Case Report

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A Case Report of a Perforated Postpartum Intrauterine Contraceptive Device and Review of Literature

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Abstract

Uterine perforation is the most serious complication associated with an intrauterine contraceptive device. Perforation of the uterus by an intrauterine contraceptive device inserted in the immediate postpartum period has rarely been reported. The thick uterine wall in the postpartum period is thought to prevent perforation. However, hypoestrogenemia in the postpartum period, uterine involution, the softness of the postpartum uterus, breastfeeding may predispose to uterine perforation in the postpartum period though the insertion is by skilled operators. Migration of intrauterine contraceptive device through a path of lesser resistance is an area for concern. We report a case of partial perforation of Cu T380A placed during cesarean delivery.

Key words: Intrauterine contraceptive device, Perforation, Postpartum

INTRODUCTION

Provision of intrauterine contraceptive device in the immediate postpartum period offers an effective and safe method for spacing and limiting births. The postpartum intrauterine contraceptive device can be placed immediately following delivery of the placenta, during cesarean section or within 48 h following childbirth. Expulsion rates for postpartum intrauterine contraceptive device vary from 3% to 37%. In general, the expulsion rates for postpartum intrauterine contraceptive device range 10-14%.[1] Perforation of the uterus with postpartum intrauterine contraceptive device has not been reported so far. The thickness of the uterine wall in the postpartum period is thought to prevent perforation. A review of 3029 cases of postpartum intrauterine contraceptive device in Paraguay from 2000 to 2009 showed 0.0% perforation rate and 1.4% spontaneous expulsion rate.[2] The natural history of intrauterine device translocation following any type of uterine perforation is not well-understood and likely depends on a number of factors such as the type of intrauterine device, uterine morphology, the presence and location of leiomyomata, and the mechanics at the given insertion event. The risk of perforation is greatest during the 12 weeks after giving birth and while the patient is lactating.[3] Caliskan *et al.* reported that post-placental insertion and insertion after 6 months postpartum were found not to increase the risk of uterine perforation. However, insertions 0-6 months postpartum increased the risk of uterine perforation.[4] Kapp and Curtis concluded that post-placental placements during cesarean delivery are associated with lower expulsion rates than post-placental vaginal insertions without increasing rates of postoperative complications.[5] Whether this relates to assurance of high fundal placement or to less cervical dilatation is unclear. Shukla *et al.* in a 5 year experience with postpartum intrauterine contraceptive device at a tertiary care center involving 1317 women reported no cases of perforation or misplaced intrauterine contraceptive device.[6] The EURAS - intrauterine device study from 6 countries found that breastfeeding at the time of insertion was associated with a six-fold increase in uterine perforation and the risk was also more, if the women were up to 36 weeks postpartum at the time of insertion.[7] Both Andersson and

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Van Houdenhoven *et al.*, have discussed the role of uterine involution and increased uterine contractility as potential contributing factors to intrauterine perforation occurring in the postpartum period.[8,9] We report a case of partial perforation of Cu T380A placed during cesarean delivery.

CASE REPORT

A 20-year-old primigravida underwent an elective cesarean section in May 2014 for cephalopelvic disproportion with pregnancy induced hypertension. A term male child with birth weight 3.0 kg was delivered. CopperT 380A was inserted after delivery of the placenta after taking consent from the patient. She was discharged on the seventh postoperative day in good condition with advice to return after 6 weeks for review. She returned to her hometown and did not come for a follow-up visit. A total of 8 months following the cesarean section patient developed pain abdomen and went to a practicing gynecologist in her hometown. An ultrasonogram performed there showed the intrauterine contraceptive device perforating the myometrium up to the serosa and was referred to our tertiary care center for hysteroscopic removal. The patient attended our center 1½ months after being referred with persisting pain abdomen. On examination, there was tenderness in the suprapubic region. The threads of the CopperT were not visualized, and there was tenderness in the fornices. Repeat ultrasound showed intrauterine contraceptive device within the uterine cavity. The short limb of the CopperT was in alignment within the uterine cavity, and long limb of CopperT was oriented horizontally perpendicular to short limb and appeared to be coursing through myometrium up to the level of serosal lining. Possibilities included myometrial perforation and long limb at left cornu of the uterus (Figure 1).

After taking consent, the patient was posted for hysteroscopic removal of the intrauterine contraceptive device. On hysteroscopy, the CopperT was seen to be inverted with the short arms pointing downward, and the long limb deeply embedded in the myometrium at the fundus (Figure 2). The CopperT was removed and shown to the patient. The patient was discharged in good condition on the same day.

