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TWISTED OVARIAN CYSTS IN PREGNANCY: BALANCING CONSERVATIVE AND SURGICAL MANAGEMENT FOR OPTIMAL OUTCOMES

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Abstract

Objective: Ovarian cysts are commonly detected in pregnancy due to routine prenatal ultrasonography. Most are benign and resolve spontaneously, but some may cause complications, risking both mother and fetus. Case Report: A 23-year-old primigravida at 30-31 weeks of gestation presented for routine antenatal care. She had a history of laparotomy and left salpingo-oophorectomy at 11 weeks 3 days pregnant due to ovarian torsion. A 9.16 × 6.32 cm left ovarian cyst with a depth of 5.13 cm was detected early in pregnancy and managed conservatively. However, due to worsening pain, surgical intervention was performed. At the current visit, she was asymptomatic, and ultrasound confirmed a viable singleton pregnancy with normal fetal parameters. Vaginal delivery was recommended. Conclusion: This case highlights the importance of timely diagnosis and appropriate management of ovarian cysts in pregnancy. A balance between conservative monitoring and surgical intervention is crucial to ensure optimal maternal and fetal outcomes.

Keywords: *Ovarian torsion in pregnancy, Adnexal mass, maternal and fetal outcomes*

Abstrak

Tujuan: Kista ovarium sering terdeteksi selama kehamilan karena pemeriksaan ultrasonografi prenatal rutin. Sebagian besar bersifat jinak dan dapat menghilang dengan sendirinya, namun beberapa dapat menyebabkan komplikasi yang membahayakan ibu maupun janin. Laporan Kasus: Seorang wanita primigravida berusia 23 tahun pada usia kehamilan 30–31 minggu datang untuk pemeriksaan antenatal rutin. Pasien memiliki riwayat laparotomi dan salpingo-ooforektomi kiri pada usia kehamilan 11 minggu 3 hari akibat torsi ovarium. Sebuah kista ovarium kiri berukuran 9,16 × 6,32 cm dengan kedalaman 5,13 cm terdeteksi pada awal kehamilan dan awalnya ditangani secara konservatif. Namun, karena nyeri yang semakin memburuk, tindakan operasi dilakukan. Pada kunjungan saat ini, pasien tidak menunjukkan gejala, dan hasil ultrasonografi menunjukkan kehamilan tunggal yang masih hidup dengan parameter janin yang normal. Persalinan pervaginam direkomendasikan. Kesimpulan: Kasus ini menekankan pentingnya diagnosis yang tepat waktu dan penatalaksanaan yang sesuai terhadap kista ovarium pada kehamilan. Keseimbangan antara pemantauan konservatif dan intervensi bedah sangat penting untuk menjamin hasil yang optimal bagi ibu dan janin.

Kata kunci: Torsi ovarium dalam kehamilan, Massa adneksa, Hasil kehamilan ibu dan janin

INTRODUCTION

Ovarian cysts are often detected during pregnancy, especially with the increasing use of prenatal ultrasound on a regular basis. Most of these cysts are benign, asymptomatic, and tend to spontaneously resolve as the pregnancy progresses [1]. However, in some cases, complications can occur and pose a risk to the mother as well as the fetus. The incidence of ovarian cysts in pregnancy is estimated to range from 0.3% to 5.4% [2]. Most ovarian cysts are found accidentally during routine ultrasound examinations in the second or third trimester of pregnancy [1].

Ovarian cysts during pregnancy can lead to serious complications, especially ovarian torsion (8% of cases), which causes severe pain and often requires emergency surgical intervention [2]. In addition to ovarian torsio, several other complications can also occur due to ovarian cysts during pregnancy. Cyst rupture, although rare, can cause acute abdominal pain and internal bleeding that requires immediate medical attention [3]. Although rare, the possibility of malignancy also needs to be considered, so close monitoring and, in some cases, surgical intervention may be necessary [1]. The treatment of ovarian cysts during pregnancy depends on the size, symptoms, and risk of complications. Cysts <6 cm are usually monitored regularly because they can disappear on their own [1,4].

