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Adnexal Mass in a Spontaneous Pregnancy Diagnosed as Heterotopic Pregnancy at the Time of Cesarean Delivery

Jane K. Martin, MD,[1] Rajiv B. Gala, MD[1,2]

[1]Department of Obstetrics and Gynecology, Ochsner Clinic Foundation, New Orleans, LA [2]The University of Queensland School of Medicine, Ochsner Clinical School, New Orleans, LA

Background: Heterotopic pregnancy is a rare complication usually seen in populations at risk for ectopic pregnancy or undergoing fertility treatment. Most commonly, heterotopic pregnancy is diagnosed at the time of rupture when surgical management is required.

Case Report: A 26-year-old gravida 2 para 1 patient had a right adnexal mass discovered in the first trimester that was conservatively managed for the remainder of her pregnancy. She underwent a cesarean delivery with right salpingectomy. Heterotopic pregnancy was diagnosed after final pathology. The patient had no risk factors for heterotopic pregnancy.

Conclusion: Heterotopic pregnancy should be suspected in patients with an adnexal mass, even in the absence of risk factors.

Keywords: *Adnexal diseases, pregnancy, pregnancy–heterotopic*

Address correspondence to Rajiv B. Gala, MD, Department of Obstetrics and Gynecology, Ochsner Clinic Foundation, 4429 Clara St., Suite 440, New Orleans, LA 70115. Tel: (504) 842-9618. Email: rgala@ochsner.org

INTRODUCTION

Adnexal masses are relatively common findings in pregnancy, with an incidence ranging widely from 1%-8.8% depending on the population studied and the frequency of prenatal ultrasonography.[1] Cystic masses are the most common findings and have a spontaneous resolution rate of 51%-70% by 20 weeks' gestation.[2] That said, the various pathologies encountered can include a dermoid cyst, endometrioma, fibroid, malignant tumor, and even a heterotopic pregnancy. Approximately 1 in every 1,312 live births is complicated by an adnexal mass requiring surgical management.[2] The rate of malignancy among these persistent adnexal masses is 1%-3%,[3] with the most common types being germ cell, stromal, and epithelial tumors.

Among the nonmalignant etiologies, heterotopic pregnancies are rare, with an incidence of 1/30,000 among spontaneous conceptions. Heterotopic pregnancies are most commonly seen in patients who have undergone assisted reproductive procedures (incidence of 1.5/1,000), especially those who experienced ovarian hyperstimulation and/or multiple gestation intrauterine pregnancies.[4] But heterotopic pregnancies are frequently overlooked during early first trimester ultrasounds because visualization of a normal intrauterine pregnancy causes the sonographer to dismiss any ovarian or tubal abnormalities. A review of patients undergoing their first ultrasound after in vitro fertilization and embryo transfer showed that the sonographer missed 58% of cases of heterotopic pregnancy.[5]

Adnexal masses in pregnancy can be managed conservatively with serial ultrasounds each trimester and evaluation at the time of delivery. Persistent masses tend to be $>$5 cm and exhibit complex morphologic changes on ultrasound. Indications for surgical exploration include rapid enlargement of the mass, size $>$8 cm, or malignant characteristics.[6] The two most common complications encountered while attempting to conservatively manage an adnexal mass in pregnancy are ovarian torsion (1%-22% risk) and rupture (1%-9% risk).[1] Nonemergent surgical intervention is ideally performed between 14-22 weeks' gestation.[1]

CASE REPORT

A 26-year-old gravida 2 para 1 patient initially presented at 7 weeks' gestation to the emergency department complaining of bilateral lower quadrant pain without vaginal bleeding for the previous 24 hours. Her pregnancy was spontaneous and uncomplicated except for history of a cesarean delivery 4 years prior. Her serum beta human chorionic gonadotropin (hCG) level was 208,729 IU/L, and her hemoglobin and hematocrit results were 11.8 g/dL and 35.1%, respectively. She was hemodynamically stable in no acute distress with a nonfocal examination. Transvaginal ultrasound confirmed a single live intrauterine pregnancy at 7 weeks 6 days' gestation (consistent with her last menstrual period), a presumed right corpus luteum cyst, and a large volume of complex fluid in the abdomen and pelvis (Figure 1). The patient was discharged from the emergency department in stable condition with instructions to call her obstetrician to coordinate prenatal care.

