

Torsion of a large ovarian dermoid cyst in the second trimester of pregnancy and its management: a case report

Abstract

Background: The Dermoid cyst is the most common ovarian germ cell tumor in pregnant women. During pregnancy, the risk of complications such as torsion, rupture, and infection increases in dermoid cysts. Treatment includes follow-up or surgical intervention. The present study reports a case of a large ovarian dermoid cyst in pregnancy and its treatment.

Case report: An 18-year-old primiparous woman presented with nausea and severe abdominal pain in the lower left quadrant. On a deep abdominal examination, there was a palpable mass in the area. Ultrasound showed left ovarian torsion of a large dermoid cyst 10×11cm in size. The patient underwent a laparotomy and with the left ovary preserved, the cyst was removed. Ultrasound showed fetal health a few days after surgery.

Conclusion: gynecologists should be aware of the possibility of acute ovarian torsion in pregnant women and should have a high level of suspicion. Early surgical intervention reduces the risk of complications.

Keywords: dermoid cyst, pregnancy, laparotomy, vaginal examination

Volume 6 Issue 3 - 2020

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Received: April 17, 2020 | **Published:** May 08, 2020

Introduction

Mature cystic teratoma, also called dermoid cysts, are the most common ovarian tumors in women of childbearing age and are responsible for 20% of adult ovarian tumors.^{1,2} They originate from germ cell layers and usually contain ectodermal tissues such as skin, hair and nails, mesodermal tissues such as fat and muscle, and endodermal tissues.³ They are the most common ovarian germ cell tumors during pregnancy. Dermoid cysts are commonly diagnosed in the second trimester in three out of a thousand pregnancies. During pregnancy, the risk of complications such as torsion, rupture, and infection increases in dermoid cysts.⁴ Among women gynecological surgeons, the most appropriate surgery for the treatment of dermoid cysts is a controversial issue.^{5,6} This study reports a case of torsion of a large ovarian dermoid cyst in the second trimester of pregnancy and its management.

Case report

An 18-year-old nulliparous woman presented to women's examination room of the labor ward of Sina hospital, Ahvaz, Iran with complaints of nausea and abdominal pain that was more severe in the lower left quadrant. She stated that the pain had started spontaneously 24 hours earlier and had gradually worsened. The patient was anxious due to severe pain. She did not know the exact date of the last menstrual period. During Leopold's first maneuver, the uterine height was about 18 weeks. Auscultation of the fetal heart rate was normal. On vaginal examination, the cervix was closed and tenderness was present in the left fornix. On abdominal examination, there was tenderness of the left lower quadrant. There was a palpable mass in the area at the deep palpation. Her blood pressure was 100/60 mmHg, pulse rate was 98 per minute and body temperature was 36.5°C. During a hematologic examination, WBC=6400/uL, Hgb=11.4g/dL and PLT=309000/uL were found.

The patient was urgently referred to the ultrasound ward with an acute abdominal diagnosis. On pelvic ultrasound, a gestational sack

was observed, in which a single live fetus with a normal fetal heart rate and an age of 17 weeks and 4 days was seen. The right ovary had a diameter of 23×14mm. On the left adnexa, an image of a cystic area containing internal echoes and echogenic focuses and fat-fluid level with a volume of 110cc and a size of 11×10cm was observed which represented the dermoid cyst (Figure 1). The vascular flow was observed around the cyst. The mild fluid was observed in the left adnexa and around the cystic region. The ultrasound diagnosis was ovarian torsion of the cyst. In the ultrasound examination of the appendix, no inflamed lobe was seen. The patient transferred to the operating room after undergoing oophorectomy consent. With laparotomy, a large dermoid cyst approximately 10×12cm in size was carefully removed from the left ovarian tissue (Figure 2). It contained tissues of hair, teeth, and fat. The left ovary was restored. The pathological examination of the specimen confirmed the benign dermoid cyst. Pregnancy ultrasound was performed after stabilization, indicating fetal health. The patient was discharged in good general condition on the fourth day after surgery (Figure 3).

