

## A Rare Case Managed with Misdiagnosis in Third Trimester of Pregnancy: Ovarian Torsion

 Neslihan BAYRAMOĞLU TEPE<sup>a</sup>,  
 Hilmi TAŞDEMİR<sup>a</sup>

<sup>a</sup>Department of Obstetrics and Gynecology, Gaziantep University Faculty of Medicine, Gaziantep, TURKEY

Received: 07.06.2018  
Received in revised form: 20.07.2018  
Accepted: 07.08.2018  
Available online: 05.03.2019

Correspondence:  
Neslihan BAYRAMOĞLU TEPE  
Gaziantep University Faculty of Medicine,  
Department of Obstetrics and Gynecology,  
Gaziantep, TURKEY  
drneslihantepe@gmail.com

**ABSTRACT** Ovarian torsion (OT) is one of the real gynecological emergencies. Up to one-fifth of OT cases develop during pregnancy. Although it is seen especially in the first trimester, it can also develop in the third trimester. OT in the third trimester of pregnancy is a rare condition that can lead to midline laparotomy and birth of a preterm baby with caesarean section (CS). It is associated with nonspecific symptoms such as lower abdominal pain, nausea and vomiting in pregnancies and is often misdiagnosed as appendicitis or preterm labor. A case of acute abdomen resulting from OT at the right ovary, in the third trimester of pregnancy described. The importance of prompt action in the case of OT is emphasized to achieve success in their management for both mother and fetus. We aimed to emphasize the importance of evaluating the adnexa when performing obstetric ultrasonography, together with the diagnosis and management of OT in pregnancy.

**Keywords:** Ovarian torsion; pregnancy; ultrasonography

The incidence of ovarian torsion (OT) in reproductive age is 9.9/100.00, and up to one-fifth of cases develop during pregnancy.<sup>1</sup> The most common causes of OT in pregnancy are corpus luteum cysts and ovarian hyperstimulation syndrome (OHSS).<sup>2</sup> Although it is seen especially in the first trimester, it can rarely develop in the third trimester and lead to midline laparotomy and birth of a preterm baby with caesarean section (CS).<sup>3</sup> It is associated with nonspecific symptoms such as lower abdominal pain, nausea and vomiting and is often misdiagnosed as appendicitis or preterm labor.<sup>1</sup>

In this case report, we aimed to emphasize the importance of evaluating adnex when performing obstetric ultrasonography (USG) in third trimester, together with the diagnosis and management of OT in pregnancy.

### CASE REPORT

The gravida 2, parity 0, abortion 1 pregnant woman, aged 21 was referred to the emergency room from another hospital with the complaint of right lower quadrant pain. The patient's anamnesis showed a right lower quadrant pain which started suddenly and had been ongoing for three days, accompanied by nausea and vomiting. At another hospital, urinary tract infection was considered and antibiotic treatment was given to the patient.

The patient had a history of thrombophilia therefore received cleaxane® 0.6 1x1 and multivitamin supplements for her pregnancy. There was no change in her defecation habits and she did not have vaginal bleeding or a fever. Physical examination revealed rebound and guarding in the lower right quadrant. Vital findings were stable. Her blood count showed hemoglobin (Hb) levels 10.8 g/dL, white blood cells  $11.3 \times 10^3/\mu\text{L}$ . There were no abnormalities in the blood biochemistry values and urine analysis.

USG showed intrauterine fetal heart rate positive singleton pregnancy compatible with 36 weeks. In addition, the right adnexal area showed a 97 x 78 mm solid, non-blooded, torsion compatible image (Figure 1). The left ovary was polycystic. The patient's non-stress test (NST) was normal and corticosteroid was applied for fetal lung maturation at another medical center. As a result of the patient's symptoms, acute abdomen and primarily right ovarian torsion was assumed. Hospitalization and surgical treatment were planned. Due to the fact that gestational weeks were advanced (36 w), corticosteroid was applied for fetal lung maturation and surgery could start preterm labor, a CS was planned and laparotomy was decided upon at the same session instead of laparoscopy in our case.

CS was performed under spinal anesthesia and a male baby with an apgar of 8/9 was delivered. The right ovary was twisted around itself twice and the approximate dimensions were 10x10cm. The left ovary was polycystic. The right ovary was detorsed (Figure 2). After 10-15 minutes the color of the right ovary started to go pale. So the ovary was thought to be functional and oophorectomy was not needed. In addition, the patient was young and the desire of fertility continued. Postoperative follow-up was uneventful and the patient was discharged on the second day.

