

Primary Peritoneal Pregnancy Implanted on the Uterosacral Ligament : A Case Report

Peritoneal pregnancies are classified as primary and secondary. Primary implantation on the peritoneum is extremely rare in extrauterine pregnancy and is a potentially life-threatening variation of ectopic pregnancy within the peritoneal cavity, representing a grave risk to maternal health. Secondary abdominal pregnancies are by far the most common and result from tubal abortion or rupture, or less often, after uterine rupture with subsequent implantation within abdomen. Early diagnosis and appropriate surgical management, regardless of stage of gestation, appear to be important in achieving good results. We report a case of primary peritoneal pregnancy in a 28-year-old woman, who had severe lower abdominal pain one day before laparotomy for a preoperative diagnosis of ectopic pregnancy. The conceptus was implanted on the left uterosacral ligament. A fresh embryo of approximately 8 weeks' gestation was found in the conceptus.

Key Words: Pregnancy, Abdominal

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INTRODUCTION

Primary peritoneal pregnancy is defined as an ectopic pregnancy that implants primarily on a peritoneal surface. Because peritoneal pregnancy is so rare, it may not be included in the differential diagnosis of pregnant women with abdominal pain. The estimated incidence of peritoneal (abdominal) pregnancy is 10.9 per 100,000 live births and 9.2 per 1,000 ectopic pregnancies. The prognosis is poor, with an estimated maternal mortality rate of 5.1 per 1,000 cases, 7.7 times higher than other forms of ectopic pregnancy (1). Peritoneal pregnancy is a potentially life-threatening variation of ectopic gestation that resides within the peritoneal cavity, exclusive of intratubal, ovarian and intraligamentous sites of implantation (2). Early diagnosis and appropriate surgical management, regardless of stage of gestation, appear to be important in achieving good results.

We recently experienced a case of primary peritoneal pregnancy on the left uterosacral ligament and reported it with a brief review of the literature.

CASE REPORT

The patient, a 28-year-old gravida 2 para 0 Korean housewife, was admitted to the emergency room on May

7, 1999 with a history of severe lower abdominal pain of 1 day duration. The pain was initially in the epigastric and umbilical region, but later spread to the lower abdomen. Her menstrual periods were regular with a cycle length of 26-28 days and the last one had taken place on March 5, 1999. The patient has no history of pelvic inflammatory disease, use of an intrauterine device or gynecologic surgery.

On examination, the patient was pale but not in shock. Her pulse was 80 per minute and blood pressure 80/40 mmHg. Abdominal examination revealed generalized tenderness and mild peritoneal irritation. Pelvic examination revealed an unclear contour of the uterus and adnexae because of a sensitive lower abdomen. Transvaginal ultrasound examination showed intraperitoneal pooling of fluid and a normal uterus with no intrauterine gestational sac. A cystic mass shadow was seen in the posterior wall of uterus (Fig. 1). The urine pregnancy test was positive. Her hemoglobin value was 11.7 g/dL and hematocrit was 34.9%. A diagnosis of ruptured ectopic pregnancy with hemoperitoneum was made, intravenous therapy was started, and preparations were made for immediate operation.

During emergency laparotomy, 1,000 mL of dark bloody fluid and clotted blood were found in the peritoneal cavity. The uterus was slightly enlarged and both tubes and ovaries were normal in size and shape



Fig. 1. The cystic mass (MASS) is seen in the posterior wall of uterus. There is no gestational sac in uterus (UT).

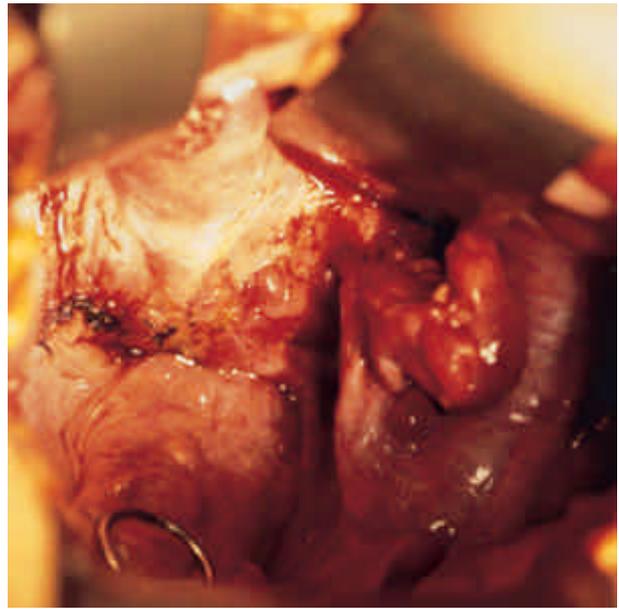


Fig. 3. At laparotomy, the mass removed site appears on the left uterosacral ligament.



Fig. 2. At laparotomy, both tubes, ovaries and uterus appear grossly normal.

