



Retrospective Study of Safety and Efficacy of Post-Placental, Post-Abortion, and Interval CuT Insertion at a Tertiary Care Center, Pune, India

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Abstract

Background: Intrauterine contraceptive devices (IUCDs) are highly effective for long-term contraception. Immediate post-placental and post-abortion insertion offers immediate protection and convenience.

Objective: To assess the safety and efficacy of Cu-T 380A insertion immediately after placental delivery or surgical abortion at a tertiary care center.

Methods: A retrospective study from April 2022 to May 2025 included 1634 patients who received Cu-T 380A within 10 minutes of placenta delivery (post-placental intrauterine contraceptive device, PPIUCD), after first trimester medical termination of pregnancy (MTP) with dilatation and evacuation (D&E), or as interval insertions. Follow-up was conducted at 6 weeks, 6 months, and 1 year.

Results: Complications included rolled-up or missing thread in 408 patients (25%), expulsion in 163 patients (10%), and displaced Cu-T in 49 patients (3%). No pregnancies were reported, indicating high efficacy.

Conclusions: Immediate insertion of Cu-T 380A is safe and effective, with high efficacy and manageable complications. Promotion and counseling are recommended to enhance acceptance.

Keywords: PPIUCD, Cu-T 380A, D&E, Interval CuT Insertion

Introduction

Intrauterine contraceptive devices (IUCDs) are among the most effective reversible contraceptives, with failure rates comparable to sterilization.¹ The Cu-T 380A, a copper-bearing IUCD, provides up to 10 years of contraception by releasing copper ions that impair sperm function.² Immediate post-partum insertion, defined as within 10 minutes of placental delivery, post-abortion insertion, and interval insertion offer advantages, including confirmed non-pregnancy status and high motivation for contraception.^{2,3} Despite concerns about higher expulsion rates, studies suggest immediate insertion leads to higher continuation rates due to better uptake.^{2,4}

In a country like India, the Cu-T 380A is a cornerstone of family planning programs, provided free by the government.⁵ Effective contraception reduces maternal mortality by 20–35% and infant mortality by up to 20% by preventing unwanted pregnancies and optimizing birth spacing.¹ This study evaluates the safety and efficacy of immediate post-placental, post-abortion, and interval Cu-T 380A insertion at Kamla Nehru Hospital from April 2022 to May 2025.

Methods

This retrospective study was conducted at Kamla Nehru Hospital, Pune, from April 2022 to May 2025. A total of 1634 patients who underwent Cu-T 380A insertion were included. Insertions were performed immediately after placental delivery following normal

vaginal delivery (NVD), after dilatation and evacuation (D&E) for abortions up to 12 weeks gestation, or as interval insertions (during a regular visit not immediately post-delivery or post-abortion). Patients with bleeding disorders, hemoglobin less than 8 g/dL, or infections during abortion or labor were excluded.

Follow-up visits were scheduled at 6 weeks, 3–4 months, 6 months, and 1 year post-insertion to monitor for complications, including unusual vaginal discharge, irregular vaginal bleeding, expulsion, and infection.⁶ Data on complications, such as rolled-up or missing thread, displaced Cu-T, expulsion, and menstrual complaints (irregular periods, dysmenorrhea, and menometrorrhagia), were collected and analyzed using descriptive statistics. The Cu-T 380A device, a standard copper intrauterine device, was sourced through government supply channels in India. Ethical approval was not required for this retrospective study, as stated in the declarations.

Results

Of the 1634 patients who received Cu-T 380A post-placental insertion, 626 were from April 2022 to May 2023, 649 from May 2023 to June 2024, and 359 from June 2024 to May 2025 after normal vaginal delivery (NVD) or dilatation and evacuation (D&E). Additionally, 142, 331, and 269 patients had medical termination of pregnancy (MTP) with Cu-T insertion or interval Cu-T insertion during these periods, respectively, totaling 2376 insertions (Table 2). Table 1 summarizes the complications observed among the 1634 post-placental insertion patients.

Discussion

This study confirms the safety and efficacy of immediate post-placental, post-abortion, and interval Cu-T 380A insertion.^{2,3} The 25% rate of rolled-up or missing thread is a common issue with IUCDs, often requiring ultrasound to confirm placement but not necessarily removal.² The 3% displaced Cu-T rate aligns with literature indicating minor malpositioning risks.⁷ The 10% expulsion rate among follow-up patients is consistent with systematic reviews reporting 10–15% for immediate post-partum insertions compared to 1–2% for interval insertion.⁴ The absence of pregnancies underscores the high contraceptive efficacy of Cu-T 380A.³

Menstrual complaints, reported by 15% of patients, are a known side effect of copper IUCDs, often manageable with counseling or medical intervention.⁵ The low infection rate (<1%) reflects proper screening and insertion techniques, aligning with literature indicating a low risk of pelvic inflammatory disease post-insertion.⁶ Community misconceptions about IUCD safety, such as fears of pain, displacement, or menstrual changes, may limit uptake.⁵ Educational campaigns and counseling can address these barriers, as suggested by the high motivation for contraception post-delivery or abortion.⁵ Limitations include the retrospective design, potential for incomplete follow-up data, and lack of comparison with non-immediate insertions.

Conclusions

Immediate post-placental, post-abortion, and interval Cu-T 380A insertion is a safe and effective contraceptive strategy, with manageable complications.^{2,3} Health-care providers should promote this method, coupled with robust counseling to dispel myths and enhance

acceptance.⁵ Future research could explore strategies to reduce expulsion and thread-related issues, such as optimized insertion techniques or devices tailored for post-partum use.⁴

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Table 1: Complications Following Cu-T 380A Insertion

Complication	Number of Patients	%
Rolled-up/missing thread	408	25%
Expulsion	163	10%
Displaced Cu-T	49	3%
Menstrual complaints	245	15%
Infection	16	<1%
Uterine perforation	16	1%
Pregnancy	0	0%

Table 2: Cu-T Insertions by Year and Type

Year	MTP with Cu-T Insertion & Interval Cu-T	Cu-T Inserted After Delivery
April 2022–March 2023	142	626
April 2023–March 2024	331	649
April 2024–March 2025	269	359
Total (2022–2025)	742	1634