



A RARE CASE OF FAVOURABLE PREGNANCY OUTCOME FOLLOWING CONTRACEPTION FAILURE WITH INTRAUTERINE DEVICE IN SITU AMIDST 'LOCKDOWN' DURING COVID-19 PANDEMIC

Obstetrics & Gynaecology

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ABSTRACT

Different reliable methods of contraception are used. However, women still get pregnant when it fails. It would be dramatic when a lady has an intrauterine device in place and still she conceive and delivers a healthy baby at term. Failure rate of copper containing intrauterine contraceptive device (IUCD) is usually less than 2 women per 100 women years. Pregnancy continued with IUCD in situ can result in adverse pregnancy and neonatal outcome in comparison to its removal at an early stage of pregnancy. Early detection of pregnancy with IUCD in situ and proper management are very important to avoid many obstetric emergencies later on. The reported case is precisely the same kind of case, where the lady had left with no other option but to continue her pregnancy due to lack of required medical facility early in her gestation, but had a favourable maternal and neonatal outcome.

KEYWORDS

Adverse pregnancy outcome; Intrauterine copper device; Pregnancy

INTRODUCTION

Long-acting reversible contraception (LARC) modalities are chosen by more and more women as method of contraception. [1] Among available LARCs, intrauterine device (IUD) is one of the most common non-hormonal and inexpensive. The copper core of intrauterine copper device (IUCD) acts by sterile inflammatory effects on the sperm and ova, decreases sperm motility and impedes implantation. Different IUCDs are approved for use with different lengths of time of action ranging from 5-10 years.

Pregnancy among IUCD users is uncommon; the 1st year failure rate for typical use is 0.8%. [2] These devices are being quoted to be over 99% effective over 5 years of use. Several studies investigating the cause of pregnancy despite IUD use suggested composition of IUCD, duration of use, IUD position, age of women, history of expulsion and failure of the IUD as risk factors for its efficacy. [3]

The women who become pregnant with an IUCD in-situ, are at risks associated with both removal of IUCD and as well as keeping the IUCD in place during the pregnancy. Some authors suggested in favour of removal of the IUCD during 1st trimester of pregnancy itself to prevent miscarriages and septic complications. [4] A retrospective study has shown that continuing pregnancy with a retained IUCD have risks of miscarriages, preterm labour and delivery and chorioamnionitis. [5] WHO recommended removal of IUD improves pregnancy outcome if the IUD strings are visible or can be retrieved safely from the cervical canal and the risks of miscarriage, preterm delivery and infection are substantially high if IUDs are left in-situ. [6] A systematic review concluded that, pregnancies complicated by remaining IUD in-situ were at greater risk of adverse pregnancy outcomes and early IUD removal appeared to improve outcomes but didn't entirely eliminate risks. [7] In this report, we present a case of pregnancy with IUCD in-situ as a result of contraception failure which continued till term without any complication, delivering an alive healthy new born without any perinatal complication as well.

CASE REPORT

22 years old post-caesarean patient with history of interval application of IUCD (Multiload) for spacing of birth, visited antenatal clinic for the first time in this pregnancy at 28 weeks period of gestation in the last week of May 2020. She is from rural area of Western India and had no proper antenatal consultation prior in this pregnancy. This was deemed to be a critical obstetric situation.

In March 2018, she had delivered an alive female baby at term through lower segment caesarean section (LSCS) due to non-progress of labour with uncomplicated antenatal and perinatal period. She had been applied with IUCD at Primary Health Centre (PHC) by Auxiliary Nurse Midwife (ANM) six months after her delivery for spacing of birth. She was having irregular menstruation but she was checking the IUCD strings regularly and it was found to be in place.

Her last menstrual period was on 05 November 2019 which initially

she considered as irregular menstruation. But, when she hadn't got her menstruation till March 2020 and also started having some minor ailments of early pregnancy, she got worried. Incidentally, by that time, 'Lockdown' had also started throughout the world in order to curb the spread of global pandemic of COVID-19. She managed to get herself checked by an Accredited Social Health Activist (ASHA) worker at PHC. Her 4th month of her pregnancy with IUCD in place was confirmed. She had done some very basic investigations like haemoglobin level estimation and urine examination, which were essentially within normal range. Somehow, she managed an obstetric ultrasound done next month, which confirmed viable pregnancy, corresponding to her LMP without any obvious congenital anomalies, but it couldn't locate her 'missing' IUCD; she also was unable to feel the strings of the IUCD by that time. She was sure about non-expulsion of the said IUCD till date. She was very much distressed about the outcome of the pregnancy as a result of contraceptive failure and possibly the IUCD being still in place, but hadn't got opportunity for a required Obstetric consultation due to restrictions to curb spread of COVID-19 by then.

