

# Ovarian torsion in the third trimester of pregnancy: A case report

<sup>1</sup>Nonye-Enyidah E1, <sup>1</sup>Lebara D, <sup>2</sup>Eli S.

<sup>1</sup>Department of Obstetrics and Gynaecology, Rivers State University Teaching Hospital, Port Harcourt.

<sup>2</sup>Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital.

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**Abstract-** Background: Ovarian torsion is rare in the third trimester of pregnancy. It is likely to present with non-specific symptoms and can often be misdiagnosed as appendicitis or preterm labour. It is one of the most common gynaecologic surgical emergencies. Although the exact cause is unknown, a few risk factors predispose to ovarian torsion.

**Objective:** To report a rare case of ovarian torsion occurring in the third trimester of pregnancy.

**Methods:** The case note of the patient was retrieved and the management reviewed. Relevant review of the literature on the subject was also done.

**Case report:** She was a 20 year old primigravida referred from a primary health care centre. She presented at the accident and emergency unit of Rivers State University Teaching Hospital (RSUTH) at 32 weeks gestation with progressively increasing right lower abdominal pain of 8 hours duration. There were no nausea, vomiting and fever. There was marked tenderness with guarding at the region of right iliac fossa. She had emergency exploratory laparotomy and right ovariectomy for a right gangrenous ovary secondary to torsion. She did well post operatively and was discharged home to continue with antenatal care. Subsequent antenatal care remained uneventful until she had a spontaneous vaginal delivery of a live female baby at term. Mother and baby were discharged in good clinical state.

**Conclusion:** Ovarian torsion in pregnancy is a gynaecologic emergency. A high clinical suspicion, prompt diagnosis and management are vital in preventing complications.

**Index Terms-** Ovarian torsion; Third trimester; Laparotomy; Ovariectomy.

## I. INTRODUCTION

Ovarian torsion (OT) is the partial or complete rotation of ovary around its vascular axis or supporting structures that may cause an occlusion in the ovarian blood and lymphatic flow with subsequent stasis, venous congestion, haemorrhage and ischaemic necrosis. It is rare in pregnancy especially in the third trimester. Incidence of OT in pregnancy is between 1 and 10/10,000 pregnancies<sup>1</sup>. It presents in the third trimester in 10-22% of cases<sup>1</sup>. Ovarian torsion is three times commoner with ovarian cyst. Functional cysts and benign neoplasm account for about 94% and majority of these are corpus luteum cysts of pregnancy. The woman presents with non specific symptoms of lower abdominal pain, nausea and vomiting which can easily be

mistaken for appendicitis, pyelonephritis, cholecystitis, nephrolithiasis or preterm labour. This can lead to delay in diagnosis and surgical management resulting in loss of the ovary as well as fetal compromise<sup>2-4</sup>.

The risk factors of OT are ovarian masses and cysts, assisted reproductive technology, previous pelvic surgery, ovarian hyperstimulation, pregnancy and congenital malformation. The key factor to the management of OT is to perform detorsion as quickly as possible to preserve the ovary<sup>5-7</sup>.

