

CASE REPORT

Extrauterine Translocated Contraceptive Device: A Presentation of Five Cases and Revisit of the Enigmatic Issues of Iatrogenic Perforation and Migration

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ABSTRACT

Translocation of an intrauterine contraceptive device to an extrauterine site in the peritoneal cavity is an uncommon complication. In cases reported in literature, the timing of extrauterine presentation and the distant sites of translocation often raise the issue of whether iatrogenic uterine perforation or migration of the device was responsible. We present and discuss five referred cases of the extrauterine device inserted in centres outside the University of Port Harcourt Teaching Hospital. The indication for insertion of the intrauterine contraceptive device in the patients (mean age 25.6 years) was contraception in four patients and adhesiolysis for Asherman's syndrome in the fifth. The most common presenting symptom was inability to feel the device's string (in three patients). Four of the patients presented within one month of the insertion. Three of the five translocated intraperitoneal devices were recovered by laparotomy and the forth by laparoscopy. The fifth patient, pregnant, defaulted with the device still retained. We are of the opinion that primary iatrogenic uterine perforation occurs occasionally. Other possible translocatory mechanisms include spontaneous uterine contractions, urinary bladder contractions, gut peristalsis and movement of peritoneal fluid. (*Afr J Reprod Health* 2003; 7[3]: 117–123)

RÉSUMÉ

Dispositif contraceptif de l'extra-utérin déplacé: une présentation de cinq cas et le ré-examen des questions énigmatiques de la perforation et la migration iatrogènes. La translocation d'un dispositif intra-utérin vers un lieu extra-utérin dans la cavité péritonéale est une complication qui n'est pas commune. Selon les cas signalés dans la littérature, la chronologie de la présentation extra-utérine et les lieux éloignés de la translocation soulève souvent la question de savoir si la perforation utérine iatrogène ou la migration du dispositif qui en était responsable. Nous présentons et discutons cinq cas de dispositifs extra-utérins qui ont été insérés dans des centres hors du Centre Hospitalier Universitaire de Port Harcourt. L'indication pour l'insertion du dispositif intra-utérin dans les patientes (âge moyen 25,6 ans) était la contraception chez quatre patientes et l'adhésion pour le syndrome d'Asherman chez la cinquième. Le syndrome le plus commun était l'incapacité de sentir la ficelle du dispositif (chez trois patientes). Quatre patientes sont venues nous consulter moins d'un mois après l'insertion. Trois parmi les cinq dispositifs intra-péritonéal déplacés ont été recouverts à l'aide de la laparotomie et le quatrième à l'aide de la péritonéoscopie. La cinquième patiente est devenue enceinte malgré le fait que le dispositif était retenu en place. Nous sommes d'avis que la perforation utérine iatrogène primaire se produit arrive de temps en temps. D'autres mécanismes de translocation à envisager comprennent des contractions utérines spontanées, des contractions urinaires, le péristaltisme de l'intestin et le mouvement de la liquide péritonéale. (*Rev Afr Santé Reprod* 2003; 7[3]: 117–123)

KEY WORDS: *Intrauterine device, extrauterine location, perforations, migrations, Port Harcourt*

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Introduction

Intrauterine contraceptive device (IUCD) remains one of the most effective and widely used methods of reversible contraception. Because of improvements in contraceptive technology, reliable contraception up to ten years is possible with the popular copper T380A brand. Insertions can be performed electively (once pregnancy has been excluded) at any time of the menstrual cycle, and in the puerperium without analgesia. Recently, postpartum insertion immediately after vaginal deliveries and caesarean section, and emergency post-coital insertions have also been established. The common complications of IUCD are increased uterine bleeding (menstrual and inter-menstrual), abdominal and pelvic pains, spontaneous expulsions, uterine and pelvic infections, accidental intrauterine pregnancy and ectopic pregnancy. Uterine imbedding and perforation by the device occur less commonly, usually at the time of insertion.