The distressed lady had only managed to travel to her distantly located husband in May 2020. She was examined by the Obstetrician after exhaustion of her institutional quarantine period in view of COVID-19 at 28 weeks of period of gestation. She had apparently uncomplicated pregnancy till date. Her obstetric examination and investigations were essentially without any abnormality but bed-side screening obstetric ultrasound couldn't locate the 'missing' IUCD. She was counselled regarding possible antenatal and perinatal complications and placed on close obstetric follow-up. Her 3rd trimester ultrasonography was done at 33 weeks of gestation suggesting a viable pregnancy corresponding to her dates; the 'missing' IUCD located in between anterior uterine wall and amniotic membrane away from lower uterine segment (Figure 1).



Figure 1: Obstetric ultrasonography locating the IUCD between upper

anterior uterine wall and amniotic membrane along with viable pregnancy at 33 weeks of period of gestation.

She was planned for elective LSCS at around 38 completed weeks after pre-anaesthetic check-up. This time she was unwilling for any immediate contraception at delivery in apprehension of its failure even after detailed counselling.

She was subjected to daily feto-maternal evaluation for a week before surgery. She suddenly started having early labour pain a day prior to her elective LSCS, and was rushed into operation theatre. She underwent emergency LSCS and had delivered a healthy new-born girl child of birth weight of 3.0 Kg with normal APGAR score without any obvious congenital malformation and sign of injury. The 'missing' IUCD was located in after-coming liquor, clutched by the new-born (Figure 2).



Figure 2: Healthy alive new born girl child born at term with the 'failed' IUCD in her hand.

Her intra-operative and post-operative period were uneventful. Essential new born evaluation was also without any complication and was discharged on 4th post-operative day. She is presently on postnatal follow-up and doing well without any complaints.

DISCUSSION

More than 150 million women worldwide prefer IUDs as method of contraception. IUDs act as foreign objects and induce an intense sterile inflammatory reaction triggering a spermicidal environment within the uterine cavity. In addition, copper itself potentiates the intrauterine spermicidal environment. [8] IUCDs are recommended for intrauterine use for 5-10 years in India (varies from 3-10 years in other countries). The Pearl index for IUCDs is 0.8% with typical use and 0.6% with perfect use of contraceptive method. Though the failure rate can increase up to 2.2% in the 1st year of IUCD use, attributable to the relatively higher incidence of displacement. [9] An intrauterine pregnancy was three times more likely to occur with a displaced or missing IUD. [10]

Intrauterine pregnancies occurring in presence of an IUCD in place have queries about the best management approach in these cases. Systematic review by Brahmi et al. consistently demonstrated that pregnancies with an IUD in place are associated with adverse pregnancy outcomes; with greatest risk with non-removal of IUDs. [7] Women with retained IUDs had a greater risk for spontaneous abortion, preterm delivery, preterm premature rupture of membrane (PPROM) and chorioamnionitis. [11] Compared with pregnancies where IUDs were removed in early stage, pregnancies with retained IUDs were at increased risk of spontaneous abortion, preterm delivery and septic abortion. [12,13] A few studies report on fetal malformations, but data are insufficient to draw conclusions on any association between conceiving with an IUD in-situ and risk of malformations. [14,15,16]

Several case series have reported ultrasound-guided IUD extraction when the strings have retracted inside the uterus. [17] Schiesser et al. described successful ultrasound-guided removal of 80 out of 81 'lost IUDs' (75 in 1st trimester and 6 in 2nd trimester) and also report a preterm delivery rate of 13.5% and a spontaneous abortion rate of 22.1% without trimester-wise differentiation. [18] Furthermore, the exact timing of removal of IUD was not always specified; IUD removal at later gestational ages may affect pregnancy outcomes differently than IUD removal during early stage of pregnancy. [15]

An important point to be emphasized is that majority of the retained IUDs had been inserted at a Maternity hospital, highlighting the importance of professional expertise required during application of IUDs. IUD application by experienced Midwives or by Gynaecologists at tertiary care centres may decrease the IUD displacement rate and also the adverse outcomes associated with pregnancy. [19] Study on the location of IUD in the presence of pregnancy, concluded that an intrauterine pregnancy was three times more likely to occur with a misplaced or missing IUDs as stated earlier, but they didn't investigate the effect of location of IUDs on outcome of pregnancy. [10]

CONCLUSION

Contraception failure happen to occur amongst all methods including IUCD users as well though incidence is low; mostly within 1st year of use and in cases of misplaced IUCDs. Women who became pregnant with an IUD in place were at higher risk of adverse pregnancy outcomes than who conceived without an IUD in-situ. Early removal of IUD appeared to improve pregnancy outcomes in most of the studies when compared with women who retained the IUDs throughout pregnancy, but it didn't eliminate the risks. WHO also had recommended in favour of removal of IUDs as it improves pregnancy outcome. Whenever the IUD is removed or retained in-situ during pregnancy, there is a need for counselling and close maternal and fetal surveillance including early obstetric ultrasonography is of utmost importance. Further research mainly prospective controlled studies are needed to determine the best approach for the counselling and management of pregnancies in the presence of an IUD in place.

