Ovarian Torsion in the Course of Labor and its Surgical Management by Detorsion in the Course of Caesarean Section: Case Report

Doğum Eylemi Esnasında Over Torsiyonu ve Sezaryen Esnasında Bunun Cerrahi Olarak Detorsiyone Edilmesi

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Geliş Tarihi/*Received:* 10.05.2013
Kabul Tarihi/*Accepted:* 27.10.2013

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ABSTRACT Ovarian torsion in pregnancy is a rare event occurring approximately 1 in every 5000 live births and it is a surgical emergency that usually managed by salpingoophorectomy or detorsion. Early recognition and intervention could be valuable to preserve ovarian reserve and to prevent the development of further complications. This condition usually occurs at first or second trimester in pregnancy and it is a difficult diagnosis to establish or even to be suspicious about. However ovarian torsion in late pregnancy especially in the course of labor is more infrequent and diagnosis is even thornier. Uneasy nature of labor could lead physicians to miss the diagnosis. Thereby abdominal pain in the course of labor that anywise diverges from the pain caused by normal labor processes requires high level of suspicion also in regard of a newly developed ovarian torsion amongst several other possible causes of acute abdomen. Here we present a case of ovarian torsion developed in the course of labor and its surgical management by detorsion and fixation in the course of caesarean section.

Key Words: Ovarian cysts; ovarian function tests; torsion abnormality; pregnancy; abdomen, acute

ÖZET Gebelikte over torsiyonu yaklaşık 5000 canlı doğumda bir görülen nadir bir durumdur ve çoğunlukla salpingooferektomi ya da detorsiyon ile tedavi edilen cerrahi bir acildir. Erken tanı ve müdahale over rezervinin korunması ve komplikasyon gelişiminin önlenmesi açısından önemli olabilmektedir. Bu durum genellikle gebeliğin birinci ve ikinci trimesterlerinde görülmekte olup üçüncü trimesterde özellikle de doğum eylemi esnasında ortaya çıkması oldukça nadirdir ve bu gibi durumlarda tanı konması bilhassa zorlaşmaktadır. Doğum eyleminin gürültülü doğası tanının atlanmasına sebebiyet verebilmektedir. Dolayısıyla doğum eylemi esnasında normal doğum süreçlerinde ortaya çıkan ağrıdan farklı bir karın ağrısı paterni, akut batının çok sayıda diğer nedeni yanında yeni gelişen bir over torsiyonu açısından da yüksek derecede kuşku duyulmasını gerektirmektedir. Burada doğum eylemi esnasında gelişen bir over torsiyonunun sezaryen esnasında detorsiyone edilerek tedavi edildiği bir olgu sunulmuştur.

Anahtar Kelimeler: Over kistleri; ovaryum fonksiyon testleri; torsiyon anormalliği; gebelik; karın, akut

Turkiye Klinikleri J Case Rep 2014;22(4):256-9

Ovarian torsion is defined as partial or complete rotation of the ovarian pedicle on its long axis thus compromising venous or lymphatic drainage and/or arterial blood supply, and it was estimated to occur one in every 5000 live births.[1,2] This is a surgical emergency that morbidity could be prevented or at least reduced by early intervention. Due to infrequent encounter with this situation and abundant amount of differential

diagnosis, recognition or suspicion of this pathology could be delayed. Natural painful course of labor as in this case, may further obscure the symptoms that renders even more difficult to establish a pre-diagnosis.