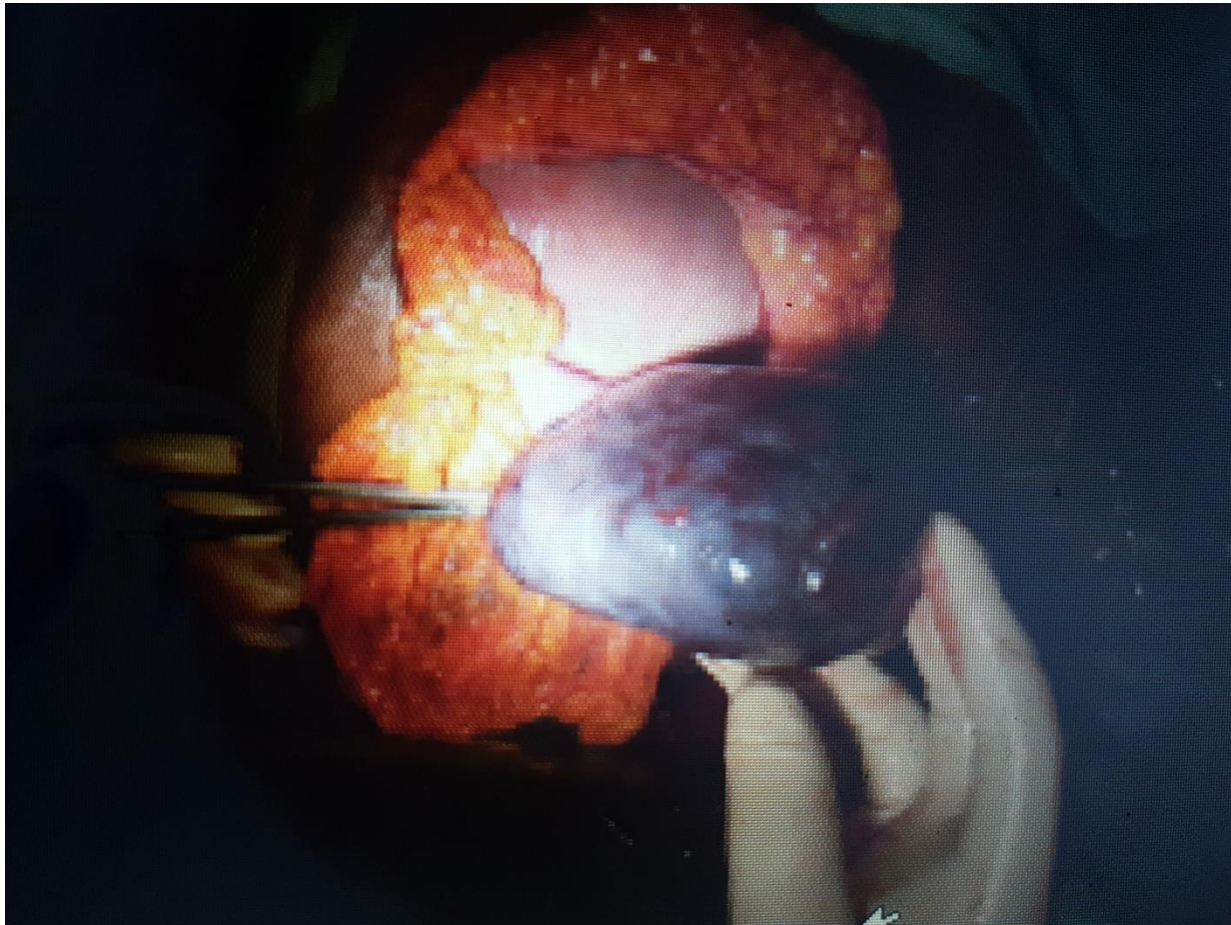
**Case report:**

Mrs. DD was a 20 year old primigravida with tertiary level of education. She was a housewife referred to our facility from a primary health care centre at 32 weeks gestation with 8 hours history of right lower abdominal pain. The pain was sudden in onset, colicky, severe and progressively increasing in intensity and frequency restricting her movement. There was no known relieving factor. There was no history of trauma, drainage of liquor, bleeding per vaginam, urinary symptoms, fever, headache, dizziness, nausea and vomiting. She still felt the fetal movements. On examination, she was in painful distress, not pale, anicteric, afebrile (36.1°C) and there was no pitting pedal oedema. Her chest was clinically clear, pulse rate was 94b/min and blood pressure was 110/60mmHg. The abdomen was enlarged and moved with respiration. The uterine size was 30 weeks. There was tenderness at right iliac region marked at McBurney's point. Rebound tenderness was positive. Fetal heart rate was heard and it was regular at 140b/min. Vaginal examination revealed that she was not in labour. A diagnosis of acute abdomen at 32 weeks gestation in a primigravida was made to rule out acute appendicitis, accidented ovarian cyst, ovarian torsion and urinary tract infection.

