Atypical Presentation of Ectopic Pregnancy in an Obese Woman: A Case Report

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A 37-year-old obese woman (BMI=44.3) presented with disturbed consciousness, severe diarrhea and tachypnea. Physical examination revealed clear breathing sounds and a soft abdomen. She was initially treated as AGE and later a case of pulmonary embolism was suspected due to a high level of D-dimer. However the clinical presentation and the blood gas readings did not support a diagnosis of pulmonary embolism. Unstable hemodynamics developed within one hour. Emergency abdominal and pelvic computed tomography showed that this was a case of internal bleeding of unknown origin. Subsequently, the patient was subjected to laparotomy and a ruptured intratubal pregnancy was evacuated. She was discharged 5 days after admission as well and the recovery was still favorable at the 2 months follow-up.

Key words: ectopic pregnancy, pulmonary embolism, obesity

Introduction

Ectopic pregnancy commonly occurs in women with impaired tubal function. The symptoms and signs include abdominal pain with amenorrhea, pain radiating to the shoulder, syncope, and shock in 20% of patients. The diagnosis is difficult when there is an atypical presentation; however, late diagnosis of a ruptured ectopic pregnancy can be fatal due to massive internal bleeding.

Case Report

A 37-year-old obese female (height: 160 cm, weight: 116 Kg) presented with disturbed consciousness, shortness of breath and severe diarrhea; she also had a past history of Cesarean section. She brought by ambulance to our hospital emergency department. Physical examination revealed clear breathing sounds and a soft abdomen with mild discomfort, a pulse of 131 beats per minute and a blood pressure of 141/31 mmHg.

Based on the history and the clinical examination, the patient was initially diagnosed as AGE and having secondary hyperventilation. She was immediately resuscitated with I.V. fluids and an O2 supply. CBC revealed a normal Hb (HB = 12.0 g/dL) and a slightly elevated WBC (10630/uL). The other laboratory data showed an elevated blood glucose (280 mg/dL), a low pH of 7.278, a low bicarbonate level (HCO3 = 17.4 mEq/L). Her FDP-D dimer measurement was checked at this point and the result was 1140 ng/mL. Pulmonary embolism was then suspected as a differential diagnosis. However, the O2 saturation was 100% while she was receiving 3L/min through a nasal canula and acidosis with a low bicarbonate reading is not a presentation of pulmonary embolism; therefore pulmonary embolism was not considered to likely.

After initial management, the irritable mood...
progressed and an unstable blood pressure was then noted (BP = 81/39 mmHg). A central venous catheter was inserted for rapid fluid infusion and an inotropic agent with dopamine was also given. Owing to worsening abdominal discomfort, bedside abdominal sonography was performed and moderate ascites was noted. There had been no urine output and this was suspected to be due to hypovolemic shock. In these circumstances obtaining a urine sample for pregnancy testing was impossible and an analysis of her serum beta-HCG level was not available in less than 2 hours. Her husband declared that her last menstrual period had been 4 weeks ago.

Abdominal CT without contrast was arranged. It revealed a large hyperdense mass in lower abdominal cavity (Fig. 1). Hematoma due to a hemorrhagic ovarian cyst or an ectopic pregnancy was suspected. An immediate laparatomy was arranged. There was over 4000 ml of blood loss during the operation. The finding from the operation was the presence of a left adnexal tumor of about 5 × 4 cm. This had developed from the left fallopian tube and was ruptured during manipulation. A left tubal pregnancy with fetus was found. Complete hemostasis was achieved and abdomen was closed. Her postoperative course was unremarkable. She was discharged on the 5th postoperative day with no surgical or other postoperative complications.

There were no later postoperative complications at the 2 month follow up.

**Discussion**

Classically, the diagnosis of ectopic pregnancy is based on a history of pelvic pain associated with amenorrhea and a positive pregnancy test with or without slight vaginal bleeding (1). Unfortunately,
these findings are nonspecific and actually occur more commonly in patients who are threatening miscarriage than in an ectopic pregnancy. The classic triad of amenorrhoea, vaginal bleeding and abdominal pain occurs in less than 50% of patients with ectopic pregnancy. In a prospective consecutive case series, 50% of ectopic pregnancy cases were missed at initial presentation based on history and physical examination only. Furthermore, ectopic pregnancy is misdiagnosed in more than 40% of patients during the initial emergency department visit.

