UTERINE PERFORATION WITH LEVONORGESTREL-RELEASING INTRAUTERINE SYSTEM: CASE REPORT

Lana Škrgatić, Dinka Pavičić Baldani, Dubravko Barišić, Ante Ćorušić, Mario Ćorić, Vesna Elvedi Gašparović

SUMMARY. Uterine perforation related to the insertion of levonorgestrel-releasing intrauterine system (LNG – IUS) is a rare but potentially serious complication. There are no specific diagnostic guidelines for diagnosis and management of uterine perforation with LNG-IUS. We present a case of 38-year-old patient admitted to the Clinic for Women’s Diseases complaining of lower abdominal pain eight days following the insertion of LNG-IUS that reported to be painless and uneventful. The pelvic examination performed on arrival confirmed non-visualization of the LNG-IUS strings. Transvaginal ultrasound that was performed failed to identify the LNG-IUS device inside the uterine cavity, whereas transabdominal ultrasound (TAUS) was suggestive of LNG-IUS located inside the abdominal cavity. Laboratory findings were unremarkable. Abdominal X-ray study was obtained, and it confirmed the diagnosis of intra-abdominal location of LNG-IUS. Laparoscopy was performed; the LNG-IUS was found and easily removed from the right part of the posterior cul-de-sac.

Introduction

Levonorgestrel-intrauterine system (LNG-IUS, Mirena® Bayer, Germany) is a popular and safe method of reversible contraception.1 Uterine perforation related to the insertion of LNG – IUS is a rare but potentially serious complication. The large ongoing international prospective EURAS-IUD study (European Active Surveillance Study for Intrauterine Devices) revealed perforation rate of 0.68/1000 IUS-LNG insertions.2 The uterine perforation with LNG-IUS may present a life threatening condition and may require surgical intervention.3 There are no specific diagnostic guidelines for diagnosis and management of uterine perforation with LNG-IUS. The purpose of this article is to present a case report of diagnosis and management of LNG-IUS uterine perforation.

Case report

The 38-year-old patient, gravida 2, para 1, with a history of regular menstrual cycles was admitted to the Clinic for Women’s Diseases complaining of lower abdominal pain. The patient had the LNG-IUS inserted eight days before the admittance. Contraception was the main indication for LNG-IUS insertion. In the past she had undergone LEETZ conisation for cervical dysplasia (2002), and a laparoscopic surgery for corpus luteum hemorrhage (2002).

The LNG-IUS was inserted on the fifth day of the menstrual cycle by a well-trained gynecologist. The procedure was reported to be painless and uneventful. Few hours following the procedure the patient experienced a general malaise, abdominal pain and nausea and started using analgesic therapy. Seven days after insertion she was examined by the gynecologist who inserted the LNG-IUS due to persistent abdominal pain. Transvaginal ultrasound was performed which failed to identify the LNG-IUS device inside the uterine cavity, whereas transabdominal ultrasound (TAUS) was suggestive of LNG-IUS located inside the abdominal cavity. Laboratory findings were unremarkable. Abdominal X-ray study was obtained, and it confirmed the intra-abdominal location of LNG-IUS. Laparoscopy was performed; the LNG-IUS was found and easily removed from the right part of the posterior cul-de-sac (Figure 2). The healed and non-bleeding perforation site was presented on the right part of the uterine fundus, and 50 ml of dark blood was aspirated from a posterior cul-de-sac (Figure 3). Additional intraoperative findings were unremarkable. The procedure was uneventful and the patient was discharged the following day.

Discussion

The LNG-IUS is one of the most effective and safest methods of contraception and has been widely used.1 This method of contraception has gained great popularity in patients with complex medical problems with the need for highly effective contraception due to its low side-effect profile.1 Uterine perforation with LNG-IUS is a rare, but potentially serious complication. Patients may present with abdominal or pelvic pain, or they may be asymptomatic.3–10 Women usually experience various amount of pelvic pain and cramping few weeks after the LNG-IUS insertion. Therefore, the pain associated with possible uterine perforation and intra-abdominal misplacement of the device may be misdiagnosed. The supposed mechanism for uterine perforation is im-
mediate traumatic perforation of the myometrium by the uterine sound, the inserter tube or the LNG-IUS itself. Another possible mechanism is the partial perforation at the time of insertion followed by uterine contractions causing complete perforation. The proposed perforation and intra-abdominal location of LNG-IUS presented in our case could be explained by all aforementioned mechanisms. The abdominal pain that started few hours following LNG-IUS insertion is suggestive of the partial perforation by the uterine sound in our patient. Uterine contractions following partial perforation possibly caused the migration of LNG-IUS through perforation site into abdominal cavity.