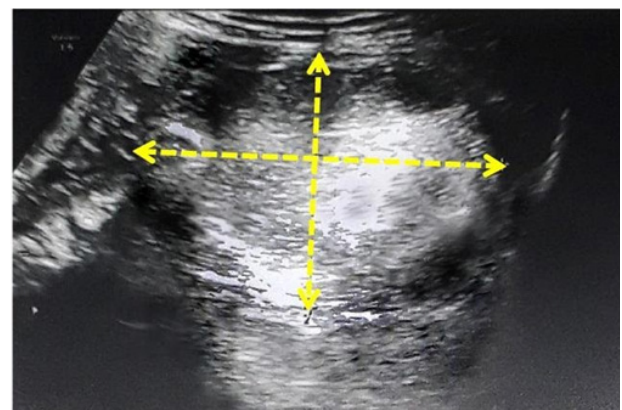


Figure 1 Ultrasound view of the large dermoid cyst.

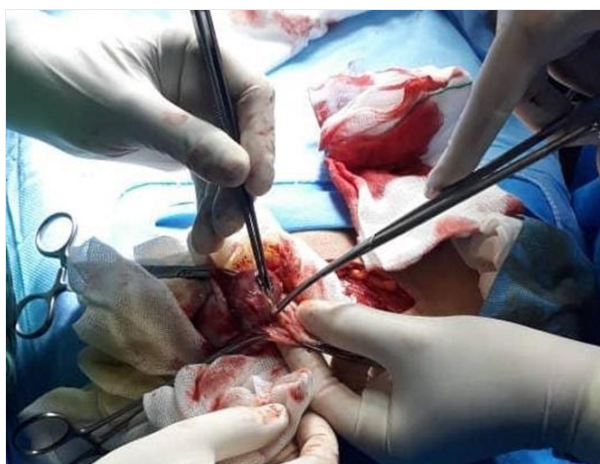


Figure 2 Removal of the ruptured dermoid cyst in surgical intervention from the left ovary tissue in laparotomy.



Figure 3 The ruptured dermoid cyst during surgical intervention and hair seen inside the cyst.

Discussion

The differential diagnosis of acute abdominal pain is widespread during pregnancy and includes ectopic pregnancy, appendicitis, ureteral colic, pelvic inflammatory disease and, torsion of the ovary due to ovarian masses.⁷ Ovarian masses are common in pregnant women. Sherard declared that the average age at ovarian mass diagnosis and surgery in pregnancy is 12 and 20 weeks, respectively.⁸ A dermoid cyst can be diagnosed by ultrasound. Ultrasound may show diffuse or partial echogenic mass along with echogenic areas of subserous material and hair in the cyst. Other diagnostic methods include CT-scan and MRI.⁹ Most references recommend that in asymptomatic pelvic masses surgical treatment is indicated when the mass size is more than 6 cm. They also recommend mass removal in the second trimester of pregnancy.¹⁰ In our study, torsion of the ovarian dermoid cyst caused acute abdomen and emergency surgical treatment was indicated. Ovarian torsion occurs when the ovary twists in its vascular pedicle.⁷

The diagnosis and treatment of the ovarian dermoid cysts in pregnancy have been reported in some studies. Tan et al. described a 28-year-old pregnant woman with a gestational age of 11 weeks with

a large cystic teratoma of the right ovary with concomitant torsion. The size of the cyst based on ultrasound was 8 cm. Right ovarian cystectomy was performed successfully via laparoscopy.⁷ Chaudhary et al.,¹¹ presented a case report of a ruptured dermoid cyst measuring 5×6cm in ultrasound in a pregnant woman with a gestational age of 24 weeks. The ruptured dermoid cyst in the left ovary was removed in laparotomy.¹¹ According to scientific evidence, when surgery is necessary to treat ovarian cysts laparoscopy be generally considered to be the gold standard of the treatment for all benign ovarian masses. Laparoscopy reduces pain, shortens bleeding, and healing time.⁷ Laparotomy may be more appropriate if the ovarian masses are large and contain solid components (such as a mature cystic teratoma).^{5,6} The maximal size of the cyst that is an indication for laparotomy is controversial. Some evidence has suggested laparotomy to remove ovarian masses over 10cm in size.¹² In our case report, a laparotomy intervention was performed because the cyst size was estimated to be more than 10 cm in the ultrasound.

Conclusion

Finally, gynecologists should be aware of the possibility of acute ovarian torsion in pregnant women and should have a high level of suspicion. Early surgical intervention in such cases is salvageable and reduces the risk of complications for the mother and fetus.

Acknowledgments

None.

Conflicts of interest

Author declare that there is no conflict of interest.

Funding

None.

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