If ectopic pregnancies are to be picked up early, a high index of suspicion is necessary. This patient presented with symptoms of severe diarrhea and mild abdominal discomfort. There was no obvious pelvic pain initially and this could have been masked by her obesity. Secondarily, the information on her last menstrual cycle (4 weeks ago) was falsely reported by the family and was corrected (9 weeks) later by the patient herself. Clinical presentation of ectopic pregnancy occurs at a mean of 7.2 weeks after the last normal menstrual period and has a range of 5 to 8 weeks. Amenorrhea was not confirmed before diagnosis. Finally, serum β-HCG was not available in less than 2 hours due to laboratory limitation and urine sampling was impossible due to profound shock. The nature of the disease being unknown, a laparotomy is deemed the best way to identify the cause. Bleeding into the abdominal cavity is considered to be a medical emergency and exploratory laparotomy was used to determine the source of the patient’s pain and to perform any repairs as needed.

Misdiagnosed ectopic pregnancy is the cause of 50% of all maternal deaths caused by ectopic pregnancy. This translates into approximately 20 deaths each year in the United States that are caused by a misdiagnosed ectopic pregnancy. It is the leading cause of pregnancy-related death during the first trimester and accounts for 9% of all pregnancy-related deaths. An ectopic pregnancy is the development of an embryo in a location other than the uterus. Over 98% of ectopic pregnancies occur in the fallopian tubes, but other sites can include the ovaries, cervix, and abdominal cavity. In the United States, approximately one in every 200 to 250 pregnancies is an ectopic pregnancy. The epidemiological risk factors for tubal ectopic pregnancy are well established and include obesity, and high level of D dimer. Nevertheless, the blood gas readings did not support this diagnosis.

However, when signs of shock, such as tachycardia and low blood pressure, are present, internal bleeding should be considered. Abdominal sonography was arranged and revealed moderate abdominal ascites, thus halo organ perforation was suspected. However, it was not possible to confirm the nature of abdominal ascites and therefore further imaging by abdominal CT was arranged after rapid fluid resuscitation and inotropic agent use was carried. This showed a single large hyperdense mass in the lower abdominal cavity.

At this point a ruptured ectopic pregnancy was suspected but could not be confirmed because serum β-HCG was not available in less than 2 hours due to laboratory limitation and urine sampling was impossible due to profound shock. The presentation of a pulmonary embolism ranges from asymptomatic embolism though incidentally discovered embolism to massive embolism that causes immediate death. Acute pulmonary embolism may occur rapidly and unpredictably and may be difficult to diagnose. In this case, pulmonary embolism was suspected because of the dyspnea symptoms, the risk factor of obesity, and high level of D dimer. Nevertheless, the blood gas readings did not support this diagnosis.
tubal damage as a result of surgery or infection (particularly Chlamydia trachomatis), smoking and \textit{in vitro} fertilization\(^1\).

A previous history of ectopic pregnancy and parity seem to be significant risk factors for the rupture of an ectopic pregnancy. Obesity is not a risk factor of ectopic pregnancy, but it may diminish the signs of peritonitis. In an emergency, with a collapsed patient and a high index of suspicion, such a patient requires concurrent resuscitation and admission for laparotomy.

\section*{Conclusion}

Ruptured ectopic pregnancy is a true medical emergency. When women of child bearing age present with severe symptoms and signs of shock, physicians should keep in mind the possibility of this diagnosis. An emergency operation without delay should be arranged if there is hemodynamic instability in order to avoid patient mortality.

\section*{References}

子宮外孕在一名肥胖婦人的非典型表現：
一個病例報告

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一名37歲的肥胖婦女因意識混亂，腹瀉以及呼吸過快送至急診，理學檢查發現呼吸音順暢，腹部柔軟。初步診斷為急性腸胃炎合併換氣過度後，隨即因D-dimer升高而懷疑是肺栓塞，但臨床表現及其它實驗室數據並不支持此診斷，一小時後病患卻出現休克現象及持續腹部不適，緊急安排腹部電腦斷層後，發現腹內出血的情形。之後病人接受了剖腹探查術，發現是子宮外孕破裂並予以清除。病患於五日後痊癒出院，術後於門診追蹤復原良好。

關鍵詞：子宮外孕，肺栓塞，肥胖