## DISCUSSION

OT is the fifth most common encountered surgical emergency.<sup>4</sup> It can be difficult to recognize during pregnancy because the symptoms of OT are non-specific.<sup>5</sup> OT is rare in the third trimester due to the

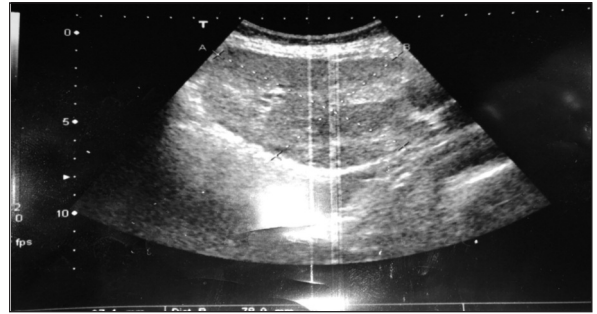


FIGURE 1: Transvaginal ultrasonography shows the right adnex with an enlarged ovary.

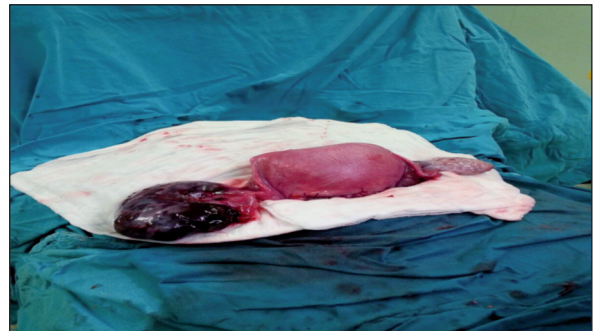


FIGURE 2: Intraoperative image of right ovarian torsion and left polycystic ovary.

restriction of the movement of the ovarian pedicle with the growing uterus, but should be considered in the differential diagnosis of pregnant patients with acute abdomen.<sup>6</sup>

The right adnexa is more mobile because the right utero-ovarian ligament is longer. For this reason, OT is more visible on the right side. Our patient had the torsion on right adnexa. The disappearance of acute pain is a serious finding as it can be a sign of possible ovarian necrosis.<sup>7</sup>

In a study involving 39 patients who underwent surgical and pathologic OT diagnosis, the most common symptoms were abdominal pain (100%), vomiting (85%) and leukocytosis (56%).<sup>8</sup> Our case presented with pain in the lower right quadrant and vomiting. However, her leukocyte count was normal.

USG is the preferred imaging method for the diagnosis of OT. An USG is also valuable for assessing the fetus, as well as showing the affected ovary. The most common ultrasonographic finding in the case of OT is ovarian enlargement. For pa-

tients who display clinical symptoms and show ovarian enlargement on sonography, the consideration of OT should be possible in differential diagnosis. Another ultrasonographic finding is an image of an edematous ovary accompanied by cyst or mass in the ovary. Doppler flow cytometry may increase diagnostic efficiency by adding USG.<sup>8</sup> Usually, Doppler confirms interruption of blood flow in the affected ovary. The observation of blood flow in the ovary does not exclude OT diagnosis. This is because, the rate of false negativity is high in examining Doppler.<sup>8</sup> The sensitivity and specificity of Doppler examination is controversial in OT diagnosis. In a study involving 199 patients, the sensitivity and specificity of absence of an abnormal Doppler venous flow were 100% and 97%, respectively.<sup>8</sup> However, in another study of 78 patients, sensitivity and specificity were determined as 43.8% and 91.7%, respectively, in case of lack of blood flow in the Doppler. In another series, 60% of 21 patients who were surgically diagnosed with OT were found to have a normal Doppler examination.<sup>8</sup> In our case, Doppler examination revealed no blood flow but there was ovarian enlargement in the right ovary.

Information on the management of OT in pregnancy is limited by the small size of patients involved in most studies, but the treatment is mostly laparoscopy with cyst aspiration or alternatively laparotomy.<sup>8</sup> The main concern regarding laparoscopy in particular in the third trimester is limited surgical field due to uterine size and possible fetal effects due to CO<sub>2</sub> insufflation.<sup>9</sup> The management option depends on the gestational week as far as the size of the affected ovary, its position and the presence of an adnexial mass are concerned.<sup>8</sup> Due to the fact that gestational weeks were advanced (36 w) and surgery could start preterm labor, a CS was planned and laparotomy was decided upon at the same session in our case. The survival rate of fetuses or embryos after laparotomy or laparoscopy for ovarian torsion is not well defined, but is found positive in series outcomes.<sup>8</sup> Both open and laparoscopic surgery is more hazardous because of the increased hypercoagulability during the progressive week of gestation. In addition, although

laparoscopic surgery can be performed every gestational week, there is a risk of uterine injury due to the size of the pregnant uterus, inadequate view of the surgical field, and risk of premature birth in the advanced gestational weeks.<sup>10</sup> Therefore, not only fetal parameters but also adnexa should be examined on sonography in all trimesters. Thus, probable ovarian cysts will be detected early and managed appropriately. This will prevent emergency surgical intervention and preterm delivery.<sup>10</sup>

