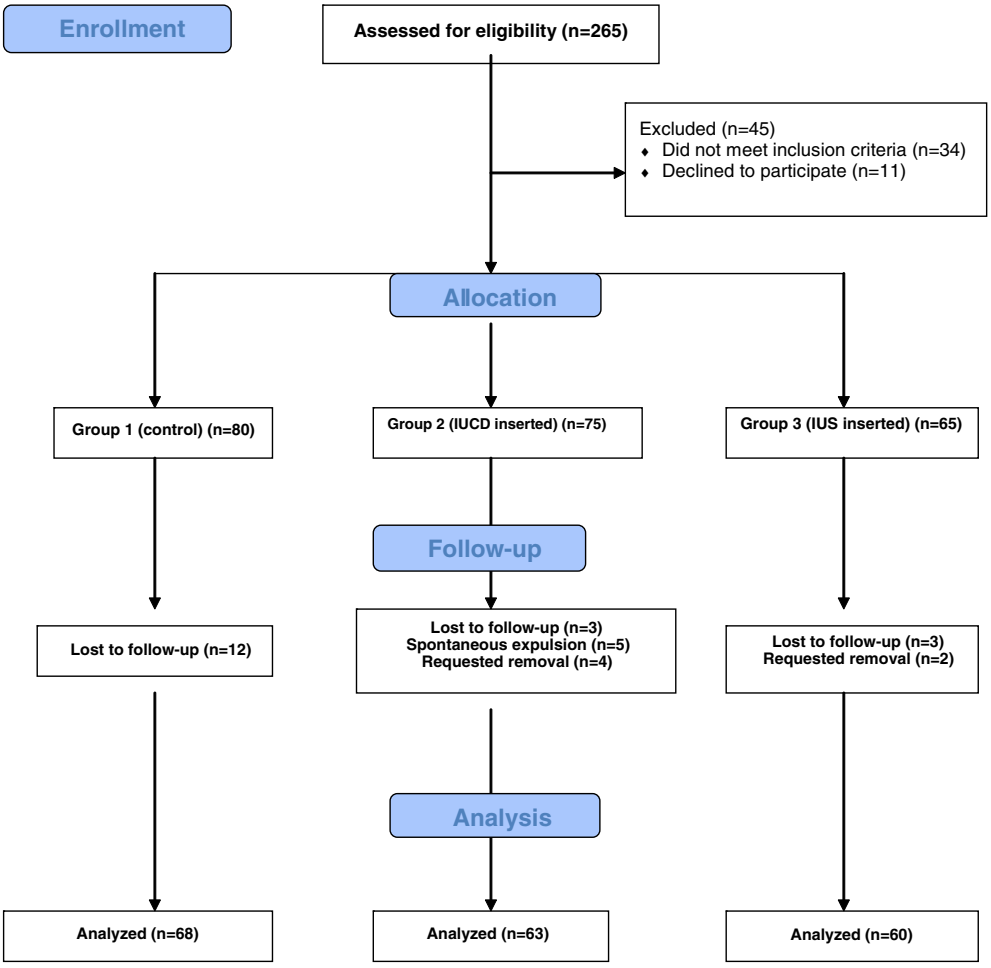

Fig. 1. Flow chart of participants.

to 35; past history of regular menses of average duration and amount; lack of uterine pathology such as myoma; and lack of contraindication to IUCD or progestational therapy. Exclusion criteria were intention not to breastfeed; hepatitis B and C; and HIV seropositivity. The control group contained women not requiring contraception because they did not have a partner, and those intending to use barrier contraception. The study was approved by the ethics committee of the Alexandria Faculty of Medicine, and written informed consent was obtained from all participants. Patients were allowed to withdraw from the study or request contraceptive removal at any time.

Devices were placed in the uterine fundus through the incision after placental removal, and the threads were guided through the cervix after shortening to approximately 10 cm. For prophylaxis, 2 g of intravenous cephalosporin was administered intraoperatively.

Patients were instructed to use standard pads and were given pictorial representation of bad soiling [10]. Semi-quantitative assessment of menstrual blood loss using pictograms has revealed a sensitivity of 85% and a specificity of 89% compared with the alkaline hematin method [11,12]. Participants were asked to record their bleeding diary objectively, relying on the pictograms; self-reported data were statistically analyzed to minimize bias. Diary data included only those related to bleeding, but participants were asked to keep notes about any additional symptoms or relevant problems. Postpartum follow-up was arranged fortnightly for 6 weeks after cesarean. At each visit, sonography was performed to assess uterine involution and to check that the device was still present. Follow-up visits were arranged monthly thereafter for 1 year, then every 3 months in the 2nd year. Statistical analysis was performed using SPSS version 17 (SPSS, Chicago, IL, USA). Analysis of variance was used to compare more than 2 groups. $P<0.05$ was considered to be statistically significant.

3. Results

Overall, 191 participants were included in the analysis. The 3 groups were comparable with regard to age, parity, BMI, duration of pregnancy at delivery, and birth weight (Table 1). Five women—all from the copper IUCD group—experienced spontaneous expulsion of the device, and 6 requested removal of the device: 4 from the copper IUCD group and 2 from the IUS group. Removal was performed in an office setting. The mean duration of puerperal bleeding was 27.0 ± 11.4 days in the control group (group 1), during which the mean number of pads used per day was 4.9 ± 2.3. Women in the IUCD group (group 2) had a significantly longer duration of bleeding

Table 1
Participant demographics.[a]

	Control group (n = 68)	IUCD group (n = 63)	IUS group (n = 60)	*F* value	*P* value
Age, y	34.6 ± 1.9	31.0 ± 3.8	32.7 ± 2.7	6. 37	0.213
Gravidity	2.2 ± 1.7	3.4 ± 0.9	3.7 ± 1.3	9.408	0.509
Parity	1. 6 ± 1.2	2.1 ± 0.6	2. 5 ± 1. 4	3.46	0.174
Body mass index [b]	29.9 ± 2.7	30.1 ± 1.8	31.7 ± 1.4	0.455	0.635
Gestational age, wk	38.2 ± 1.6	39.1 ± 0.1	38.3 ± 0.9	27.04	0.340
Birth weight, kg	3.4 ± 0.7	3.4 ± 0.7	3.3 ± 0.8	0.572	0.421

Abbreviations: IUCD, intrauterine contraceptive device; IUS; intrauterine system.
[a] Values are given as mean ± SD unless otherwise indicated.
[b] Calculated as weight in kilograms divided by the square of height in meters.