

Massive Ovarian Edema in Pregnancy

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Abstract

Background: Massive ovarian edema is a very rare condition characterized by a tumorlike enlargement of the ovary. The ultrasound findings have been reported as a solid tumorlike mass or as a solid mass containing a cystic component

Case: Our 30 years old case presented with acute abdomen syndrome in 13th week of gestation. The color doppler sonographic evaluation revealed right ovary as a solid mass, 90*50 mm in diameter with increased vascularity and increased ovarian arterial blood flow. A right salpingo-oophorectomy was performed by exploratory laparotomy. As a result of histopathologic examination, massive ovarian edema was diagnosed.

Conclusion: The sonographic appearance is nonspecific and the definitive diagnosis requires histological examination. The consideration of this rare entity is important to prevent incorrect treatment.

Keywords: Massive ovarian edema.

Gebelikte masif over ödemi

Amaç: Masif over ödemi overin tümör benzeri genişlemesiyle karakterize nadir bir hastalıktır. Sonografik bulguları tümör benzeri solid veya kistik komponentler içeren solid kitle olarak bildirilmektedir.

Olgu: 30 yaşında gebeliğinin 13. haftasında akut batin sendromu gelişen olgumuzda yapılan renkli Doppler sonografi ile sağ over 90*50 mm boyutlarında, solid, içerisinde vaskülarite artışı, ovarian arterde akım artışı saptandı. Eksploratris laparotomi ile sağ ooferektomi uygulandı. Histopatolojik inceleme sonucu masif over ödemi tanısı kondu.

Sonuç: Sonografik bulguları nonspesifik olan bu olguların kesin tanısı histolojik inceleme gerektirmektedir. Bu nadir hastalığın bilinmesi gereksiz tedavilerin önlenmesi için önemlidir.

Anahtar kelimeler: Masif over ödemi.

Background

Massive Ovarian Edema (MOE) is a pathology similar to ovarian tumors which is formed by interstitial fluid retention in the ovarian stroma. It is a rare disease. In its' etiopathogenesis recurrent semi-ovarian torsions are considered to be responsible.¹

It is mostly reported in young age group like 6 to 33 years but some cases are also presented in menopause age group.^{2,3}

Conservative treatment is essential in younger age group to preserve the ovarian functions. It is

difficult to diagnose preoperatively. Specific Ultrasonography and Magnetic Resonance signs has not been defined adequately.

In our case the signs of scanning and the relation between ovulation induction is presented and our aim was to contribute to data in the literature.

Case

A 30 years old female patient G1P0 with severe abdominal pain, nausea, vomiting and vaginal

bleeding has admitted to our clinic in emergency conditions. She had a 13 week old pregnancy according to her last menstrual period which was a result of clomiphene citrate ovulation induction. She had a regular antenatal follow-up and her routine control was performed 10 days previously.

In her physical exam a mass with regular contour which could not be differentiated from the pregnant uterus in right abdominal quadrant was palpated. There was a significant defence in the lower quadrants. In her pelvic exam a small amount of blood was oozing from the cervical os and the uterus which is consistent with 13 week old pregnancy was soft and right to the uterus a painful, large, soft mass was also palpated.

In the abdominal ultrasonography 13 week + 5 days old single, live fetus and a retroplacental 36x14 mm hematoma was seen. In the right adnexial location near to the pregnant uterus a solid mass of 90x50 mm was observed. With the color Doppler scanning an increase in vascularity in right ovarian mass (Figure 1) and an increase in right ovarian arterial flow was seen. RI values were 0.60. There was free fluid in Douglas pouch.

A laparotomy was planned because of acute abdomen. Infraumbilical median incision was perfor-

med. In exploration the uterus was consistent with the week of pregnancy. A serous free fluid about 20 ml was observed. A specimen was taken for cytologic exam. In the right ovary there was a dark red colored semitorioned mass of 90x60x30 mm volume. As it was performed under emergency conditions there was not a possibility to do frozen section. A right oophorectomy was performed. After the bleeding control the surgery was ended.

In the microscopic evaluation of the cytologic specimen; a few amount of lymphocytes, mesothelial cell groups in reactive characterization on bleeding erythrocyte background was observed.

In pathological exam right ovary was found to be macroscopically 90x60x50 mm, there was a surface bleeding which was bright dark red in color and solid. In microscopic evaluation on edematic stroma there were microcystic structures and the vascular regions showing erythrocyte extravasation with dilated lymphatics (Figure 2). Massive ovarian edema diagnosis was made by the histyopathologic signs.

In the postoperative period the patient's vaginal bleeding stopped and had no pain. In the ultrasonographic follow-up retroplacental hematoma was not seen. On the postoperative 7th day she was disc-



Figure 1. Increased vascularity inside the right ovarian mass.