First trimester genetic screening was coordinated by the patient's primary obstetrician at the initial obstetric consul-

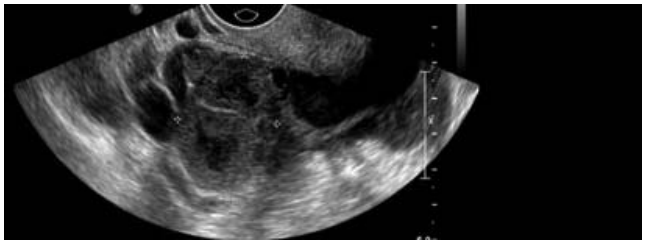

Figure 1. The transvaginal ultrasound performed at 7 weeks' gestation in the emergency department shows the right adnexa.

tation. During the nuchal translucency scan at gestation of 13 weeks and 1 day, a cystic right adnexal mass measuring 1.2 × 1.1 × 0.6 cm was noted and suspected to be a pedunculated fibroid. The mass was conservatively managed and reevaluated at the time of her detailed anatomy scan at 20 weeks' gestation. Ultrasound showed a complex 5 cm mass residing above a normal right ovary, suspicious for a degenerating fibroid with necrosis (Figure 2). Because the patient was asymptomatic, she was offered either expectant or surgical management of the adnexal mass. She chose conservative observation, and a repeat ultrasound was recommended between 32-34 weeks' gestation. However, the patient did not schedule another ultrasound during the remainder of her pregnancy.

On the day of admission for her scheduled cesarean delivery at gestation of 39 weeks and 1 day, the patient's vital signs were stable, and she had no concerns. The right adnexal mass was not palpable during abdominal examination. Intraoperatively, there were significant adhesions between the anterior abdominal wall, the rectus fascia, the right adnexa, and the uterus. The cesarean delivery was performed without complication, and the patient delivered a male newborn weighing 3,096 g with Apgar scores of 8 and 9 at 1 and 5 minutes, respectively.

After the hysterotomy was repaired, a 4-5 cm rubbery mass was identified in the ampulla of the right fallopian tube that had completely replaced the tube. A right salpingectomy was performed to remove the mass intact. The procedure was completed without complication, and the patient had an uneventful postoperative course. The final pathology revealed a grossly dilated fallopian tube measuring 9 cm in length and having a diameter ranging from 1-5 cm. The central 4.5 × 4 × 3 cm soft-to-rubbery ovoid lesion was tan-yellow with a smooth external surface exhibiting focal cystic degeneration and a well-defined 1.5 × 1.5 cm area of hemorrhage. Microscopic analysis showed hemorrhage, vascular congestion, and degenerative immature chorionic villi, confirming the final diagnosis of a heterotopic pregnancy (Figure 3). After considering the intraoperative and pathologic findings, we believe that the tubal ectopic pregnancy ruptured early in the pregnancy and was encapsulated with dense adhesions, rendering it hemostatic.

DISCUSSION

Spontaneous heterotopic pregnancies are rare findings, typically diagnosed at the time of emergent surgery after rupture of the ectopic pregnancy. In our literature review, we found 389 cases of heterotopic pregnancy. Only one other case reported a spontaneous tubal heterotopic pregnancy incidentally diagnosed at the time of cesarean delivery. That case had no ultrasonographic findings of an adnexal mass throughout the pregnancy.[7] The atypical presentation of our patient's heterotopic pregnancy makes this case unique: she had no risk factors for an ectopic pregnancy, never required fertility treatments, and never had an acute episode that would have suggested ectopic rupture.

