

Reversible, Long-Action Reproductive Control with Frameless IUD for Intracesarean Insertion

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Short Communication

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Immediate post placental IUD insertion at the time of cesarean section provides a good opportunity to achieve long-term contraception with minimal discomfort to the patient. Return to fertility post-delivery is not always predictable as it can occur as soon as 3 weeks in non-lactating women and may not necessarily be accompanied by menses. According to the World Health Organization, contraception post-cesarean delivery is a necessity for at least 24 months, to allow the scar to heal as rupture of the uterus during the next pregnancy is often catastrophic [1]. Use of contraception as early as possible post-delivery would assure prevention of uterine rupture post-cesarean section allowing for the wound to heal as well as for the woman to fully recover from her pregnancy.

Immediate IUD insertion has been found to be safe as no significant differences in postpartum hemorrhage, continuance of lochia was observed, and healing of uterus was found to be normal. No studies have shown any increase in the risk of infection or other complications either related to IUD insertion during cesarean section delivery [2]. Both copper IUDs and also levonorgestrel-releasing intrauterine system (LNG-IUS) can be used as the hormone released in the uterine cavity does not affect breast feeding [3]. According to a study conducted in Egypt, the levonorgestrel intrauterine system fitted at the time of elective cesarean was associated with significant reductions in the duration and amount of puerperal blood loss, as well as a high incidence of amenorrhea and lighter periods there after [4]. This may be important to help

women recover more quickly from anemia after childbirth and avoid the break through bleeding and spotting episodes that often lead to removal of the LNG-IUS.

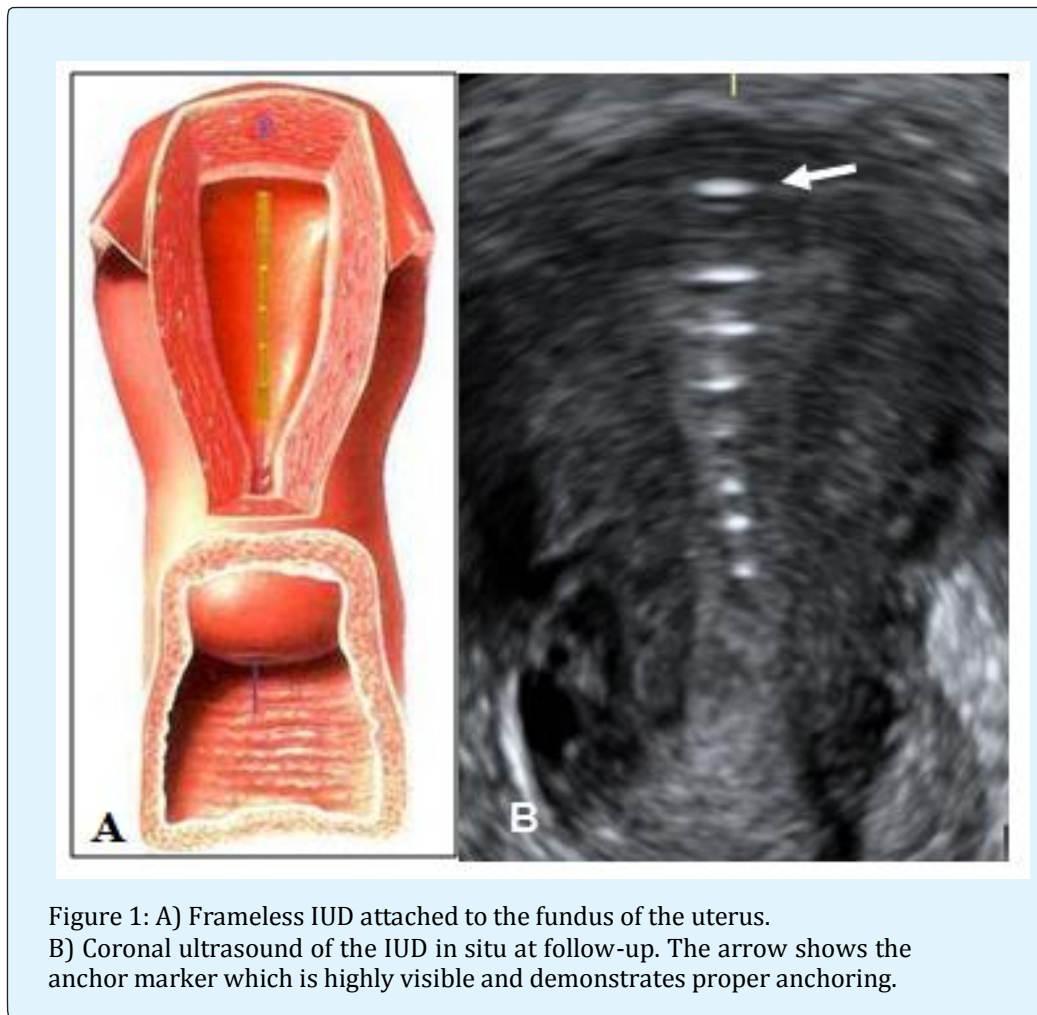
All IUDs can be used for immediate insertion post-delivery. However, most reports mention higher expulsion rates varying from around 5% at 12 months to up to 50% and even higher if partial expulsions are included in the analysis [5-8]. Çelen et al. conducted a study in two hundred forty-five women in Turkey with term pregnancies delivered by cesarean section. The participants were examined before hospital discharge and at 6 weeks postpartum. Expulsion occurred in 17.6% of women. Greater than one fourth of the participants discontinued IUD use due to spontaneous expulsion or other medical reasons [9].

