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Case Report

Blighted Ovum: A Case Report

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ABSTRACT

Presenting in her late twenties, this case report examines a G6P2 patient at 11-weeks gestation that was diagnosed with a blighted ovum, as well as the subsequent outcome and methods of additional management. A blighted ovum refers to a fertilized egg that does not develop, despite the formation of a gestational sac. The most common cause of a blighted ovum is of genetic origin. Trisomies account for most first trimester miscarriages, while consanguineous marriages result in recurrent miscarriages due to a blighted ovum. Additionally, a higher percentage of deoxyribonucleic acid (DNA) damage in sperm carries a higher rate of miscarriage. Nutritional factors that may lead to a blighted ovum include low-levels of copper, prostaglandin E2, and anti-oxidative enzymes. High body mass index (BMI), especially in women with a BMI≥30 kg/m^2 has been shown to be linked to a blighted ovum. Globally, it has been shown that a blighted ovum is a serious adverse event related to vaccination against dengue fever.

INTRODUCTION

The case presented is of a 28-year-old female with a blighted ovum, with a focus on outpatient management. With 50% of miscarriages occurring in the first trimester, it is very likely that primary care physicians will encounter a patient with a blighted ovum and will have to properly manage the patient, whether it be expectant or a more invasive approach.

CASE PRESENTATION

A 28-year-old African American patient, G6P2 at 11-weeks gestation by last menstrual period with a past medical history of obesity and iron deficiency anemia presented with hyperemesis, abdominal pain, shortness of breath, urinary frequency, and passage of blood clots through the vaginal canal. A urine β-hCG conducted in the office indicated that the patient was pregnant. An ultrasound performed one-week previous by the patient's primary care provider was unable to establish an intrauterine pregnancy. Transvaginal ultrasound indicated an anteverted uterus measuring 11.6×8.2×7.8 cm. A 2.7 cm fluid collection was noted in the endometrial canal, which may represent an irregular gestational sac. No yolk sac or fetal pole could be seen. Ultrasound findings were concerning for a non-viable intrauterine gestation however, an early ectopic pregnancy or normal early uterine pregnancy could not be excluded. Serial exams and β-hCG measurements were recommended.

Laboratory analysis indicated a β-hCG of 21,457 mIU/mL, and two days later β-hCG levels decreased to 18,198 mIU/mL. Repeat ultrasound was unable to detect an intrauterine pregnancy. Due to the falling levels of β-hCG, it was concluded that the gestation was non-viable, and termination was discussed with the patient. Cytotec (misoprostol), a prostaglandin E1 analog, was considered as one option to induce shedding of the endometrial lining and the endometrial sac. Another option was dilation and curettage, which would be conducted under anesthesia in an inpatient setting. At the next follow-up appointment, the patient indicated that she had spontaneous passage of the gestational tissue, thus no further management was needed for the patient.

Differential Diagnosis

Ectopic pregnancy: Ectopic pregnancies can be attributed to any factor that damages the integrity of the fallopian tube or impairs the function of the fimbriae. Pelvic inflammatory disease is one of the leading causes of ectopic pregnancies. The most common location for an ectopic pregnancy is the fallopian tube but can occur in other areas such as the abdomen, ovary, or cervix, which

are much rarer.[1] Patients with an unruptured ectopic pregnancy usually present with first-trimester bleeding and abdominal pain. A transvaginal ultrasound is recommended over a transabdominal ultrasound to directly visualize the ectopic mass. However, a gestational sac cannot be visualized with ultrasound until β-hCG levels are between 1500 to 2000 mIU/mL.

Gestational trophoblastic disease: Gestational trophoblastic disease, also known as hydatidiform mole or complete mole, is a product of conception that arises in one of two ways: 1) an ovum with no maternal nucleus that is fertilized by a normal sperm, resulting in paternal DNA duplication; or 2) an ovum with no maternal nucleus that is fertilized by two sperm. The result is a diploid karyotype of either 46XX or 46XY, with 46YY being lethal. Fetal tissue is usually absent. A partial mole is also possible, in which the ovum preserves the nucleus and is subsequently fertilized by two sperm. This results in a triploid karyotype of 69XXY, 69XXX, or 69XYY. This type of gestation usually has a fetus, with a chance of viability, and amniotic fluid.[2]

Patients usually present with hyperemesis gravidarum, pelvic pressure, and a rapidly enlarging abdomen. A transvaginal ultrasound would indicate presence of cystic lesions or the classic "snowstorm" appearance. Some patients may experience passage of these cysts or "grape-like" masses through the vaginal canal. As with any other type of pregnancy, serial β-hCG levels should be measured. However, compared to a normal gestation, the β-hCG levels in trophoblastic diseases are magnitudes higher, usually in the hundreds of thousands range.

Although most hydatidiform moles are benign and can be managed conservatively with measures such as dilation and curettage or suction evacuation, there is still a possibility of transformation to malignant gestational trophoblastic disease or choriocarcinoma. After evacuation of the mole, patients should be monitored with weekly β-hCG measures until levels normalize.[2] Follow-up for 6-months is recommended while the patient is on a form of contraception to ensure β-hCG measures are not due to another gestation. If β-hCG levels do not normalize, the possibility of choriocarcinoma should be investigated.

DISCUSSION

According to research, there are about 200,000 cases of blighted ovum in the United States annually, and most patients first present to their primary care doctor with chief complaints of missed periods or vaginal spotting, abdominal pain, or nausea/vomiting. A blighted ovum causes 1 out of 2 miscarriages in the first trimester of pregnancy.[3] Evaluation of a patient initially begins with a pregnancy test, which can be conducted using urine or serum. Pregnancies with early embryonic failure have lower-levels of both human chorionic gonadotrophin (β-hCG) and human placental lactogen (HPL).[4] However, in order to confirm the diagnosis an ultrasound has to be conducted. A pregnancy is an embryonic if a transvaginal ultrasound reveals a sac with a mean gestational sac diameter (MGD) greater than 25 mm and no yolk sac, or a MGD>25 mm with no embryo.[3] Once the diagnosis is established, several options for management can be utilized. Expectant management can be employed and can wait for the tissues to pass on its own; Misoprostol is a medical treatment option to induce passage of tissues. Methotrexate has also been used as a modality in cases of ectopic pregnancy to remove non-viable tissue while preserving future fertility. If these options fail, the remaining options are surgical, with a dilation and curettage (D&C). Nonetheless, expectant management is preferred over surgical interventions as it is more safe and has lower pelvic infection rates than a D&C.[5]

CONCLUSION

From an epidemiologic perspective, half of the global population has the potential to undergo a gestation. With consanguineous marriages being prevalent in certain ethnic groups, there is a likelihood of a physician having a patient with a blighted ovum. Physicians should be well-versed in how to manage a blighted ovum and the treatment modalities available.

CONSENT

The authors have received written informed consent from the patient.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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