IUCD perforations may be symptomatic or asymptomatic. The common denominator in presentation is an inability to visualise the IUCD string in the vagina or feel its tip in the cervical canal. Standard clinical protocols are available for localisation and recovery of the extrauterine translocated device, and current recommendations require that all extrauterine devices should be removed from the peritoneal cavity to prevent intestinal obstruction, viscus perforation and peritonitis.^{1,2} Management of cases of translocated IUCD that have completely perforated the uterus generally does not pose many clinical problems in tertiary units with facilities for localising and removal of the extrauterine device at their disposal. Enigmatic, however, is the fact that in many cases of IUCD translocation to an extrauterine site found in literature, the device has been in use for appreciable periods of time and the process is asymptomatic — abdominal/pelvic pains and vaginal bleeding are absent. Furthermore, the location of extrauterine IUCD at recovery ranges from direct relations of the uterus like the urinary bladder and pouch of Douglas to distant structures like the caecum, appendix, ascending colon, etcetera.^{3,13} Such distant extrauterine locations and the occurrence of these translocatory phenomena sometimes after the first post-insertion year when most IUCD

complications tend to occur,¹³ would suggest that apart from iatrogenic perforations, there might be a migratory propensity of the device, which has been difficult to explain.

This presentation of five cases of extrauterine IUCD is the first from Port Harcourt, the metropolitan centre of the Niger Delta Region of Nigeria. Contraceptive services are offered by two specialist hospitals as well as smaller government and private health facilities. The catchment population is about five million. Contraceptive services including IUCD services are undertaken at minimum charges with family planning nurse practitioners featuring about 90%. An average of 500 IUCD (T copper 380A) is inserted yearly in our hospital, the University of Port Harcourt Teaching Hospital (UCTH), the larger of the two specialist hospitals. IUCD is also inserted after intrauterine adhesiolysis by physicians to treat Asherman's syndrome. In this report the clinical features and management of our cases are compared with previous reports worldwide. Aspects of IUCD perforation are discussed. Speculation on the enigmatic issue of possible mechanisms of IUCD translocations is also offered.

Case Reports

Case 1

A 29-year-old para 3 + 0 presented as an emergency with fever, vomiting and right iliac fossa pains of two days duration. She had had a copper T200 inserted two years previously — a year after her last confinement — without complications. At her visit to the family planning clinic five months prior to presentation, the IUCD string was visible and her last menstrual period two weeks prior to presentation was normal. Findings on examination were a temperature of 37.8°C, right iliac fossa tenderness and guarding, and an absence of the IUCD string on vaginal examination. A clinical diagnosis of acute appendicitis was made and at laparotomy an enlarged inflamed appendix was found with the IUCD buried in a 4cm diameter granuloma attached to the appendiceal tip. The appendix was resected in mass with the granuloma. The patient recovered uneventfully. Staining of the cheesy material surrounding the IUCD in the granuloma was negative for acid-fast bacilli.

Table 1 Clinical Features and Management of Study Subjects

Case number	Age (years)	Marital status	Parity	Type of IUCD	Reasons for insertion	Interval between insertion & presentation	Symptoms	Findings on examination	Diagnosis	Management	Definitive findings	Postoperative course/follow-up
1	29	Marned	3 + 0	Copper T 200	Interval contraception	2 years	Fever, vomiting and night iliac fossa pains for 2 days	Temperature 37.8°C. Right iliac fossa tenderness. Absent IUCD string	1. Acute appendicitis 2. Translocated IUCD	Emergency exploratory laparotomy plus appendectomy and removal of IUCD	Inflamed appendix plus IUCD banded in granuloma at appendiceal tip	Uneventful
2	31	Marned	0 + 0	Lippe's loop C	Adhesiolysis for Asherman's syndrome	3 weeks	Inability to visualise or feel IUCD string	Normal abdominal and vaginal findings apart from absent IUCD string	Translocated IUCD with urinary bladder perforation	Exploration of uterus Abdomino-pelvic ultrasound, laparoscopy and open cystostomy	Intravascular IUCD Uterine serosa normal	Uneventful
3	34	Marned	4 + 0	Copper T380A	Interval contraception	1 day	Inability to feel IUCD string	Normal abdominal and vaginal findings apart from absent IUCD string	Translocation IUCD with asymptomatic uterine perforation	Exploration of uterus without and under general anaesthesia. Pelvic ultrasound, laparoscopic removal of IUCD	IUCD in pouch of Douglas in pool of serous fluid Posterior uterine serosa inflamed	Uneventful
4	31	Single	0 + 0	Copper T380A	Emergency post-coital contraception	1 day	Lower abdominal pain	Lower abdominal tenderness and absent IUCD string. Normal size anteverted	1. Translocated IUCD 2. Suspected uterine perforation	Abdomino pelvic ultrasound scan on 2 occasions one year apart	Extrauterine IUCD in left iliac fossa. Later had an intrauterine pregnancy. Defaulted	Lost to follow-up
5	23	Marned	1 + 0	Copper T380A	Postpartum contraception 3 months after caesarean section	2 days	Lower abdominal pain and inability to visualise or feel IUCD string	Increasing lower abdominal tenderness maximal in left iliac fossa. Absent IUCD string Normal size anteverted mobile uterus. Mild left fornax tenderness	1. Translocated IUCD 2. Suspected uterine perforation with peritonitis	Emergency Exploratory removal of IUCD	IUCD adherent to posterior aspect of left side of body of uterus. serosa inflamed	Uneventful