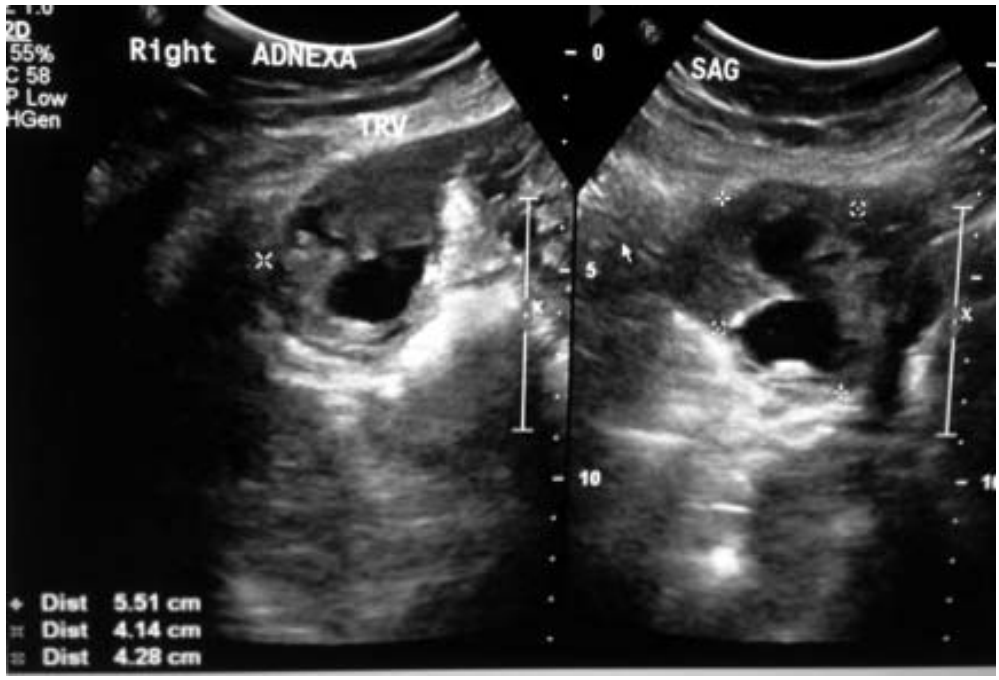

Figure 2. The ultrasound performed at 20 weeks' gestation shows a complex 5 cm mass in the right adnexa.

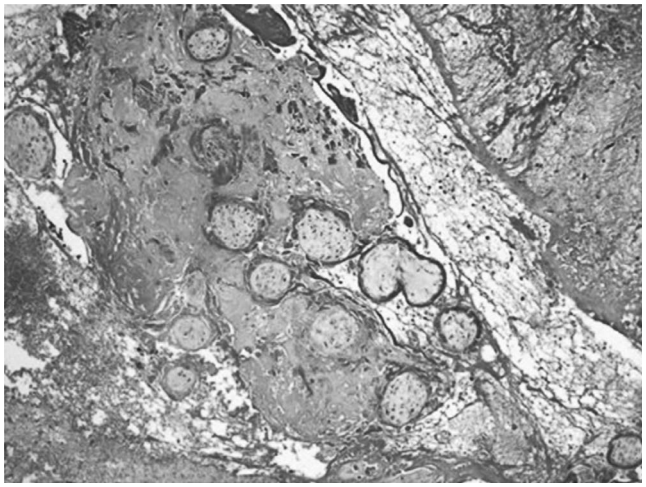

Figure 3. Pathology slide shows immature chorionic villi in the right fallopian tube.

In retrospect, the patient did have a few findings suspicious for a heterotopic pregnancy: her beta hCG of 208,729 IU/L was slightly higher than normal at 7 weeks' gestation (normal is 90-200,000 IU/L), and her initial ultrasound revealed a large volume of complex fluid in the pelvis with an intrauterine pregnancy at 7 weeks. A ruptured hemorrhagic corpus luteum cyst was the working diagnosis explaining the pelvic fluid seen on ultrasound. The adnexal mass was later described as complex on ultrasound. The combination of these findings, in addition to the patient's initial presentation with lower abdominal pain, should have raised the concern for a heterotopic pregnancy.

CONCLUSION

Even in low-risk patients, a heterotopic pregnancy should be considered as a differential diagnosis when an adnexal mass is discovered on ultrasound. Rupture of these masses can lead to massive hemorrhage and significant morbidity among women in the first trimester of pregnancy.

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