CASE REPORT

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

N Eke and AOU Okpar"t

ABSTRACT

Translocation of an intrauterine contraceptive device to the extraterine site is an uncommon complication. In cases reported in literature, the timing of intrauterine presentation and the detection 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 extraterine device inserted in centres outside the University of Port Harcourt Teaching Hospital. The condition for insertion of the extraterine contraceptive device in the patients (mean age 25.3 years) was contraception in four patients and adhesiolysis for tuberous sclerosis in one. The most common presenting symptom was inability to feel the device's string (in three patients). Three of the patients presented within one month of the insertion. Three of the five translocated intrauterine devices were removed by laparoscopy and the fourth by laparotomy. The fifth patient, pregnant, delivered with the device still retained. We are of the opinion that primary uterine perforation or migration occurs occasionally. Other possible translocation mechanisms include spontaneous uterine contractions, uterine bladder connections, and perforation and movement of menstrual fluid. (AJ Reprod Health 2003; 7(3): 135-123)

RESUME

Dispositif contraceptif de l’extra-utérin déplacé: Une présentation de cinq cas et une réévaluation 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 deux échelons de la translocation rendent souci la question du sens si la perforation utérine iatrogène ou la migration du dispositif qui en était responsable. Nos observations se disculent uniquement à la recherche de dispositifs extra-sus n’avaient été introduits dans des centres hors du Centre Hospitalier Universitaire de Port Harcourt. L’indication pour l’insertion du dispositif intra-utérin dans les patients (âge moyen 25,3 ans) était la contraception chez quatre patientes et l’adhesiolypse pour le syndrome de Asherman chez la cinquième patiente. Le syndrome de l’adhesiolypse était l’incapacité de sentir la douille du dispositif (chez trois patientes). Quatre patientes sont venues nous consulter moins d’un mois après l’insertion. Trois parmi les cinq dispositifs intra-utérins déplacés ont été découverts à l’aide de la laparoscopie et le cinquième à l’aide de la péritonéoscopy. La compresse utérine est devenue invisible malgré le fait que le dispositif était resté en place. Nous pensons que la perforation utérine iatrogène primitive se produit assez de manière sporadique. L’autre mécanisme de translocation serait l’enveloppe comprenant des contractions utérines spontanées, des contractions utérines, la perforation utérine et le mouvement de la liquide péritonéal. (Revue Africaine de la reproduction 2003; 7(3): 135-123)

Key Words: Extraterine device, extraterine location, perforations, migration, Port Harcourt

Department of Surgery, and Obstetrics and Gynaecology, College of Health Sciences, University of Port Harcourt, Port Harcourt, Nigeria.

Correspondence: Dr. Asatu A.U. Okpar"t, P.O. Box 1571, Port Harcourt, Nigeria.
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 postpartum without analgesia. Recently, postpartum insertion immediately after vaginal deliveries and cesarean section, and emergency postpartum insertions have also been established. The common complications of IUCD are increased uterine bleeding (menstrual and inter-menstrual), abdominal and pelvic pain, spontaneous abortions, uterine and pelvic infections, accidental intrauterine pregnancy and ectopic pregnancy. Uterine embedding and perforation by the device occurs less commonly, usually at the time of insertion.

IUCD perforations may be symptomatic or asymptomatic. The common denominator in presentation is an inability to visualize the IUCD string in the vagina or feel its tip in the cervical canal. Standard clinical protocols are available for localization and recovery of the extraterine transcervical device, and current recommendations require that all extraterine devices be removed from the peritoneal cavity to prevent intestinal obstruction, visceral perforation and peritonitis. Management of cases of transcervical IUCD that have completely perforated the uterus generally does not pose many clinical problems in tertiary units with facilities for localizing and removal of the extraterine device at their disposal. Exaggeration, however, is the fact that in many cases of IUCD translocation to an extraterine 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 extraterine IUCD at recovery ranges from direct relations of the uterus like the urinary bladder and pouch of Douglas to distant structures like the cecum, appendix, ascending colon, mesentry. Such distant extraterine locations and the occurrence of these translocatory phenomena sometimes after the first post-insertion year when most IUCD complications tend to occur, 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 extraterine 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 a few 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 training about 90%. An average of 500 IUCD (Copper 380A) is inserted yearly in our hospital, the University of Port Harcourt Teaching Hospital (UUCH), 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 + 2 presented as an emergency with fever, vomiting and right iliac fossa pains of two days duration. She had had a copper T380 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 four 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 among 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 appendicular tip. The appendix was resected in mass with the granuloma. The patient recovered uneventfully. Staining of the excised material surrounding the IUCD in the granuloma was negative for acid-fast bacilli.
Table 1: Clinical Features and Management of Study Subjects

<table>
<thead>
<tr>
<th>Case</th>
<th>Age (y)</th>
<th>History of IUD Use</th>
<th>Type of IUD Ejected</th>
<th>Cause of Ejection</th>
<th>Duration of IUD Use</th>
<th>Management</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29</td>
<td>None</td>
<td>Copper T200</td>
<td>Granuloma</td>
<td>2 years</td>
<td>Surgical removal</td>
<td>Resolution</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>None</td>
<td>Copper T200</td>
<td>Granuloma</td>
<td>3 years</td>
<td>Surgical removal</td>
<td>Resolution</td>
</tr>
<tr>
<td>3</td>
<td>36</td>
<td>None</td>
<td>Copper T200</td>
<td>Granuloma</td>
<td>4 years</td>
<td>Surgical removal</td>
<td>Resolution</td>
</tr>
<tr>
<td>4</td>
<td>35</td>
<td>None</td>
<td>Copper T200</td>
<td>Granuloma</td>
<td>5 years</td>
<td>Surgical removal</td>
<td>Resolution</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
<td>None</td>
<td>Copper T200</td>
<td>Granuloma</td>
<td>6 years</td>
<td>Surgical removal</td>
<td>Resolution</td>
</tr>
</tbody>
</table>

In all cases, the IUD was removed surgically. The diagnosis of granuloma was confirmed by histopathological examination. The patients were followed up for a minimum of 6 months, and all were asymptomatic at the time of the report.