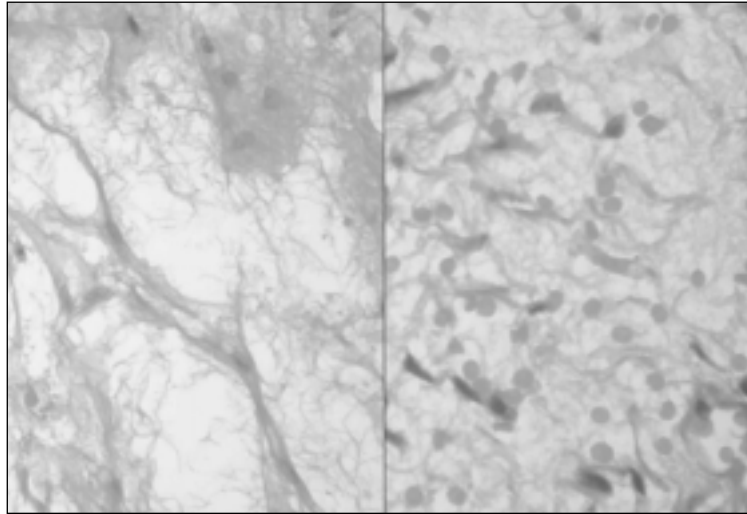


Figure 2. Stroma edema, erythrocyte extravasation, dilated lymphatics in the microscopic examination.

charged. There was no problem with her antenatal follow-up. Her pregnancy is carried out and now it is 37 week old.

Discussion

In the etiology of massive ovarian edema recurrent semi-torsion of ovarian pedicle is thought to be responsible. While with the torsion venous and lymphatic flow is disrupted, but the arterial flow persists, this condition may lead to this consequence. However, in half of the cases during the surgery torsion can be seen.² In our case there were signs of semi-torsion.

15% of the cases are bilateral, 85% unilateral and 75% located in the right ovary. The pressure is higher in the right because right ovarian vein directly drains into vena cava. It is mostly seen in right ovary because of the pressure differences in ovarian veins⁴. It also developed in the right ovary in our case.

The cases admit to the hospital with acute pain secondary to the torsion.^{5,6} Our case admitted to the hospital with acute abdomen.

It is difficult to make a definitive diagnosis of massive ovarian edema cases preoperatively. The published cases are evaluated by conventional ultrasonography, color Doppler sonography and magnetic resonance imaging (MRI). The sonographic

signs are different, mostly solid tumor-like mass appearance has been defined.

It is found to be more hypoechoic than myometrium and contains peripherally located cystic components and these are the ultrasonographic features defined in the literature.^{3,7,8} However there is no case which has a MOE diagnosis only by ultrasonography.

Characteristic Doppler features have not been defined for these cases. When there is complete torsion it is expected that ovarian blood flow is stopped and with Doppler sonography there should be no vascularization. However the signs can be different according to the level of effected vascular system from torsion because ovaries get blood from two different supplies. The first sign of torsion is the absence of venous blood flow, during this period arterial flow can be shown as highly resistant. Doppler sonography signs can be minimal in incomplete or intermittent torsion.^{9,10} Güvenal et al¹¹ presented a MOE case with a normal blood flow in Doppler sonography. In our case Doppler sonography revealed an increase in vascularity in ovarian mass and an increase in ovarian artery flow. It is noted that there was highly resistant flow samples in ovarian artery and ovarian parenchyma. These signs indicate that there was no complete torsion.

In published cases of MOE, in MRI findings it is defined in T1 weighted images heterogenous low

intensity and in T2 weighted images homogenous high intensity.⁸ When the evaluation of ultrasonography and MRI is combined it is thought that preoperative diagnosis rate will be increased.¹² As our case was managed under emergency conditions MRI evaluation could not be done.

In the literature polycystic ovary syndrome and infertility together with MOE is published.^{13,14} Ovulation induction in infertility treatment causes increased ovarian volume and predispose to torsion. Patty et al has published a case of massive ovarian mass which is a result of ovulation induction with clomiphene citrate, however in this case pregnancy was not achieved.¹⁵ In our case pregnancy was achieved after ovulation induction with clomiphene citrate and the case occurred during pregnancy. There are two more published cases of massive ovarian edema in pregnancy^{8,16} and our case is the third.

As a conclusion, massive ovarian edema is a rare benign pathology seen in young age patients. In a few amount of published case, it was possible to preserve ovarian functions with conservative treatment^{17,18} with the diagnosis of preoperatively or intraoperatively. As it could be seen in young age group and infertile patients, during ovulation induction it should be also taken into consideration. Scanning signs are nonspecific and has not been defined adequately. In our case we aimed to contribute to literature about this subject presenting the relation between scanning signs and ovulation induction.

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