CASE REPORT

A 27 years old spontaneously conceived nulliparous woman with 38 weeks 3 days of gestation admitted to clinic owing to amniotic fluid leakage that has started 2 hours before admission. Patient has not been describing abdominal/pelvic pain on initial admission and her past medical history was unremarkable as well as her obstetric history. Obstetric ultrasonography revealed a vertex presenting fetus with normal fetal anatomic measurements and reduced amount of amniotic fluid. Placenta was observed on anterior wall of uterus in a natural appearance. No abnormal appearance was detected at adnexal regions. Speculum examination revealed gross leakage of amniotic fluid with pooling at posterior fornix. Gold test was found positive. In digital vaginal examination, cervix was found to be 4 cm dilated and 70% effaced. Fetal head was found to be engaged at level of -3. Patient was accepted to be in active phase of labor. Monitorization of fetal heart trace and uterine contractions started. Patient started to suffer from abdominal pain 30 minutes later. However toco trace as well as uterine palpations were unable to detect any uterine contractions. Her abdomen was soft and non-tender. 2 hours later, digital vaginal examination was revealed no progression in cervical dilatation. Spontaneous decelera- tions were observed on fetal heart trace and caesarean section was performed for fetal distress. A healthy 2860 g male baby was born with apgar scores of 8 and 9. Following delivery of the baby right ovary was observed to be enlarged edematous and congested indicating for torsion and infarction of the ovary (Figure 1). Furthermore a cystic structure measured approximately 7 cm was also observed in the right ovary. Cystic structure was excised; hair and bony structures were observed besides the yellowish greasy content within the cyst suggesting a dermoid cyst (Figure 2). Congested ovary was detorsioned and fixated to the lateral aspect of the uterus covered by a single layer of absorbable cellulose haemostatic sheet (Surgicel/Ethicon 360) (Figure 3). Histo-pathologic examination was performed for the cyst and the specimens of biopsies taken from ovary. Pathology report was confirmed the diagnosis of dermoid cyst, torsion and some localized infracted regions in the ovary.

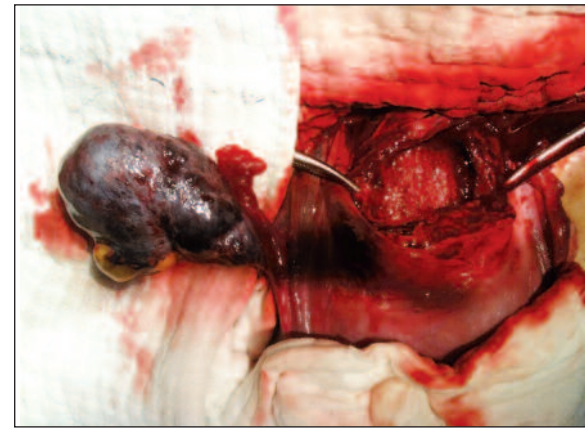

FIGURE 1: Congested right ovary and lower segment uterine incision.

FIGURE 2: Mature cystic teratoma excised from the patient's ovary.

6 months after the surgery size of the detorsioned ovary was measured within normal limits. Blood flow and numerous amounts of antral follicles were observed in the detorsioned ovary suggesting a healthy appearance (Figure 4). Anti-mullerian hormone (AMH) level was found as 3,05ng/ml. This value corresponds between 25th-50th percentiles according to her age.

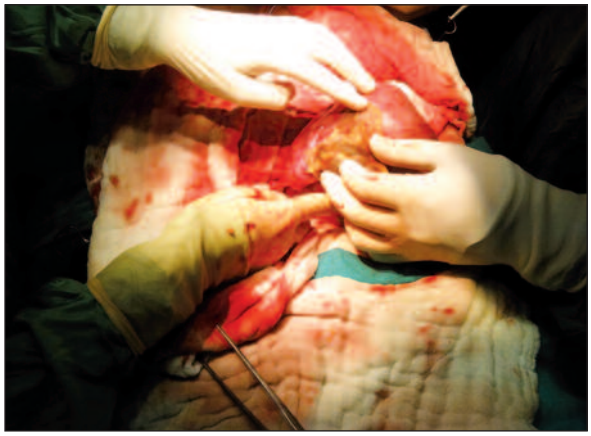

FIGURE 3: Following detorsion of the torsioned ovary, it was covered by a single layer of surgical and fixated to the lateral aspect of uterine corpus.

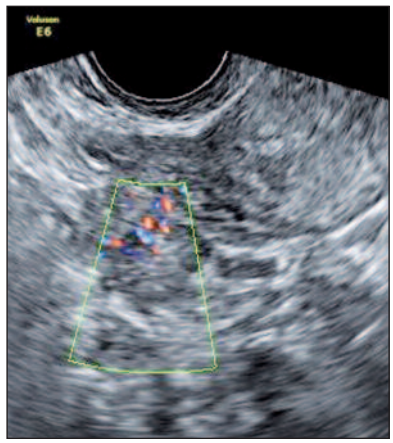

FIGURE 4: Numerous preantral and small antral follicles were observed as well as the blood flow in detorsioned ovary after 6 months. Detorsioned ovary could be observed on lateral aspect of uterus.