DISCUSSION

Insertion of an intrauterine device immediately after delivery is appealing for several reasons. The woman is known not to be pregnant, her motivation for contraception may be high, and the setting may be convenient for both the woman and her provider and does not affect breastfeeding. Uterine perforation is the most serious complication associated with the use of an intrauterine contraceptive device. Perforations may be partial with some portion of the device remaining within the endometrial cavity or complete with the device passing wholly into the peritoneal cavity (Figure 3).[10] The frequency of uterine perforation with an intrauterine contraceptive device is estimated to be around 1.2 per 1000 insertions.[11] Postpartum period <6 months, lactation, and amenorrhea may increase the risk of perforation. The World Health Organization (2009) recommends the intrauterine contraceptive device to be started after 4 weeks postpartum. Patients with the perforated intrauterine contraceptive device may be wholly asymptomatic or report with abdominal pain, abnormal vaginal bleeding or pregnancy. Most experts today advice removal of any perforated intrauterine contraceptive device. A missing intrauterine contraceptive device string should raise suspicion for this complication. Real-time transvaginal ultrasonography is the initial diagnostic modality. If the intrauterine contraceptive device is in the uterus and removal desired this may be done by using ultrasound guidance with the patient under paracervical anesthesia. If unsuccessful operative hysteroscopy should be undertaken. If no intrauterine contraceptive device is seen within the uterus on ultrasonography X-rays of the abdomen and pelvis should be obtained. Two to three different views should be used for optimal localization. Computerized tomography and magnetic resonance

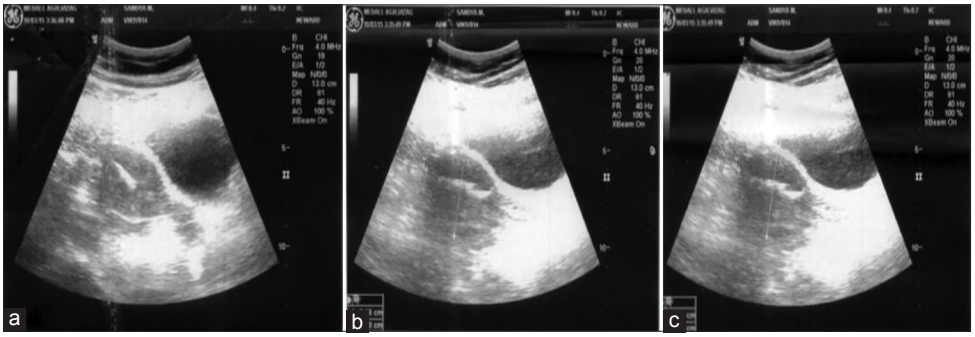

Figure 1: (a-c) Ultra-sonogram pictures of the perforated misplaced intrauterine contraceptive device

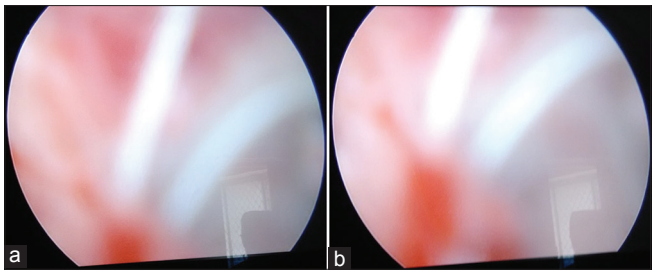

Figure 2: (a and b) Hysteroscopic pictures of the deeply embedded and inverted intrauterine contraceptive device

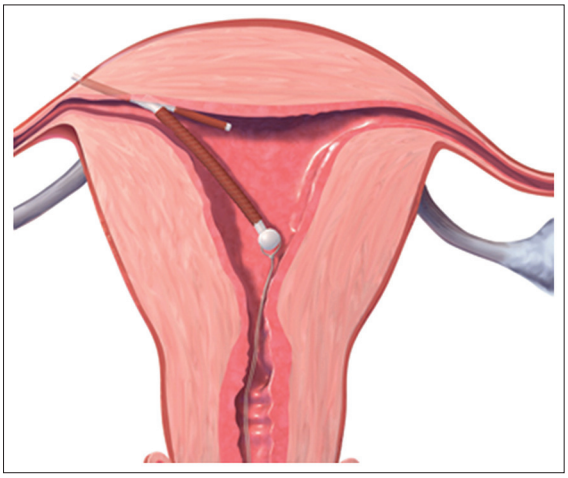

Figure 3: A copper intrauterine device perforating the serosa

imaging are other useful diagnostic modalities. If the intrauterine contraceptive device is deeply embedded into the myometrium or present within the peritoneal cavity operative laparoscopy is indicated for its removal. In certain cases, a combination of hysteroscopy and laparoscopy and rarely fluoroscopy will be required for localization and removal of the ectopic intrauterine contraceptive device. Efforts should be made to protect and confirm that all vital structures of the abdomen and pelvis are without injury following all but the most straightforward operative intrauterine contraceptive device retrievals.

CONCLUSION

Clinicians and patients should carefully weigh the benefits and risks of intrauterine contraceptive device insertions during the postpartum period. A follow-up examination 4-12 weeks after insertion is recommended to ensure correct positioning. Various outcomes associated with insertion of the intrauterine contraceptive device at the time of cesarean section can be another useful area for further research.

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