Case 2

A 31-year-old para 0 + 1 lady with secondary infertility gave a history of reduced menstrual flow following an induced abortion seven years previously. Ultrasound findings suggested intrauterine adhesions. Her family physician had inserted a Lippe's loop C into her uterine cavity to achieve adhesiolysis. She was referred to us when the IUCD string could not be visualised or palpated three weeks after insertion. Exploration of the uterine cavity initially with an IUCD hook and alligator forceps (without anaesthesia), and later a polyp forceps under general anaesthesia, was negative. Pelvic ultrasound scan showed echoes from the IUCD in the urinary bladder. Laparoscopy showed a bulge in the bladder wall. Cystoscopy was not done. An open cystostomy was done to retrieve an intravesical IUCD. There were no visible scars on the uterine serosa. She recovered uneventfully.

Case 3

A 34-year-old para 4 + 0 lady with normal size anteverted mobile uterus had an uncomplicated copper T380A insertion for interval contraception. The following morning the client complained of an inability to feel the IUCD string. The string was not visible and exploration of the uterus in the family planning clinic with an IUCD hook and alligator forceps without anaesthesia was negative. Pelvic ultrasound showed the IUCD in the pouch of Douglas in a pool of serous peritoneal fluid. The IUCD was recovered by laparoscopy. The lower aspect of the posterior uterine serosa was inflamed. There were no postoperative complications.

Case 4

A 31-year-old single para 0 + 0 woman requested emergency IUCD insertion after unprotected sexual intercourse at mid-cycle. An uncomplicated copper T380A insertion into her normal size anteverted mobile uterus was carried out. The next day she presented with lower abdominal pains, suprapubic tenderness; and absent IUCD string on vaginal examination. Ultrasound scan demonstrated that the device was extrauterine. She defaulted from scheduled laparoscopy with possible abdominal

exploration and presented one year later with a male consort claiming that she was pregnant and wanted the device removed. Ultrasound scan demonstrated an eight-week normal intrauterine gestation and the IUCD free in the left iliac fossa far off from the uterus. She subsequently left Port Harcourt apparently for the United States and has since been lost to follow-up.

Case 5

A 23-year-old primipara had an uncomplicated lower segment caesarean section in April 2002. On resumption of her menstrual periods three months later, even though she was breastfeeding, a copper T380A was inserted by a midwife in a health centre. She complained of lower abdominal pains during the insertion, which responded to oral analgesics. Two days later the pain recurred and the string of the device could not be visualised at the health centre. Abdominal and pelvic ultrasound requested by the midwife showed an extrauterine device. On presentation at our clinic her vital signs were normal but there was lower abdominal tenderness maximal at the left iliac fossa. On pelvic examination the findings were absent IUCD string, anteverted mobile six-week size uterus, and mild left fornix tenderness without an adnexal mass. An emergency exploratory laparotomy carried out on account of increasing left sided abdominal pain and tenderness showed the IUCD adherent to the posterior aspect of the left side of the body of the uterus with some inflammatory reaction on the uterine serosa. The uterovesical peritoneum was adherent to the uterine isthmus but was not inflamed. After removal of the device the patient's postoperative course was uncomplicated.