However, in cysts that are larger, cause symptoms, or have suspicious characteristics, surgical measures may be considered. Laparoscopy is more recommended in the first and second trimesters, while laparotomy may be necessary for more complex cases [1,2]. Meanwhile, in the third case, a large ovarian cyst was detected at 30 weeks gestation and intrauterine aspiration was performed at 34 weeks, which allowed the birth of a healthy baby and the regression of the cyst after childbirth [5]. The cases show that the appropriate management strategy may vary depending on the clinical condition of each patient.

This case report aims to describe ovarian cyst management strategies during pregnancy, highlighting the considerations between conservative approaches and surgical interventions. Through this case analysis, we hope to provide deeper clinical insights into decision-making to achieve optimal pregnancy outcomes.

CASE REPORT

The patient, a 23-year-old woman, G1P0A0, during her first Antenatal Care (ANC) visit, underwent an ultrasound at the previous hospital's clinic. She was diagnosed with an ovarian cyst in early pregnancy, measuring 9 cm. Since she did not experience any symptoms, the doctor recommended observation and advised her to visit the emergency room if she developed severe lower abdominal pain.

At a gestational age of 11 weeks 3 days, the patient came to the emergency room at our hospital with complaints of pain in the left abdomen that had been felt for one week and had progressively become more severe. She had restricted movement and was tachycardic (123x/minute). Physical examination revealed severe tenderness and rebound pain in the left lower abdomen with a palpable mass. During the ultrasound examination, which was difficult to perform due to the patient's discomfort, fetal heart activity (FHA) was confirmed. Ultrasound results showed a single fetus alive corresponding to 11+3 weeks with a 9.16 x 6.32 cm left ovarian cyst with a 5.13 cm depth. The patient was diagnosed with a twisted ovarian cyst (ovarian torsion), and emergency laparotomy was performed to address the mass. The patient was educated about the possibility of an abortus (miscarriage) due to the operation. During the operation, an

ischemic (lacking blood supply) ovarian cyst was found twisted 3 times, along with an ischemic left tube and ovary. Consequently, a left salpingo-oophorectomy (removal of the left fallopian tube and ovary) was performed.

After surgery, fetal heart activity was again confirmed and the patient was observed for signs of possible abortion and bleeding. She received pain medication and progesterone preparations to prevent abortion. After 2 days of action and observation, the patient was discharged. Histopathological confirmation of the removed mass revealed a benign serous cystadenoma. The patient continued routine antenatal care and subsequently gave birth vaginally at 39 weeks of gestation. The mother and baby were in good health.

DISCUSSION

The patient has a left ovarian torsion, an ovarian torsion is a gynecological emergency characterized by a total or partial rotation of the ovaries and sometimes the fallopian tubes around their vascular pedicles, which causes impaired blood flow and risks causing ovarian necrosis if not treated immediately [6]. The main symptoms of ovarian torsion are usually pelvic pain or lower abdominal pain that appears suddenly and is often accompanied by nausea and vomiting [7]. The intensity of pain can vary, but it is generally sharp and persistent. Because the symptoms can resemble other gynecological or abdominal conditions, imaging tests are essential to establish the diagnosis. Ultrasound (ultrasound) with Doppler is the primary imaging modality for detecting ovarian torsion, although normal Doppler flow does not completely rule out the possibility of ovarian torsion [8]. In this case, the results of the ultrasound examination are obtained as shown in figure 1 below:

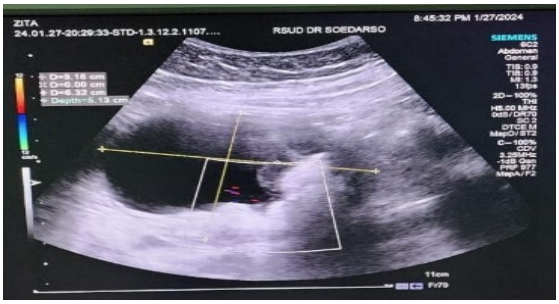

Figure 1: Ultrasound shows a 9,16 x 6.32 cm left ovarian cyst with a 5,13 cm depth.

