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Case Report

Transmigration of intrauterine contraceptive devices: embedded in urinary bladder wall in pregnant woman

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ABSTRACT

Globally, 14% of reproductive aged women use intrauterine contraception. The five intrauterine contraceptive devices (IUCDs) currently approved are chemically active and continually elute either copper or levonorgestrel. Uterine perforation is most serious and rare complication which can be acute or chronic in nature. Although uncommon, uterine embedment and perforation can occur. We report case of transmigration of intrauterine contraceptive device into the urinary bladder wall perforating the uterine wall in 25-year-old gravid female. She was subjected to ultrasound abdomen and pelvis which unveiled the diagnosis of migrated copper-T. Under spinal anaesthesia, laparotomy was done and IUCD was removed.

Keywords: Intrauterine device migration, Urinary bladder, Laparotomy

INTRODUCTION

Globally, 14 % of reproductive aged women use intrauterine contraception. The five intrauterine contraceptive devices (IUCDs) currently approved are chemically active and continually elute either copper or levonorgestrel.

Uterine perforation is most serious and rare complication which can be acute or chronic in nature. Although uncommon, uterine embedment (whereby the intrauterine device/intrauterine system (IUD/IUS) is located in myometrium) and perforation (where any or all of the IUD/IUS is located beyond the uterine serosa) occurs in approximately 1 in 1000 insertions.[1,2] Risk factors for perforation include breastfeeding, postpartum amenorrhea ≤6 months postpartum and provider inexperience and extremes of uterine flexion.[2,3] Acute perforations may present with typical minimal bleeding, pain abdomen, rarely acute lateral perforation may lacerate uterine artery that may prompt laparoscopy or laparotomy for achieving haemostasis. Very rarely with chronic perforation copper T may penetrate the muscular uterine wall to a varying degree. A patient may be asymptomatic but abdominal pain, uterine bleeding, or missing strings can be clues.[3] Distant migration to pelvic or abdominal structures like sigmoid colon, bladder, retroperitoneal migration, small bowel obstruction has been reported.[5,6] Notably, an extrauterine Cu-IUCD frequently induces an intense local inflammatory reaction and adhesion.[4]

CASE REPORT

A 25-year-old gravida 3, para 2, living 2 with 8+3 weeks of gestation with a copper T 380A placed about 5 months after her second vaginal delivery was referred to our institution for management. There was no history suggestive of expulsion of IUCD and on examination cervix was closed and IUCD threads were not visualised. Ultrasonography of pelvis revealed a single live intrauterine gestation of 8+3 weeks with migrated copper

T being impacted in posterior wall of urinary bladder close to fundus.

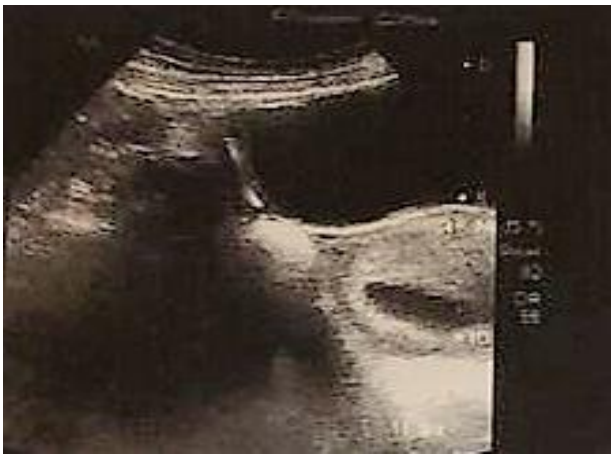

Figure 1: Transabdominal scan: copper T impacted in the posterior urinary wall close.

Plan to remove IUCD by laparoscopy with termination of pregnancy followed by bilateral salpingectomy was made. Due to financial constraints of patient, laparotomy was done under spinal anaesthesia and copper T was noted which was embedded in the posterior wall of urinary bladder without mucosal extension, that had induced local inflammatory reaction resulting in necrosis of surrounding tissue with abscess formation and omental adhesion.

Figure 2: Laparotomy: copper T in the posterior wall of bladder with omental adhesion.

Purulent material with necrotic tissue was debrided and copper T was removed after dissecting the detrusor muscle with serosa and omentum. Bladder serosa and muscle layers were sutured in two layers with 2-0 vicryl, dilute methylene blue was injected intravesically and bladder integrity was confirmed. At the patient's request, pregnancy was terminated by dilatation and curettage. Foley's catheter was insitu for 7 days. Patient was discharged on day 8 without complications.

Figure 3: Omental adhesiolysis with debridement of necrotic tissue.

Figure 4: Bladder serosa and muscle layer sutured in two layers with vicryl 2-0.

DISCUSSION

Perforation of uterus with IUCD is an uncommon phenomenon. Although perforations that occur do not cause long term harm in most of the cases but women are advised to go through surgical removal that has some risk. Harm associated with perforation may be loss of IUCD's contraceptive effect resulting in unwanted pregnancies and trauma to internal structures and adhesions.[7] Esposito et al postulated two mechanisms of uterine perforation namely immediate traumatic perforation and secondary perforation caused by gradual erosion through myometrium.[8]

Uterine perforations are described as partial if IUCD penetrates only the myometrium and complete when it penetrates all the layers of uterus and lies freely in the peritoneum.[9] Risk factors for perforations include insertion by less experienced clinicians, post-partum insertion less than 6 months, higher number of previous abortions and laceration.[2] Perforation typically occurs into the uterorectal pouch with an anteverted uterus or in the vesicouterine pouch if uterus is retroverted.[9] Most of the perforations go unnoticed at the time of insertion and is

suspected due to persistent symptom of mild lower abdominal pain during follow ups.[7] The diagnosis of perforation and localisation of IUCD is made by ultrasound scanning and is more precise using transvaginal ultrasound (TVS) than TAS. If ultrasonography (USG) fails, X-ray may be used to localise the device.[7] IUCD within the uterus maybe removed by pulling its string and if strings are missing it can be removed by uterine curettage or hysteroscopy. In cases where device is found outside the endometrial cavity or intraabdominally several techniques have been used; minimally invasive laparoscopic removal is the preferred surgical technique. But when removal is complicated open laparotomy may be safe.[7]

CONCLUSION

Intrauterine devices are simple, safe, cost effective and long-acting contraceptive. Although an uncommon phenomenon, uterine perforations with IUCD is an important risk that must be explained to patients. Most cases are due to traumatic perforation that occur at the time of insertion. Most perforations are uncomplicated with the device lying in quiescent state in the abdomen but once perforation is diagnosed the device should be removed as it can cause visceral perforation, fistula formation and other complications. The displaced device can be removed by laparoscopy and sometimes by laparotomy.

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