The experience of the doctor highly correlates with uterine perforations related to the LNG-IUS insertion.

In our case, a well-trained gynecologist performed the procedure. In a large population based study more than half of patients had given birth within six months, and almost third are breast feeding which are both proposed risk factors of uterine perforation with IUD. This was not the case with our patient. Furthermore, our patient had no history of other risk factors that contribute to IUD expulsion like uterine malformations, previous uterine surgical procedures.

It is highly recommended to perform a routine TVUS following the insertion of the LNG-IUS to prove the correct positioning of the device. Although the LNG-IUS has the typical sonographic appearance the positioning of the LNG-IUS system in cases of suspected intraabdominal misplacement is difficult. From our experience abdominal X-ray was a good tool to confirm the extrauterine position of the device which is conclusive from previous reports.

The recommended management of an intra-abdominal misplaced LNG-IUS by the manufacturers is its laparoscopic removal. Unsuccessful laparoscopic removal of the device could result in explorative laparotomy and complications. This should be considered in all patients especially in those with complex medical problems. There has been a report that elevated plasma LNG levels originating from the intraperitoneal LNG-IUS may result in suppression of ovulation, and may be regarded as contraception. In our case, laparoscopic removal of LNG-IUS device was mandatory due to persistent pelvic pain, but it seems reasonable to intervene surgically in asymptomatic patients with an intra-abdominal LNG-IUS, especially if pregnancy is desired.

This case illustrates an extremely rare event and a possible note of caution, especially in patients with persistent pain following LNG-IUS insertion. TVUS should be performed followed by X-ray exam in case of suspected intra-abdominal LNG-IUS location following perforation. The laparoscopic removal of misplaced LNG-IUS should be performed in symptomatic patients.
There is a need for a well-designed meta-analysis that will include all the relevant cases in order to form diagnostic and treatment guidelines for uterine perforation and treatment.

References

Address for correspondence: Dr. sc. Lana Škrfgati, dr. med, Medicinski fakultet Sveučilišta u Zagrebu, Klinika za ženske bolesti i porođaje, KBC Zagreb, Zavod za humanu reprodukciju i ginekološku endokrinologiju; e-mail: lana.skrfgatic@zg.t-com.hr

Paper received: 10. 03. 2014.; accepted: 05. 04. 2014.

PERFORACIJA MATERNICE SA MATERNIČNIM ULOŠKOM S LEVONORGESTRELOM: PRIKAZ SLUČAJA

Ključne riječi: intrauterini uložak s levonorgestreloem, perforacija maternice

Sastava. Perfekcija maternice s intrauterinim sustavom s levonorgestreloem (LNG-IUS) rijetka je, ali potencijalna opasna komplikacija koja može nastati prilikom insercije uložka. Ne postoje specifične dijagnostičke smjernice za dijagnostiku i liječenje perforacije sa LNG-IUS. U ovom članku prikazujemo slučaj 38 godišnje bolesnice koja je primljena u Kliniku za ženske bolesti i porođaje zbog bolesti vlasti u donjem abdomenu osam dana nakon postavljanja LNG-IUS. Tijek postavljanja intrauterinog uložka prošao je bez težaka. Ginekološkim pregledom se ne nade končić LNG-IUS. Transvaginalnim ultrazvukom se ne uspije prikazati LNG-IUS dok je transabdominalnim ultrazvukom postavljena sumnja da se LNG-IUS nalazi u trbušnoj šupljini. Laboratorijski nalazi su bili u granicama referentnih vrijednosti. Učinjen je rendgen abdomena na kojem je potvrđen smještaj uložka u trbušnoj šupljini. Laparoskopijom se prikaže i odstrani LNG-IUS iz Douglasovog prostora, a na fundusu maternice se nade mjesto perforacije koje je gotovo zacijelilo.