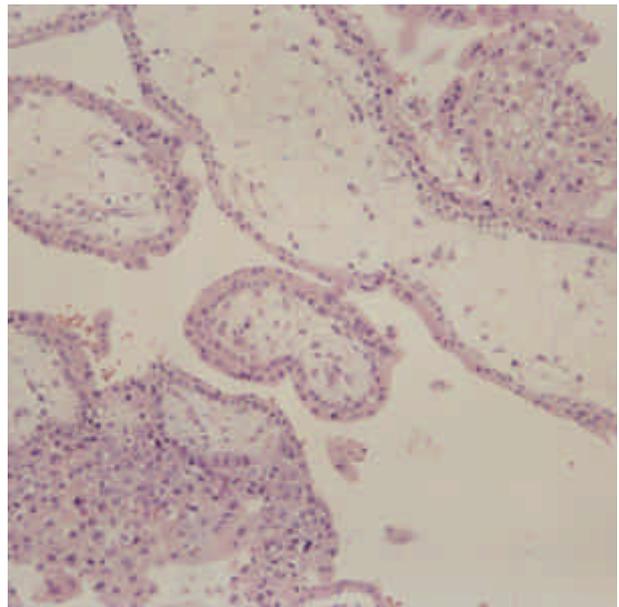


Fig. 4. Histologic section shows chorionic villi and trophoblast (H&E, $\times 100$).

(Fig. 2). The source of bleeding was a hemorrhagic mass, measuring 4×3 cm, situated on the left uterosacral ligament. The mass was completely removed (Fig. 3). There was no evidence of uteroplacental fistula or previous pelvic infection.

When the excised mass was cut, fresh chorionic villi was seen and later proved histologically chorionic villi and trophoblast (Fig. 4). The patient was transfused with three units of whole blood during operation. Over the first 24 postoperative hours, her hemoglobin value was

11.2 g/dL and hematocrit was 32.3%. The patient's postoperative recovery was uneventful. Follow-up examination after 4 weeks showed a well-healed abdominal wound and pelvic examination was normal.

DISCUSSION

Studdiford, reporting a case of primary peritoneal pregnancy, suggested the following criteria as proof of

primary nidation at this site: 1) both tubes and ovaries are normal with no evidence of recent or remote injury, 2) the absence of any evidence of a uteroperitoneal fistula, and 3) the presence of a pregnancy related exclusively to the peritoneal surface and young enough to eliminate the possibility of secondary implantation following a primary nidation in the tube (3).

It may be impossible to differentiate between primary and secondary peritoneal pregnancies especially in advanced cases at or near term, since the original site of nidation cannot be determined. Hence, it has been suggested that the diagnosis of true primary peritoneal pregnancy may be made only when the gestational age is less than 10 weeks (4). Studdiford's criteria was modified by Friedrich and Rankin (1968) as follows: 1) the presence of a pregnancy of less than 12 weeks' histologic gestational age whose trophoblastic attachments are related solely to a peritoneal surface, 2) grossly normal tubes and ovaries, and 3) the absence of uteroperitoneal fistula (5). Our case report fulfills both the original and the modified criteria.

Because this classification scheme has little clinical relevance regarding diagnostic and therapeutic considerations, categorization of peritoneal pregnancy recently has been based on gestational age or by location of implantation. Patient whose peritoneal pregnancy is ≤ 20 weeks in gestational age are considered to have an early peritoneal pregnancy. Detection of a peritoneal pregnancy that has persisted into the second half of gestation (> 20 weeks) constitutes an advanced case (6). In previously reported cases, primary peritoneal implantation was mainly on the uterine surface (7-9), broad ligament or in the cul-de-sac of Douglas (10). Other pelvic and extrapelvic structures may also be the site of primary implantation, for example, sigmoid mesentery (4), infundibulopelvic ligament (11), fundus of bladder (12) and omentum (13).

Although primary peritoneal pregnancy has been described in relation to foci of endometriosis (14), the use of intrauterine devices (4) and the oral pill (7), the etiology of the condition remains speculative.

The presentation of patients with a peritoneal pregnancy varies and depends on the gestational age. Unexplained abdominal pain is the most common symptom of peritoneal pregnancy (6). In the first and early second trimester, the symptoms may be the same as with tubal abortion or rupture. In advanced pregnancy, variable presenting complaints can include a history of abdominal pain, general malaise, persistent nausea and vomiting, vaginal bleeding, painful fetal movement, decreased fetal movement and movement of the fetus high in the abdomen. Regardless of the stage of gestation, early diagnosis of peritoneal pregnancy is of the greatest importance to

avert massive hemorrhaging (6).

The diagnosis may be suspected when there are no uterine contractions after oxytocin infusion (15). Other diagnoses can be made by abdominal x-ray, transvaginal ultrasound, computed tomography scanning, magnetic resonance imaging or by laparoscopy (15-17). During the last decade, diagnostic ultrasound has made tremendous advances as an aid to pregnancy assessment. Despite overall improvements in ultrasound and sonographer expertise, the accuracy of ultrasound diagnosis for peritoneal pregnancy is imperfect and can even be misleading on occasions (2).

Because of the high maternal and fetal morbidities and mortalities, the pregnancy should be terminated as soon as diagnosed (16). Management of the placenta itself remains the most controversial issue. At surgery, the placenta can be removed if its vascular supply can be identified and ligated, but hemorrhaging can occur, requiring abdominal packing that is left in the placenta and removed after 24-48 hr. Selective angiographic arterial embolization of the placental vascular bed to control hemorrhaging has been described (18). Methotrexate treatment appears to be contraindicated, because a high rate of complications has been reported, including sepsis and death. It is believed to be a result of rapid tissue necrosis, which subsequently provides a medium for colonic bacteria (2, 19).

Prognosis for future fertility depends primarily on involvement of the adnexae in the placental implantation site. If the Fallopian tubes and ovaries are not directly involved in the pregnancy, not removed during the operative procedure, and are not involved in postoperative adhesion formation, fertility prognosis does not appear to be adversely affected (6).

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