A problem with conventional IUDs and the LNG-IUS is that even if the IUD is retained in the large involuting uterus, many IUDs displace from their original location. Misalignment and rotation was common with both LNG-IUS and copper IUD on ultrasound examination in an immediate postplacental study in cesarean patients conducted in Egypt. The devices were displaced in almost half of the women.⁴Displacement will likely cause discrepancy and embedment during involution of the uterus, particularly during prolonged lactation as hyper involution in these women is not uncommon [10].

Attempts to solve the expulsion problem of IUDs inserted postpartum has a long history [11]. To solve this

problem, a new method to fix copper cylinders to the fundus of the postpartum uterus was recently developed (Figure 1a). The procedure is simple and can be performed under 4 minutes with no discomfort to the patient and minimal surgical risk. The technique consists of the precise placement of the anchoring knot immediately below the serosa of the uterus, followed by fixing the knot in place with an absorbable suture. The IUD tail is looped in the cervical canal or is cut at the level

of the cervix. To check IUD placement, a follow-up sonography can be performed to localize the stainless steel marker attached to the anchoring knot (Figure 1b). The anchor can also easily be removed by pulling on its lower end (tail). Unlike irreversible sterilization methods return of fertility is immediate. Ongoing studies confirm the efficacy of the technique and the high acceptability of the frameless IUD by women.



Frameless IUDs or IUS have many advantages as they fit in cavities of every size and shape and will adapt to the uterine cavities during involution of the postpartum

uterus due to their small and flexible design (Figure 2a and Figure 2b).

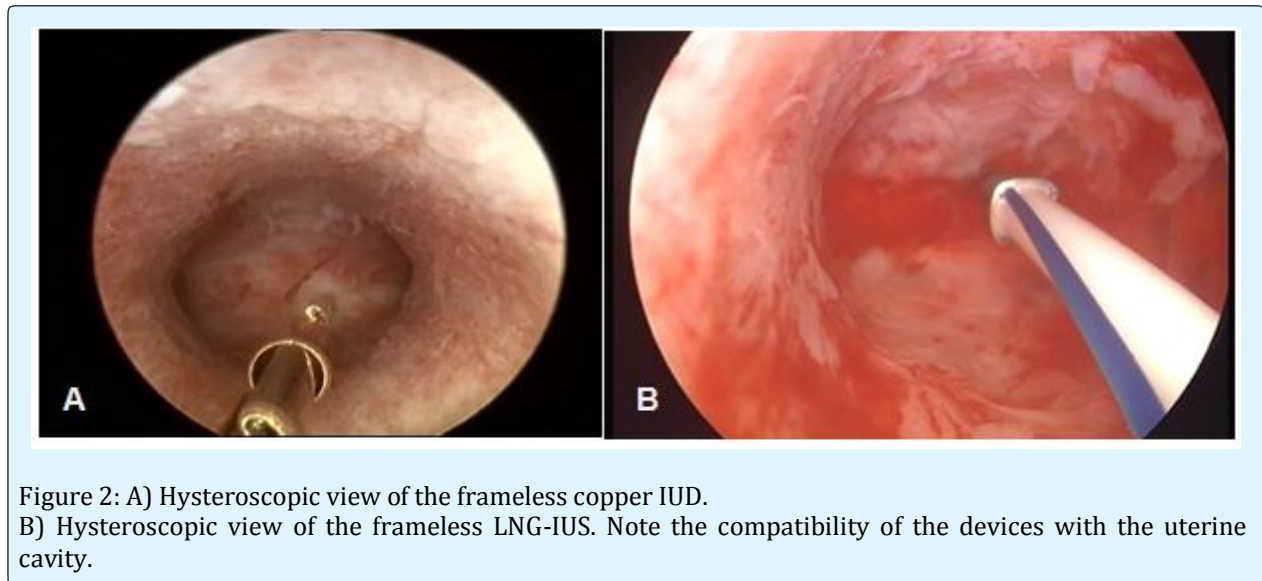


Figure 2: A) Hysteroscopic view of the frameless copper IUD.
B) Hysteroscopic view of the frameless LNG-IUS. Note the compatibility of the devices with the uterine cavity.

Anchoring of frameless design IUDs, which lack conventional cross arms, to the fundal wall of the uterus has been medically and commercially available throughout Europe for many years in the form of GyneFix® (Control Research, Belgium). Multiple clinical trials demonstrated the anchoring technique to be a valid concept [12]. Upon insertion of the device, the copper ions are released from the outside as well as from the inside of the copper cylinders, generating high copper ion release. The copper ions will spread throughout the genital tract and fallopian tubes, preventing fertilization and ectopic pregnancy. The 10-year frameless IUD was found to be as effective as tubal sterilization [12]. Due to its long duration of action it could be positioned as a reversible alternative to tubal sterilization which is particularly interesting in postpartum women.

Conflict of Interest

Dirk Wildemeersch has conducted research in the field of non-hormonal and hormonal, framed and frameless intrauterine devices, including in nulliparous and adolescent women, for 30 years. Norman Goldstuck conducted research in intrauterine device use, including adolescents, for over 30 years.

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