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DECIDUALIZED OVARIAN MASS CAN MIMIC MALIGNANCY: A CASE REPORT

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ABSTRACT
Decidualization during pregnancy can cause changes in the ovaries that mimic malignancy; the ultrasound examination is unable to provide definite diagnosis; the high suspicion of malignancy necessitates surgical intervention in most cases. We report a case of an adnexal mass that was diagnosed incidentally during pregnancy, the mass had ultrasound findings that were associated with malignancy, during surgery, the lesion was observed to be of an ovarian origin and histology showed a marked decidualized endometrioma.

KEYWORDS: Pregnancy, endometriosis, frozen sections, progesterone, gestational age.

INTRODUCTION
The routine use of ultrasound during pregnancy leads to an increase in the diagnosis of ovarian cysts. Most of these cysts are simple cysts requiring minimal follow up if any; the incidence of ovarian malignancy during pregnancy remains low 1/5000 to 1/18000.[1] Decidualization is a histological phenomenon that describes the changes induced by progesterone and involve hypertrophy of the endometrial stromal cells leading to thickening of the normal endometrium, decidualization is not only observed in the uterine cavity but also outside the uterus, involving the tubes, ovaries and broad ligament.[2] The sonographic appearance of decidualized tissue can easily be confused with malignancy, as can the gross appearance at the time of Cesarean section. In this paper we describe a case of a pregnant woman who was found to have a pelvic mass which had a high morphological score suspicious of malignancy. She underwent surgery in the second trimester and had final pathological diagnosis of decidualized ovarian endometrioma.

CASE REPORT
A 40-year G4P3 Caucasian woman was referred to the obstetrics and Gynecology department at Prince Hashem Ibn AL-Husain Military Hospital. At the time of referral patient was 12 weeks pregnant, the patient had no significant previous history of ovarian cysts or endometriosis. Patient also had no family history of ovarian or breast cancer. We performed an extensive ultrasound examination which showed a singleton intrauterine pregnancy with normal growth and anatomy corresponding to 12 weeks of gestation. The right ovary was found to be enlarged measuring (5.5x3.4x4.7cm). In the right ovary a single hemorrhagic mass was observed measuring (3x3 cm) (figure 1). The left ovary was visualized measuring (2x2x3 cm). Mild amount of free fluids was observed in the pouch of douglas. The mass in the right ovary had no shadowing and a morphological score of 4. A morphological score of 3 or above is associated with malignancy. The sensitivity, specificity, positive and negative predictive value for this scoring system were the following 96.8%, 77%, 29.4% and 9.6%. This prompted a close follow up. Five weeks later a repeat sonographic exam was performed. The morphological characteristics of the cyst has changed. The hemorrhagic cyst grew significantly in size and Doppler studies revealed rich vascularity and a new large simple cyst was noted. After extensive counseling it was decided to proceed with surgery. Exploratory laparotomy was performed at 17 weeks gestational age. At surgery it was noted that the right ovary was densely adherent to the tube and contained two masses, one was a large simple cyst and the other mass contained chocolate fluid consistent with an endometrioma (figure 2). This was also confirmed on frozen section. The post-operative course was uneventful, and patient was discharged home day two post-surgery on dydrogesterone 10 mg BID. The final pathology showed a (9X10 cm) highly decidualized endometrioma.

Figures

Figure 1: Ultrasound shows enlarged right ovary containing hemorrhagic cyst.

