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Case report

Mesenteric ectopic pregnancy with tubo-ovarian abscess

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ABSTRACT

An ectopic pregnancy is the implantation of a fertilized ovum in a location other than the main cavity of the uterus. Ectopic pregnancies are reported in approximately 1%-2% of pregnancies, and while 95% of ectopic pregnancies are in fallopian tubes, only 3% are in ovarian, cervical, or abdominal sites. We present a case of a 38-year-old female with acute onset of severe lower abdominal pain, sepsis, chills, and diarrhea who was evaluated with a CT of the abdomen and pelvis with IV contrast only. The imaging revealed a likely second trimester age fetal skeleton with a partially collapsed calvarium within the peritoneal cavity and an abnormal complex cystic lesion in the right adnexal area. In this case, the patient successfully underwent exploratory laparotomy with removal of both the abdominal ectopic pregnancy and the tubo-ovarian mass.

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Introduction

An ectopic pregnancy is the implantation of a fertilized ovum in a location other than the main cavity of the uterus. Ectopic pregnancies are reported in approximately 1%-2% of pregnancies, and while 95% of ectopic pregnancies are in fallopian tubes, only 3% are in ovarian, cervical, or abdominal sites [2]. While the case fatality rate has decreased due to the impact of earlier diagnosis and treatment, ruptured ectopic pregnancies are still the leading cause of hemorrhagic deaths related to pregnancy [3]. The diagnosis of a ruptured ectopic pregnancy

should be suspected in patients of reproductive age with a clinical presentation of acute abdominal pain or vaginal bleeding presenting with hemodynamic compromise. In such individuals, the diagnosis of an ectopic pregnancy can be investigated further using ultrasonography, computed tomography, or magnetic resonance imaging.

We present a rare case of a patient who presented with an acute onset of hemodynamic compromise, abdominal pain, and vaginal bleeding. The diagnosis of a mesenteric ectopic pregnancy with tubo-ovarian abscess was suspected with the use of imaging and confirmed by immediate exploratory laparotomy.

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Case summary

A 38-year-old African American G1P0 female with an unknown last menstrual period presented to the emergency department for abdominal pain, fever, chills, and diarrhea. She has been experiencing irregular menstrual bleeding for the past nine months and has consistently been bleeding every day with varied severity. For review of systems, patient endorsed fevers, chills, fatigue, and weight change. Her past medical history is significant for gonorrhea and physical examination revealed abdominal tenderness to palpation diffusely with guarding and no bleeding noted on pelvic exam. Vitals were 98.4 F, heart rate 135 bpm, blood pressure 116/60, respiratory rate 18, O₂ saturation 100% on room air. Significant laboratory values at the time of ED admission were leukocytosis of 26,000 and anemia (H&H 5.9/22.3). CT scan of the abdomen and pelvis with IV contrast revealed a likely second trimester age fetal skeleton with a partially collapsed calvarium within the peritoneal cavity and an abnormal complex cystic lesion in the right adnexal area. Diagnosis of a ruptured abdominal ectopic pregnancy with a tubo-ovarian abscess was suspected based on the patient's clinical presentation and CT imaging findings.

The patient was immediately transferred to the operating room for exploratory laparotomy and removal of the ectopic pregnancy and tubo-ovarian abscess. General surgery was consulted intraoperatively as the fetal skeleton was adhered to the small bowel. The fetal tissue along with the large right tubo-ovarian mass was removed and right salpingo-oophorectomy was performed due to the fibrosis and necrosis of the right ovary and tube. Operative findings showed a 10 cm right simple appearing adnexal cyst and a normal left ovary and tube. The right fallopian tube was enlarged, dilated, and adhered to the sigmoid colon at midline. The right ovary and fallopian tube were fibrotic and necrotic, and a mummified, degenerated 2nd trimester fetus was free in the abdomen and adhered to the small bowel, mesentery, and omentum (Figs. 1-4).

The patient experienced no complications aside from gastric ileus and was stable for discharge at postoperative day eight. Given the patient's stable condition and lack of complications one-month post-operation, further office evaluations were not deemed vital and outpatient evaluations were agreed to resume several months post-operation.

Discussion

Ectopic pregnancies make up 1%-2% of all pregnancies, and of those, 95% implant in the fallopian tubes [2]. With an incidence rate of 1%-1.5% of all ectopic pregnancies, abdominal ectopic pregnancies have been reported to be located in the Pouch of Douglas, omentum, mesosalpinx, spleen, liver, and appendix [5].

Abdominal ectopic pregnancies are classified as either primary or secondary. Primary ectopic pregnancies occur when there is an intraabdominal fertilization of the sperm and ovum and secondary ectopic pregnancies occur most com-