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REFERENCES

- [1] American College of Obstetricians and Gynaecologists Committee on Gynecologic Practice, Long Acting Reversible Contraception Working Group. ACOG Meeting Opinion no 450: Increasing use of contraceptive implants and intrauterine devices to reduce unintended pregnancy. *Obstet Gynecol* 2009;114(6):1434-438.
- [2] Trussell J. Contraceptive failure in the United States. *Contraception* 2011;83:397-404.
- [3] Thonneau P, Almont T, de La Rochebrochard E, Maria B. Risk factors for IUD failure: results of a large multicentre case-control study. *Hum Reprod* 2006;21:2612-616.
- [4] Skjeldestad FE, Hammervold R, Peterson DR. Outcomes of pregnancy with an IUD in situ - a population based case-control study. *Adv Contracept* 1988;4:248-53.
- [5] Ganer H, Levy A, Ohel I, Sheiner E. Pregnancy outcome in women with an intrauterine contraceptive device. *Am J Obstet Gynecol* 2009;201:381 e1-5.
- [6] Organization WH. Selected practice recommendations for contraceptive use. Research DoRHa. Geneva: World Health Organization; 2004.
- [7] Brahmi D, Steenland MW, Renner RM, Gaffield ME, Curtis KM. Pregnancy outcomes with an IUD in situ: a systematic review. *Contraception* 2012;85:131-39.
- [8] Hardeman J, Weiss BD. Intrauterine device: an update. *Am Fam Physician* 2014;89:445-50.
- [9] Heinemann K, Reed S, Moehner S, Minh TD. Comparative contraceptive effectiveness of levonorgestrel-releasing and copper intrauterine devices: The European active surveillance study for intrauterine devices. *Contraception* 2015;91:280-83.
- [10] Moschos E, Twickler DM. Intrauterine devices in early pregnancy: findings on ultrasound and clinical outcomes. *Am J Obstet Gynecol* 2011;204:427.e1-6.
- [11] Kim SK, Romero R, Kusanovic JP, Erez O, Vaisbuch E, Mazaki-Tovi S et al. The prognosis of pregnancy conceived despite the presence of an intrauterine device (IUD). *J Perinat Med* 2010;38:45-53.
- [12] Inal MM, Ertopcu K, Ozelmis I. The evaluation of 318 intrauterine pregnancy cases with an intrauterine device. *Eur J Contracept Reprod Health Care*. 2005;10:266-71.
- [13] Mermet J, Bolcato C, Rudigoz RC, Dargent D. Outcome of pregnancies with an intrauterine device and their management. *Rev Fr Gynecol Obstet* 1986;81:233-35.
- [14] Tatum HJ, Schmidt FH, Jain AK. Management and outcome of pregnancies associated with the copper T intrauterine contraceptive device. *Am J Obstet Gynecol* 1976;126:869-79.
- [15] von Theobald P, Duchemin JM, Levy G. The outcome of continuing pregnancies in patients with intrauterine devices. A retrospective study from Maternity Unit of the University Hospital Centre at Caen during period 1985-1988. *J Gynecol Obstet Biol Reprod (Paris)* 1990;19:863-68.
- [16] Ozzu-Erdinc AS, Tasdemir UG, Uygur D, Aktulay A, Tasdemir N, Gulerman HC. Outcome of intrauterine pregnancies with intrauterine device in place and effects of device location on prognosis. *Contraception* 2014;89:426-30.
- [17] Kirkinen P, Simojoki K, Kivela A, Joensuu P. Ultrasound-controlled removal of a dislocated intrauterine device in the first trimester of pregnancy: a report of 26 cases.

- Ultrasound Obstet Gynecol 1992;2:345-48.
- [18] Schiesser M, Lapaire O, Tercanli S, Holzgreve W. Lost intrauterine devices during pregnancy: maternal and fetal outcome after ultrasound-guided extraction. An analysis of 82 cases. Ultrasound Obstet Gynecol 2004;23:486-89.
- [19] Stewart M, Digiusto E, Bateson D, South R, Black KI. Outcomes of intrauterine device insertion training for doctors working in primary care. Aus Fam Physician 2016;45:837-41.