

Laparoscopic Management of Abdominal Pregnancy Replaced in the Vesicouterine Pouch and Sacrouterine Ligament

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ABSTRACT

Abdominal pregnancies are rare and life threatening conditions with increased maternal mortality rate. A 37-year old woman admitted with acute abdominal pain. She had a history of dilatation and curettage due to anembryonic pregnancy five days ago. A pelvic X Ray confirmed an abdominally located IUCD. Her serum β -human chorionic gonadotropin level was 5531 mIU/mL. A laparoscopy was performed and there was a round hemorrhagic mass in the vesicouterine pouch in exploration. The trophoblastic tissue was removed from in the vesicouterine pouch and left sacrouterine ligament. The histopathology report revealed chorionic villi both of the excised specimens. The abdominal cavity should be explored carefully in suspicion of abdominal pregnancy and laparoscopic management is a feasible approach for this cases.

Keywords: Ectopic pregnancy, Intrauterine devices, Laparoscopy

Gynecol Obstet Reprod Med 2017;23(3):171-173

Introduction

Abdominal pregnancies are rare and life threatening conditions, accounting for 1.3% of all ectopic pregnancies (1). The reported maternal mortality rate is 5.1 per 1000 pregnancies (2). The primary abdominal pregnancy is defined as, (i) presence of any pregnancy that is less than 12-weeks histological gestational age which trophoblastic attachments are only related to the peritoneal surface; (ii) normal appearing tubes and ovaries; and (iii) the absence of utero-peritoneal fistula (3).

There are several theories for explanation of the mechanism of abdominal pregnancy such as; a result of the primary peritoneal implantation, or secondary to a tubal or ovarian pregnancy that subsequently implants in the abdominal cavity (2,4). The reported risk factors for ectopic pregnancies are previous tubal surgeries, history of pelvic inflammatory disease, presence of intrauterine contraceptive device (IUCD) or smoking habit (5).

There has been a varying number of cases reported abdominal pregnancies in different locations such as; omentum, pouch of Douglas, spleen, bowel, liver, intra-abdominal surface of the diaphragm. However, presence of pregnancy in vesicouterine pouch is a rare with a reported four cases in the literature (4).

In this case we presented a case of laparoscopically managed abdominal pregnancy located in the vesicouterine pouch and sacrouterine ligament with a migrated IUCD into the pelvic cavity.

Case Report


A 37-year old gravida 3, para 3 woman with a history of three cesarean sections and using an intrauterine contraceptive device (IUCD) for fifteen months admitted to our emergency department with acute abdominal pain. The patient had no history of pelvic inflammatory disease or tubal surgery. She had regular menses, but her last menstrual period was 40 days before. She had a history of dilatation and curettage due to anembryonic pregnancy with no reliable ultrasound confirmation five days ago in a private hospital. In her physical examination, the patient suffered from constant lower abdominal pain with rebound and tenderness. She was pale and her heart rate was 95 bpm. The speculum examination revealed a minimal bleeding and no string of the IUCD. The bimanual pelvic examination revealed a retroverted uterus and tenderness with adnexal movement. The transvaginal ultrasound examination showed an empty uterus with 4 mm endometrial thickness and both of the ovaries and tubes were appeared normal. There was a minimal free fluid in pouch of Douglas. The IUCD was not observed in ultrasound examination, however a pelvic X Ray confirmed an abdominally located IUCD. Her laboratory findings were as follows: white blood cells (WBC)

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Submitted for Publication: 28. 11. 2016

Accepted for Publication: 03. 01. 2017

Access this article online	
Quick Response Code:	Website: www.gorm.com.tr
	DOI:10.201613/GORM.2016.645

How to cite this article: Kaya C. and Ekin M. Laparoscopic Management of Abdominal Pregnancy Replaced in the Vesicouterine Pouch and Sacrouterine Ligament. *Gynecol Obstet Reprod Med* 2017;23(3):171-173

11,4x10³/μL, hemoglobin (Hb) 11 g/dL, hematocrit (Htc) %35, serum β-human chorionic gonadotropin (β-hCG) level was 5531 mIU/mL. A diagnostic laparoscopy was planned for suspicion of ectopic pregnancy and abdominally located IUCD. Laparoscopic surgery was conducted under general anesthesia after informed consent was obtained. In exploration, there were about 100 mL of blood in the pouch of Douglas. The uterus was retroverted. The string of the IUCD was observed above the right sacrouterine ligament. On the right side of the vesicouterine pouch, there was a round hemorrhagic mass, about 4 cm in diameter, with unruptured capsule. The IUCD was removed by using a grasping forceps out of the abdominal cavity (Figure 1).