OT during pregnancy is difficult to diagnose due to its nonspecific symptoms. The low prevalence of OT and the focus on fetal structures rather than adnexa during routine ultrasonographies performed especially in the third trimester decrease the frequency of OT diagnosis. OT should be kept in mind in pregnant patients with acute abdominal pain and with ovarian enlargement in USG.

#### **Informed Consent**

*Written informed consent was obtained from patient who participated in this study.*

#### **Source of Finance**

*During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.*

#### **Conflict of Interest**

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.*

#### **Authorship Contributions**

**Idea/Concept:** Neslihan Bayramoğlu Tepe; **Design:** Neslihan Bayramoğlu Tepe; **Supervision/Consultancy:** Neslihan Bayramoğlu Tepe; **Data Collection and/or Processing:** Hilmi Taşdemir; **Analysis and/or Interpretation:** Neslihan Bayramoğlu Tepe; **Source Browsing:** Hilmi Taşdemir; **Written by Makalenin:** Neslihan Bayramoğlu Tepe; **Critical Review:** Neslihan Bayramoğlu Tepe; **Resources and Funding:** Hilmi Taşdemir; **Materials:** Hilmi Taşdemir.

## REFERENCES

1. Yuk JS, Kim LY, Shin JY, Choi DY, Kim TY, Lee JH. A national population-based study of the incidence of adnexal torsion in the Republic of Korea. *Int J Gynaecol Obstet.* 2015;129(2):169-70. [[Crossref](#)] [[PubMed](#)]
2. Hasiakos D, Papakonstantinou K, Kontoravdis A, Gogas L, Aravantinos L, Vitoratos N. Adnexal torsion during pregnancy: report of four cases and review of the literature. *J Obstet Gynaecol Res.* 2008;34(4 Pt 2):683-7. [[Crossref](#)] [[PubMed](#)]
3. Pansky M, Feingold M, Maymon R, Ben Ami I, Halperin R, Smorgick N. Maternal adnexal torsion is associated with significant incidence of recurrence. *J Minim Invasive Gynecol.* 2009;16(5):551-3. [[Crossref](#)] [[PubMed](#)]
4. Hibbard LT. Adnexal torsion. *Am J Obstet Gynecol.* 1985;152(4):456-61. [[Crossref](#)]
5. Becker JH, de Graaff J, Vos MC. Torsion of the ovary: a known but frequently missed diagnosis. *Eur J Emerg Med.* 2009;16(3):124-6. [[Crossref](#)] [[PubMed](#)]
6. Krishnan S, Kaur H, Bali J, Rao K. Ovarian torsion in infertility management-missing the diagnosis means losing the ovary: a high price to pay. *J Hum Reprod Sci.* 2011;4(1):39-42. [[Crossref](#)] [[PubMed](#)] [[PMC](#)]
7. Boyd CA, Riall TS. Unexpected gynecologic findings during abdominal surgery. *Curr Probl Surg.* 2012;49(4):195-251. [[Crossref](#)] [[PubMed](#)] [[PMC](#)]
8. Morton MJ, Masterson M, Hoffmann B. Case report: ovarian torsion in pregnancy-diagnosis and management. *J Emerg Med.* 2013;45(3):348-51. [[Crossref](#)] [[PubMed](#)]
9. Bouquet de Joliniere J, Dubuisson JB, Khomsi F, Fadhlaoui A, Grant G, Ali NB, et al. Laparoscopic adnexectomy for ovarian torsion during late pregnancy: case report of a non-conservative treatment and literature analysis. *Front Surg.* 2017;4:50. [[Crossref](#)] [[PubMed](#)] [[PMC](#)]
10. Weiner E, Mizrachi Y, Keidar R, Kerner R, Golan A, Sagiv R. Laparoscopic surgery performed in advanced pregnancy compared to early pregnancy. *Arch Gynecol Obstet.* 2015;292(5):1063-8. [[Crossref](#)] [[PubMed](#)]