Discussion

Recent reports on IUCD perforation rates are generally scarce. Mishell² reported an incidence of 1:1000 to 1,250 for fundal perforations and 1:600 to 1:1000 for cervical perforations. There was no clinically recognised IUCD perforation complicating the first 488 consecutive insertions of the Lippe's loop and copper T200 at the family planning unit of our hospital.¹⁴ The cases reported here presented

between one day and two years after insertion of the device. The spectrum of our five clinical cases does not show apparent correlation between any patients' time of IUCD insertion in relation to delivery or type of device and the risk of perforation (Table 1). Also, there was a wide variation in the time of extrauterine presentation in relation to the time of insertion, the extrauterine location and the appearance of the uterine serosa. This is in conformity with the experience of other workers in previous reports.³⁻¹³

The mechanism and aetiology of IUCD perforation and translocation to sites far removed from the uterine cavity remain enigmatic. Goldstruck¹⁵ measured IUCD insertion forces and concluded that primary uterine perforation at the time of insertion was unlikely. He later found an

average decrease in insertion perforation force and decreased IUCD-related insertion pain in lactating puerperal women.¹⁶ This is supported by Hartwell's finding of a higher risk of uterine perforation in the same group of women.¹⁷ However, other workers¹⁸ in a prospective follow-up of 128 lactating puerperal women did not find any perforation. In the last three of our five cases the patients presented within two days of the insertion and in two of them abdominal/pelvic pains occurred soon after insertion, constituting an acute presentation. This suggests a primary perforation at the time of insertion. Those presenting some years after insertion either on routine checks when the tail of the device is found missing or from complications suggest spontaneous uterine perforation, as the foreign body erodes through the uterine wall.

Table 2 Some Extrauterine Locations of the Translocated IUCD Reported in Literature

S/No.	Author and year of publication	Extrauterine location	Salient clinical features/definitive findings
1.	Dietrick et al (1992)	Intravesical	Eroded into urinary bladder three years after insertion. Remained asymptomatic for additional thirteen years before presentation with urinary symptoms
2.	Ramsewak et al (1991)	Rectal perforation with strings at anus	Presented with IUCD string at anus
3.	Azzenna et al (1994)	Peritubal location (Fallopian tube perforation)	Presented 12 years after insertion
4.	Sogaard (1993)	Rectal perforation	Perforation unrecognised for 13 years
5.	Capsi et al (1996)	Urinary bladder (string of IUCD protruding through cervix)	Incidental ultrasonography finding during examination for non-specific mild abdominal pains
6.	Ibghi et al (1995)	Adhered to iliac vein	Presented with symptoms due to iliac venous compression
7.	Szabo et al (1997)	Complete urinary bladder perforation	Presented with uterovesical fistula 4 years after insertion
8.	Ndoye et al (2000)	Complete urinary bladder perforation	Recurrent urinary tract infection and general malaise 4 years after insertion
9.	Grimaldo et al (1993)	Sigmoid colon perforation	Peritonitis
10.	Sarkar (2000)	Adhesion to caecum	Acute abdominal pain

More enigmatic than the aetiology of perforation is the finding of the IUCD at distant extrauterine sites (Table 2). The urinary bladder features prominently in several reports. Dietrick et al¹⁹ in a review of literature reported that 18 cases of bladder IUCD had been reported in literature by 1992. Since the urinary bladder is close to the uterine cavity, translocation of a device would be expected to that organ by whatever mechanism, perforation or migration. In addition to a primary (iatrogenic) perforation at the time of IUCD insertion, complete extrusion of the IUCD through the myometrium may be aided by spontaneous uterine contractions and hydrostatic negative pressure differences between the low intraperitoneal pressure and the relatively higher intrauterine pressure.²⁰ The migration and movement of the device in the peritoneal cavity may also be aided by the contractions of the other abdominal viscera, i.e., urinary bladder and small and large intestines. The myometrium has long been established as capable of spontaneous contractions in the non-pregnant and puerperal states.²¹ The bladder detrusor muscle contracts during micturition, and small and large bowel movement occur in response to peristaltic and other stimuli. Another possible mechanism for migration of the extrauterine IUCD is movement of the peritoneal fluid.²²

Careful pre-insertion assessment and meticulous insertion technique have been shown to reduce the risk of perforation. Insertion during the puerperium, undiagnosed sub-mucous fibroids, cervical canal stenosis, previous uterine scars and intrauterine adhesions may increase the risk of perforation during insertion.²³ Our third patient had intrauterine adhesions and indeed the IUCD insertion was carried out in an attempt to treat her Asherman's syndrome.

We suggest that experimental observations on IUCD inserted in sub-human primates may be necessary to shed more light on the unresolved issues of the extrauterine translocated contraceptive device.

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