Figure 1: The picture shows the intrauterine contraceptive device that was observed above the right sacrouterine ligament

There was no bleeding or hematoma after removal of the IUCD. The capsule of vesicouterine pouch was dissected and the trophoblastic tissue was observed and removed by blunt and sharp dissections (Figure 2).



Figure 2: On the right side of the vesicouterine pouch, a round hemorrhagic mass with unruptured capsule marked with black circle

There was no rupture in the uterus or any defect was seen in the bladder. There was a trophoblastic tissue on the left sacrouterine ligament, also (Figure 3). The tissue was removed and minimal bleeding controlled by using bipolar electrocautery. All of the excised materials were sent for histopathological analysis. Her postoperative course was uneventful. Serum β-HCG levels were decreased to 25 mIU/mL after seven days of the surgery. The final histopathology report revealed chorionic villi both of the excised specimens from the vesicouterine pouch and left sacrouterine ligament.



Figure 3: The black arrow shows the trophoblastic tissue on the left sacrouterine ligament

Discussion

To our best knowledge the coexistence of trophoblastic tissue in the vesicouterine pouch and sacrouterine ligaments are not reported at modern English literature yet. For the abdominal pregnancy, the main concerns are based on the difficulties in the diagnosis of the disease. The sonographic evaluation with clinical findings has a diagnostic rate of approximately 50%. It is reported that diffusion-weighted MRI may be an alternative in detection of abdominal pregnancy (6). Although the definition of the abdominal pregnancy still challenging and differ as primary or secondary considering the origin of the disease, the management can be surgical, medical or combination of surgical and medical approaches (2,4,7). As surgical management laparotomy may be an option for patients with unstable vital signs or pregnancies with advanced gestational age. Laparoscopy is a good option with lesser postoperative hospital stay and better recovery period (2,4). The patients with stable vital signs may also be candidates for primary medical treatment with systemic methotrexate or intracardiac potassium chloride injection (8). Further, some reports recommended to treat abdominal pregnancy with subsequent medical treatment after laparoscopic confirmation (4).

Intrauterine contraceptive device is a long acting, effective, and reversible method of contraception and being used

by many women especially in low-income countries (9). However, there is some concerns such as uterine perforation that may occur during insertion and with a varying incidence from 0.1 to 3.0 per 1000 interventions. Uterine perforation especially seen when performed in postpartum period because of the softening of the uterus (9). Perforations may also occur on insertion after an induced abortion. The majority of the symptoms are lower abdominal pain and vaginal bleeding, but many patients are remaining asymptomatic (9,10). The most common locations after perforation IUCDs are pouch of Douglas, omentum, colon, bladder, parametrium, uterine wall, ovary, and retroperitoneum (9). The migration of IUCD may cause serious complications (e.g. bladder and bowel damage) in about 15% of the cases (9). The definition of migrated IUCD to extrapelvic locations cannot be detected by transvaginal ultrasonography alone, and a bidirectional X Ray may be helpful for confirmation of the location. The removal of IUCD is possible with varying surgical methods, such as laparoscopy, mini laparotomy, and laparotomy (9).

In our case, we decided to perform an emergent laparoscopy due to patient's vital findings with suspicion of ectopic pregnancy and uterine perforation by IUCD. We defined our case as primary abdominal pregnancy because there was no observed uteroperitoneal fistula. The IUCD was placed above the right sacrouterine ligament and the arms of the IUCD were still in the myometrium. As a hypothesis, firstly, abdominal pregnancy might be occurred in the pouch of Douglas and then implanted into the vesicouterine pouch. Further, we may also speculate that; abdominal pregnancy may have occurred after not inserting IUD into the uterine cavity, but to inside of sacrouterine ligament. Perhaps an intrauterine pregnancy migrated to abdomen via passage of IUD. Later, after surgical removal, the patient's postoperative serum β -hCG levels decreased dramatically and the abdominal pregnancy was histopathologically confirmed.

In conclusion, abdominal pregnancy should be suspected if elevated β -hCG levels are together with absence of intrauterine or tubal pregnancy. The abdominal cavity should be explored carefully when identifying ectopic foci considering presence of more than one foci could be possible. Laparoscopic management is feasible for this kind of cases with intra-post-operative benefits.

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