The results of laboratory examinations on patients were obtained leukocytosis of 12.97. Leukocytosis, which is an increased number of white blood cells, is a common finding in patients with ovarian torsion. This condition is a gynecological emergency characterized by rotation of the ovaries and/or fallopian tubes, which can lead to ischemic changes to necrosis if not treated immediately. The main symptom of ovarian torsion is acute abdominal pain, often accompanied by nausea and vomiting [9]. About 56% of patients with ovarian torsion also develop leukocytosis, which indicates the body's inflammatory response to the ischemic process that occurs [10]. In this case report an increase in the number of white blood cells, such as WBC 12.97, is a typical sign of an inflammatory response that occurs in ovarian torsion. This leukocytosis reflects the body's reaction to ischemic and necrotic processes due to twisted ovaries [11].

The main treatment of ovarian torsion is a surgical procedure to restore blood flow and prevent ovarian necrosis. The procedure can be laparoscopic or laparotomy, with the main goal of deteriorating the ovaries so that organ function is maintained [6,7]. If the ovaries still seem to be worth maintaining, even if they initially appear ischemic or necrotic, detortion is still recommended because this organ has the potential to recover once blood flow returns to normal [12]. In some cases, oophoropexy or ovarian fixation is

performed to prevent torsion recurrence by placing the ovaries in a more stable position. However, this procedure is not always completely successful in preventing repeated torsion [7].

In this case report, the patient underwent a laparotomy and a sinistra salpingoophorectomy for cyst removal. This action is carried out because the ovaries and fallopian tubes on the left side are no longer maintainable, possibly due to ischemia or necrosis that occurs due to ovarian torsion. Although ovarian desorption and rescue efforts are often top priorities, in cases where the tissue is no longer viable, oophorectomy is a safer option to prevent further complications, such as infection or peritonitis. Laparoscopic and laparotomy procedures for the treatment of ovarian torsion can be seen in figure 2 below:

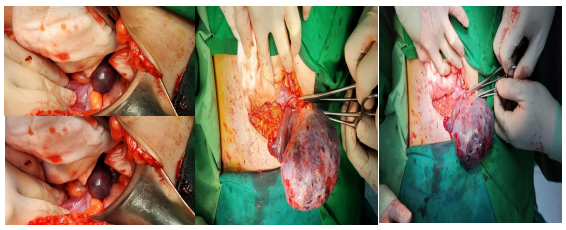

Figure 2: laparotomy procedures for the management of ovarian torsion.

Histopathological examination of intraoperative specimens shows that the cystic tissue is identified as a mature cystic teratoma. Mature cystic teratoma (MCT), also known as dermoid cysts, is the most common type of ovarian germ cell tumor, especially in women of reproductive age [13]. MCTs are made up of well-differentiated tissues and come from at least two of the three germ layers, namely the ectoderm, mesoderm, and endoderm. Ectodermal components, such as hair, teeth, and sebaceous material, are the most common findings in these cysts [13].

The prognosis of surgery in the management of ovarian torsion is good. The prognosis of ovarian torsion is generally good if diagnosed and treated quickly. Early intervention is essential to maintain ovarian function and prevent complications such as necrosis and infertility. Studies show that conservative management, i.e. ovarian depletion and preservation, often yields good results, with many patients returning to normal ovarian function. However, long-term monitoring is necessary to observe the possibility of atrophy or recurrence [14].

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Although these patients can actually give birth normally because there is no uterine injury, a cesarean section is still performed. The reason is the condition of dry amniotic fluid, which is when the amniotic fluid in the uterus is drastically reduced or depleted before labor begins. Amniotic fluid is very important for the fetus because it protects against external pressure, allows movement, and plays a role in the development of the lungs and digestive system. If the amniotic fluid is depleted or barely present, this condition can lead to serious complications during labor.

CONCLUSION

Most ovarian cysts during pregnancy are benign, asymptomatic, and can go away on their own, so conservative management is the first choice. Surgical procedures are performed on symptomatic patients, either by open or laparoscopic surgery, which can be performed in all trimesters without affecting the outcome of the pregnancy. Ovarian torsion is a rare complication characterized by acute pelvic pain, pelvic mass, and nausea and vomiting. Surgical decisions should be made immediately based on clinical suspicion. Laparoscopy is a safe method for the diagnosis and management of ovarian torsio. Conservative surgeries, such as destortion with cystectomy or fenestration, can preserve ovarian function as well as lower the risk of recurrence.