DISCUSSION

Ovarian torsion in pregnancy is a rare condition that could be seen 1 in every 5000 deliveries.[1] Approximately 12-25% of adnexal torsions occur during pregnancy.[3] Right adnexa are more commonly affected as in this case, probably due to the surplus space for mobility left by the absence of sigmoid colon.[4,5] Most of the cases (60%) are diagnosed between 10. and 17. weeks of gestation and approximately 30% of these cases are associated with mature cystic teratomas.[6] In a recent rewiev, Goh et al. evaluated the outcomes of ovarian masses ≥5 centimeter that persist throughout the pregnancy. They demonstrated that 8,5% of these cases resulted with ovarian torsion during pregnancy.[7] Risk of ovarian torsion increases in association with the size of accompanying ovarian cyst. Cysts that have sizes ranges from 6 to 8 cm constitute the highest risk in regard of ovarian torsion.[8] Ovarian cysts smaller than 6 cm are not considered as risk factors for torsion during pregnancy.[9] Doppler ultrasonography could be used to diagnose torsion however existence of blood flow does not eliminate the possibility of torsion. A positive doppler blood flow has a known false negativity rate about 60% for both pregnant and non-pregnant cases.[5,10] Ultrasonography may reveal increase in ovarian size due to congestion, ovarian stromal heterogeneity, peripheral ovarian cystic structures and mid-line shift in ovary in case of torsion. But none of these findings are reliable enough alone to diagnose or eliminate adnexal torsion. Furthermore normal ultrasonographic appearance of twisted ovaries seen relatively more common in adnexal torsions occurred at third trimester in comparison to torsions occurred at first trimester of pregnancy.[11] Currently the exact diagnosis of torsion could only be made by surgery. Characteristic symptoms of ovarian torsion are as follows: acute abdominal/pelvic pain and tenderness (81% and 97% respectively), gastro-intestinal symptoms (60-70%), mild leukocytosis (this finding is usually obscured by physiologic mild leukocytosis in pregnant cases thereby it usually does not assessed as elevated to arouse suspicion in a pregnant patient).

Treatment choices of this condition were limited to salpingo-oopherectomy until 20 years ago. A novel more conservative approach such as detorsion of the ovary, is available in current practice. Even though some studies indicating an increase in ischemia/reperfusion injury in detorsioned ovaries.[12,13] this is the most reasonable choice for a young patient as it could be applied. A recent animal study conducted by Ozler et al. demonstrated significant decreases in AMH levels and preantral/small antral follicle counts after surgical detorsion of intentionally induced ovarian torsion in rats.[14] In our case 6 months after detorsion surgery we found AMH levels within 25.-50. per-

centiles according to patient's age. A 3 hours period of torsion was demonstrated to be sufficient to cause ischemia/reperfusion damage.[15,16] In this case surgical intervention was performed 2 hours after the initial symptom. This early intervention could have been prevented the injury however we do not have the preoperative levels of AMH, so after 6 months it could be significantly decreased even if it is still in normal range. A study conducted on women underwent laparoscopic endometrioma stripping demonstrated a sharp decline in AMH levels 1 week after surgery to 30% of preoperative levels. However 3 months after surgery AMH levels were as high as 65% of the preoperative levels. Some possible mechanism hypothesized to explain this late increment in AMH levels. Activation of remaining follicles, hyperactivation of remaining granulose cells, reperfusion of ovaries and most interestingly inflammation induced follicle regeneration are proposed mechanisms.[17] Even though we do not have the preoperative AMH level value, similar processes could have taken part.

In conclusion, despite its rare occurrence ovarian torsion should be kept in mind for women in labor. This diagnosis could be confused with prolonged latent phase as well as many other causes of acute abdomen in pregnancy. Timely recognition of this pathology has great importance in consideration of benefits of early intervention particularly in this young, fertility demanding population.

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