Case 2

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

Case 3

A 34-year-old para 4 + 0 lady with normal size unverted mobile uterus had an uncomplicated copper T380A insertion for interval contraception. The following morning she 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 IUCD hook and alligator forceps without anesthesia was negative. Pelvic ultrasound showed the IUCD in the pouch of Douglas in a pool of serous peritoneal fluid. The IUCD was removed by laparoscopy. The lower aspect of the posterior uterine cervix 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 unverted mobile uterus was carried out. The next day she presented with lower abdominal pain, subacute tenderness, and absent IUCD string on vaginal examination. Ultrasonographic scan demonstrated that the device was extratubal. She defaulted from hospital after undergoing laparoscopy with possible abdominal exploration and presented one year later with a male partner claiming that she was pregnant. She was pregnant and wanted the device removed. Ultrasound scan demonstrated an eight-week normal pregnancy and the IUCD free in the left iliac fossa far off from the uterus. 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 low segment cesarean section in April 2002. On presentation 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 anecarion, which responded to oral analgesics. Two days later the pains recurred and the string of the device could not be palpated at the health centre. Abdominal and pelvic ultrasound requested by the midwife showed an extratubal device. On presentation at our clinic 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, unverified mobile uterus, and mild left femoral tenderness without an intraabdominal 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 uneventful peritoneal was adherent to the uterine serosa but was not adherent. After removal of the device the patient's postoperative course was uneventful.

Discussion

Recent reports on IUCD perforation rates are generally scarce. Mosley reported an incidence of 0.10% to 1.25% for fundal perforations and 1.60 to 1.00% for cervical perforations. There was no clinically recognised IUCD perforation complicating the first 488 consecutive insertions of the Lippes loop and copper T380A at the family planning unit of our hospital. The cases reported here presented...
Extravaginal Translocated Contraceptive Device

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 the delivery or type of device and the risk of perforation (Table 3). Also, there was a wide variation in the time of extravasation presentation in relation to the time of insertion, the extravasation location and the appearance of the uterine cavity. This is in conformity with the experience of other workers in previous reports.1,2

The mechanism and aetiology of IUCD perforation and transfixed location to sites far removed from the uterine cavity remain enigmatic. Goldstruck10 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 perineal women.13 This is supported by Hartwell's finding of a higher risk of uterine perforation in the same group of women.12 However, other workers11 in a prospective follow-up of 128 lactating perineal 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 check up when the tail of the device is found missing or from complication suggest spontaneous uterine perforation, as the foreign body erodes through the uterine wall.

Table 2

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Author and year of publication</th>
<th>Extravasation location</th>
<th>Salient clinical features/definitive findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dietrich et al (1992)</td>
<td>Intravesical</td>
<td>Eroded into urinary bladder three years after insertion. Remained asymptomatic for additional thirteen years before presentation with urinary symptoms</td>
</tr>
<tr>
<td>2.</td>
<td>Ramisewski et al (1991)</td>
<td>Rectal perforation with sitting at anus</td>
<td>Presented with IUCD string at anus</td>
</tr>
<tr>
<td>3.</td>
<td>Azemna et al (1994)</td>
<td>Peritoneal location (Fallopian tube perforation)</td>
<td>Presented 12 years after insertion</td>
</tr>
</tbody>
</table>

(1) Unpublished data
(2) April 2002. On fundus three months after insertion, a copper thread in a health centre.
(3) Painful during intercourse.
(4) Performed anaesthesiologist and the story of the event is uncertain.
(5) After removal of the device the patient was normal.
(6) Abnormalities were noted on routine examination of the uterine cavity during the staging at term.
(7) The left uterine cornual tenderness was also noted.
(8) The patient was noted to have a left uterine tenderness.
(9) Recent exploratory salpingotomy showed right aspect of the left cornual with some abnormality.
(10) The uterine cavity was normal.

Information was not available regarding patients and 1,000 of them. There was no prominent complicating factors of the event.
More intriguing than the aetiology of perforation is the finding that the IUCD at distant extraturinate sites (Table 2). The urinary bladder features prominently in several reports. Devkota et al.11 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, trauma or perforation of a device would be expected to that organ by whatever mechanism, perforation or migration. In addition to a primary (strenuous) perforation at the time of IUCD insertion, complete evulsion of the IUCD through the myometrium may be aided by spontaneous uterine contractions and hydrostatic negative pressure differences between the low intrauterine pressure and the relatively higher intra-abdominal pressure.19 The migration and movement of the device in the peritoneal cavity may also be aided by the contractions of the other abdominal viscer, 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.20 The bladder detrusor muscle contracts during micturition, and small and large bowel movement occur in response to parasympathetic and other stimuli. Another possible mechanism for migration of the extraturinate IUCD is movement of the peritoneal fluid.21

Careful preinsertion assessment and meticulous insertion technique have been shown to reduce the risk of perforation. Insertion during the puerperium, undiagnosed submucous fibroids, cervical canal stenosis, previous uterine scar and intraturinate adhesions may increase the risk of perforation during insertion.22 Our third patient had intraturinate 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 extraturinate translocated contraceptive device.

REFERENCES