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CONFLICTS OF INTEREST

The author states that there is no conflict of interest related to the research, writing, or publication of this article.

Ethical considerations

This case report was conducted in accordance with ethical standards and institutional guidelines. Informed consent was obtained from the patient for the use of her medical information for academic and publication purposes. All patient data have been anonymized to protect privacy and confidentiality. No experimental procedures were performed, and the case was managed following standard clinical care protocols.

AUTHORS' CONTRIBUTION

Four Authors contributed to the conception and design of the study. (CTPR) and (MS) were responsible for data acquisition. Data analysis and interpretation were performed by (DS) and (CTPR). The manuscript was drafted by (MI) and (DS), and critically revised for important intellectual content by all four authors. All authors approved the final version of the manuscript.

REFERENCES

1. Bhagat N, Gajjar K. Management of ovarian cysts during pregnancy. Obstet Gynaecol Reprod Med. 2022 Sep;32(9):205–10.
2. Farhat I Ben, Bergaoui H. Un cas de kyste ovarien géant au cours de la grossesse. Pan Afr Med J. 2024;47.
3. Fang YMV, Gomes J, Lysikiewicz A, Maulik D. Massive luteinized follicular cyst of pregnancy. Obstetrics and gynecology. 2005 May;105(5 Pt 2):1218–21.
4. Condous G, Khalid A, Okaro E, Bourne T. Should we be examining the ovaries in pregnancy? Prevalence and natural history of adnexal pathology detected at first-trimester sonography. Ultrasound in Obstetrics & Gynecology. 2004 Jul 16;24(1):62–6.
5. Moreira M, Almeida P, Jardim O, Guerra N, Moura P. Quisto do ovário fetal: a propósito de um caso clínico abordado por aspiração intra-uterina. Diagnóstico Prenatal. 2011 Jul;
6. Bent C, Thomson B, Kief-Garcia M. Ovarian torsion after hysterectomy and oophoropexy. Radiol Case Rep. 2021 Jul;16(7):1646–9.
7. Koteshwara S, Bohra D. Rare Case of Ovarian Preserving Surgery in Unmarried Woman with a Case of U/L

Salpingo-oophorectomy and Its Management: Oophoropexy. World Journal of Laparoscopic Surgery. 2022 May 1;15(2):167–9.
8. Ahluwalia A, Giga S, Afaghi M. The double bladder sign: Challenges in early sonographic diagnosis of ovarian torsion. Radiol Case Rep. 2022 Nov;17(11):4188–92.
9. Zhu TW, Li XL. Ovarian Torsion: A Review of the Evidence. Obstet Gynecol Surv. 2024 Aug;79(8):484–92.
10. Shadinger LL, Andreotti RF, Kurian RL. Preoperative Sonographic and Clinical Characteristics as Predictors of Ovarian Torsion. Journal of Ultrasound in Medicine. 2008 Jan;27(1):7–13.
11. Hatata MA, Soliman DA, Hosni KA. Approach to ovarian torsion with corpus luteum removal in early pregnancy. Qatar Med J. 2023 Sep 23;2023(3).
12. Sasaki KJ, Miller CE. Adnexal Torsion: Review of the Literature. J Minim Invasive Gynecol. 2014 Mar;21(2):196–202.
13. Srisajjakul S, Prapaisilp P, Bangchokdee S. Imaging features of unusual lesions and complications associated with ovarian mature cystic teratoma. Clin Imaging. 2019 Sep;57:115–23.
14. Lasso Betancor CE, Garrido Pérez JI, Murcia Pascual FJ, Granero Cendón R, Vargas Cruz V, Paredes Esteban RM. [Ovarian torsion. long-term follow-up of the black-bluish ovary after laparoscopic detorsion]. Cir Pediatr. 2014 Jan;27(1):26–30.
15. Beaunoyer M, Chapdelaine J, Bouchard S, Ouimet A. Asynchronous bilateral ovarian torsion. J Pediatr Surg. 2004 May;39(5):746–9.