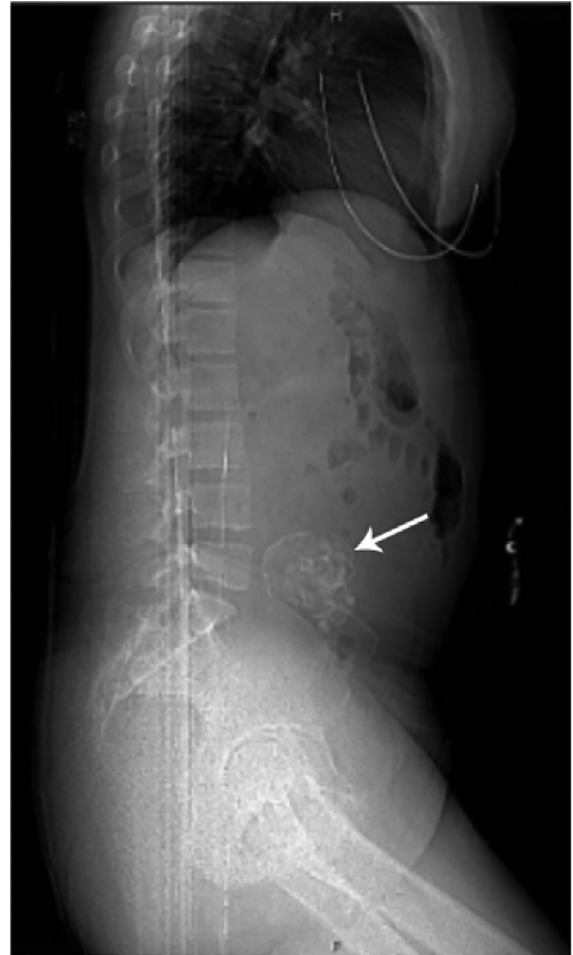


Fig 1 – Sagittal view of the fetal skeleton (arrow).



Fig 2 – Axial view of fetal skeleton with partially collapsed calvarium likely second trimester age within the peritoneal cavity (arrow).

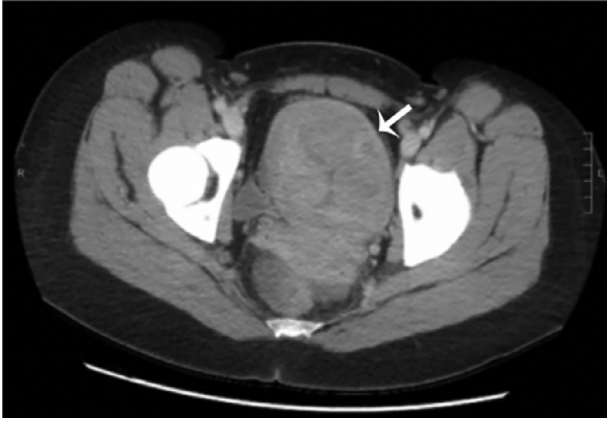


Fig 3 – Axial view of the enlarged leiomyomatous uterus (arrow).

monly as a complication of an aborted tubal pregnancy. The following Studdiford's criteria for proof of primary peritoneal pregnancy can be used to diagnose or rule out primary ectopic pregnancies: presence of normal tubes and ovaries, no evidence of uteroperitoneal fistula, and presence of a pregnancy related exclusively to the peritoneal surface and early enough to eliminate the possibility of secondary implantation after primary nidation of the tube [6]. In this patient, a secondary ectopic pregnancy is suspected given evidence of a tubo-ovarian abscess, possibly indicating a tubal rupture that released an egg into the abdominal cavity.

The diagnosis of abdominal ectopic pregnancies is often missed through regular obstetric imaging. In a case report by Trelofac et al, a woman with abdominal ectopic pregnancy underwent multiple transabdominal ultrasounds after failed MTPs (medical termination of pregnancies), which all showed normal intrauterine pregnancies. Especially in the case of abdominal pregnancies, the diagnosis is often not made until much later in the pregnancy, i.e., after 20 weeks gestation, making maternal mortality eight times greater than that of other implantation locations, at 0.5%–18% [1]. Here, our patient presented with an intraabdominal fetus, making her one of the less than 1% of ectopic pregnancies. The fetal age was unknown, but by size was in the second trimester. While the diagnosis of an ectopic pregnancy is only 2% of pregnancies, it should be suspected and thoroughly investigated in order to prevent severe morbidity and mortality. In difficult to diagnose cases like the one reported by Trelofac et al, ultrasound imaging alone may not be sufficient to diagnose a rare case of abdominal ectopic pregnancies. Computed tomography and magnetic resonance imaging can be used in addition to the ultrasonography to confirm the diagnosis, determine anatomical relationships, and assess placental adherence.

The main treatment for abdominal ectopic pregnancies is surgery by operative laparoscopy or laparotomy. However, a standard surgical intervention has not yet been established because of the lack of documented cases in literature. Laparoscopic surgery is seen to be a viable option for abdominal ectopic pregnancies that are in the early gestational age, but



Fig 4 – Coronal view of the fetal skeleton (yellow arrow), tubo-ovarian cyst (white arrow), and leiomyomatous uterus (red arrow) (color version is available online).

laparotomy is preferred for treating abdominal ectopic pregnancies in the mid-to-late gestational age due to the easier control for potential hemorrhage [4]. The decision to resect the placenta or leave the placenta in situ is dependent on the patient's risk factors for hemorrhage or infection and the anatomical location of the placenta. Therefore, it is recommended that the surgical method and treatment plan be tailored to the patient for each case. In this patient case, treatment of the abdominal ectopic pregnancy was successfully done by emergent laparotomy and removal of the fetal tissue and tubo-ovarian abscess. Very few cases of abdominal ectopic pregnancies with tubo-ovarian abscess such as this patient have been reported with clear radiological imaging. As such, further cases of abdominal ectopic pregnancies need to be reported to eventually establish an evidence-based diagnosis and treatment algorithm and improve clinical outcomes.

Patient consent

Patient consent for this case report was not required by the Eastern Virginia Medical School Institutional Review Board's Human Subject's Protection Program. All patient identifying information has been removed in writing this case report.

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