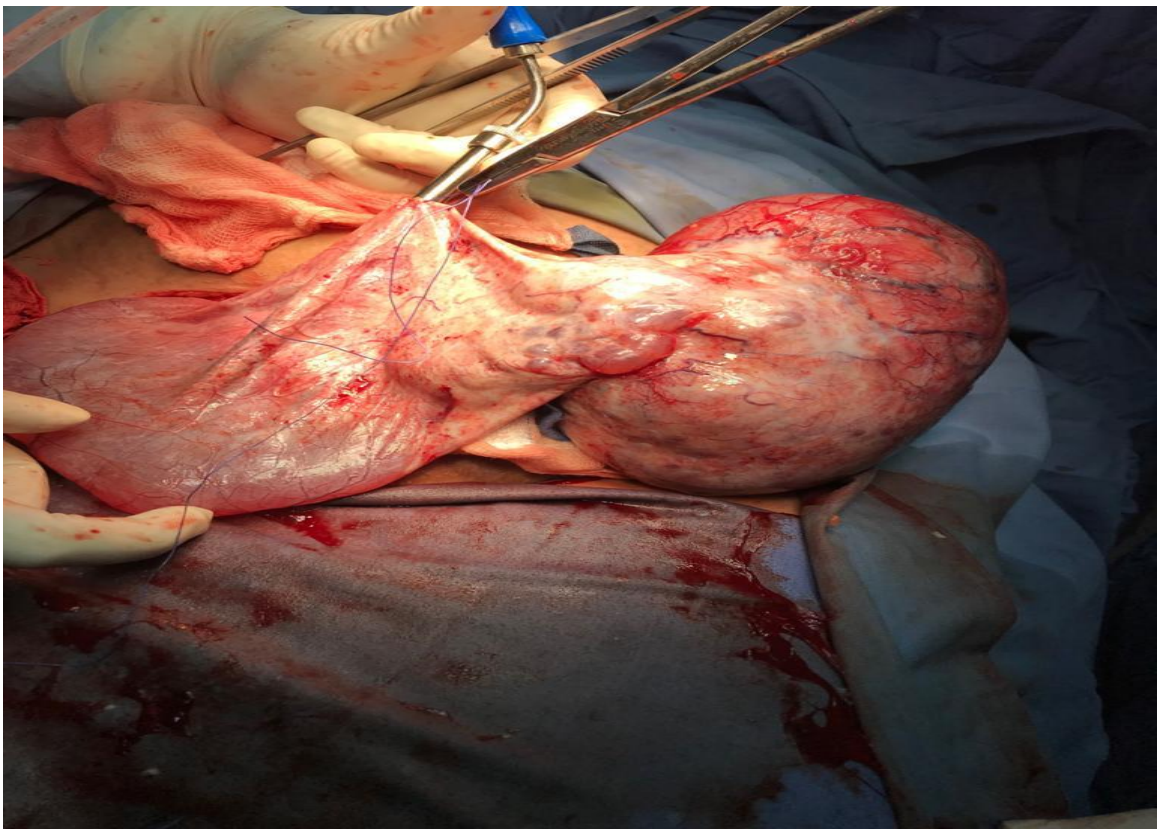

Figure 2: Intraoperative view of the right ovary containing a large simple cyst and endometrioma.

DISCUSSION

To our knowledge this is the fifth case of a decidualized ovarian endometrioma reported in the literature, four of these cases were reported in the last 14 months.[3-5] We used the morphological score to assess the mass, the morphological score was designed to differentiate between benign and malignant ovarian tumors, the score looks at structure, shadowing, septa and echogenicity, a score of more than three on a scale of 10 has a high malignant suspicion, our patient's mass had a score of four.[6]

Several attempts were made in the past to characterize adnexal masses using the ultrasound with and without Doppler. Sassonne published in 1991 their attempt to use transvaginal sonography in the characterization of adnexal masses. They developed a score of 1 to 14 and a score of 9 and above was considered significant for malignancy. This score looked at wall thickness, inner wall irregularity, septation and echogenic pattern. Several changes were made, the score was simplified, and several categories were collapsed into which made the scoring system more logical for use. Wall thickness was found to be nondiscriminatory and removed from the score while shadowing was found to be significant and was added as an additional variable. This new scoring system enables a better discrimination between benign and malignant.

Extrauterine deciduosis is a histological, benign condition which can be mistaken macroscopically as a malignancy; extrauterine deciduosis can be discovered incidentally in pregnancy during cesarean section. Deposits are usually found on the ovaries but could also be found in other locations in the pelvis even the cervix.[2,8] Deciduosis has been reported in the medical literature for at least 70 years. Different reports have described deciduosis of the peritoneal surface of the uterus, the cervix, the ovaries and the appendix.[2,7] Little is known about extrauterine deciduosis physiology and many theories have been proposed to explain this condition. The more accepted theory considers that the sub-coelomic mesenchymal cells undergo a progesterone-induced metaplasia, which usually is temporary and reverts back to normal once the hormonal influence disappears.[3,6] Gestational deciduosis is usually asymptomatic and most cases are described in patients not known previously to have endometriosis, on rare occasions it can cause symptoms like pain.[9-10]

One of the rare presentations of gestational deciduosis is an ovarian mass that has high malignant suspicion. The first case reported in Japan in 1998 by Miyakoshi described a rapidly growing mass during pregnancy with sonographic features suspicious of a malignant ovarian cancer, the final pathology after was a marked decidualized endometrioma.[3] The second case report was 2004 by Fruscella in Italy he also described an ovarian mass that had sonographic and Doppler changes suggestive of a malignant tumor. Again, histology showed it to be a decidualized endometrioma.[4] Finally, 2005 Sammour and his partners in Israel reported two cases in which pregnant patients had decidualized ovarian endometriotic cysts. The decidualized tissue within the cysts underwent thickening of the stroma and gained extensive blood supply under the influence of progesterone which gave the cysts a malignant appearance.[5] Our case again is a highly decidualized endometrioma that was suspected to be malignant by ultrasound. Differentiating decidualized masses from malignancy is challenging. Both malignancy and deciduosis have similar characteristics in term of increased blood supply and may produce similar sonographic appearance of irregular surfaces and solid parts.[6] The fact that four cases were published in the last 14 months gives us hope that these cases are more common than we thought and we might be able to find some common features that will make diagnosing these masses possible without the need for surgery. Deciduosis is still not fully understood and there are few unanswered questions. Steroidal sex hormones are thought to be responsible for these changes. Why don't we see these malignant like masses in non-pregnant women receiving hormonal therapy? Another question is why do we see these changes only in some women and not all pregnant women? And do these changes persist after pregnancy? Can we delay surgery to after delivery? We think that deciduosis needs more investigation to help us better understand this phenomenon.

CONCLUSION

A high index of suspicion for decidualized endometrioma should be maintained during pregnancy when encountering patient with complex adnexal mass. The most important step in detection of decidualized ovarian endometrioma is the awareness of its occurrence. Combination of ultrasonography and doppler can be beneficial in reaching diagnosis and appropriate management.

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