She was admitted. Urgent packed cell volume was 35%, retroviral screening for HIV 1&2 was sero-negative, white blood cell count was 8500/uL and urinalysis was normal. Serum electrolytes, urea and creatinine were normal. Ultrasound scan showed tenderness elicited on probe contact of the right iliac fossa. There was an active viable 3<sup>rd</sup> trimester cyesis and complex ovarian cyst in the right iliac fossa measuring 19.7 x 7.7 x 6.0 cm with torsion of the right ovary. The appendix appeared normal. She was counseled on her clinical condition. One unit of blood was grouped and cross matched. She was placed on nothing by mouth and she received one litre of dextrose saline, parenteral antibiotics, betamethazone and analgesics. Urethral catheter was passed and retained.

She subsequently had an emergency exploratory laparotomy and right ovariectomy (with minimal handling of the uterus) for a right gangrenous ovary secondary to torsion. Intra operative findings were gravid uterus, twisted right gangrenous ovarian mass and a normal left ovary and tubes. The appendix was normal. Estimated blood loss with haemoperitoneum was 400ml. The removed ovary was sent for histopathology which revealed an intense intraparenchymal haemorrhage with areas of necrosis and cystic spaces lined by flattened granulosa cells. There were also mixed inflammatory cell filtrates in keeping with torsion of ovarian follicular cyst. Post operatively she was continued on the

intravenous fluid, parenteral antibiotics, analgesics and salbutamol for 48 hours and was converted to oral drugs. Her packed cell volume on the second day after surgery was 30%. Post operative period was unremarkable and she was discharged home on the 5th post operative day and advised to register for antenatal care in our facility. The antenatal care subsequently remained uneventful until she had a spontaneous vaginal delivery of a live female baby at term. The baby weighed 3.1kg and the Apgar score was good. Both mother and baby were discharged home in good clinical state.



## II. DISCUSSION

Torsion of the ovary in the third trimester of pregnancy is rare as the compressive effect of the gravid uterus restricts the mobility of the ovarian pedicle<sup>7</sup>. However this case presented has demonstrated that it can occur and needs to be considered as a differential diagnosis when a patient presents with an acute abdomen in pregnancy. It is believed that 10% of ovarian cysts discovered during pregnancy will require operation soon after diagnosis, further 2% will require intervention later on in pregnancy because of painful complications<sup>8</sup> as was seen in this case. The risk factors of ovarian torsion seen in this patient were pregnancy and ovarian cyst causing increase in ovarian size. For this case, making a diagnosis of ovarian torsion in the third trimester of pregnancy clinically was challenging because clinical

examination was affected by the anatomical displacement of the abdominal organs by the enlarged uterus.

Ultrasound scan is the imaging examination of choice in the diagnosis of ovarian torsion<sup>9</sup>. When done in the first and second trimesters of pregnancy, it should not only concentrate on fetal parameters but evaluate the adnexae. Ovarian cysts detected then, should be managed promptly to prevent emergency procedures and complications<sup>8</sup>. Ultrasound scan of the ovaries done in the third trimester is more difficult, delaying diagnosis resulting in increased maternal and fetal morbidity<sup>10</sup>. A reduced blood flow during colour Doppler should not rule out the suspicion of ovarian torsion. In this case presented, Doppler ultrasound scan done detected the ovarian torsion and not acute appendicitis because right acute appendicitis can easily be mistaken for right ovarian torsion.

When compared to the left, the right ovary appears to be more likely to torsion as was seen in this case. This is because the right utero-ovarian ligament is longer than the left and the presence of sigmoid colon helps to prevent torsion of the left ovary<sup>11,12</sup>. If diagnosis is made early and the adnexa is haemorrhagic, simple detorsion is sufficient for the blood supply to return. Also depending on the degree of ischaemia and necrosis, the blood supply might not return resulting in its removal<sup>11,12</sup>. The right ovary that was removed in this patient was gangrenous; even after detorsion and waiting for a while, the blood supply to the ovary did not return.

For the surgeon, it is usually a difficult decision to perform an abdominal surgery during pregnancy because of the risks associated with surgery. Although conservative treatment has been proposed during pregnancy, surgery is the treatment of choice once ovarian torsion is suspected<sup>7</sup>. The surgical approach during pregnancy is controversial and this depends on the availability of resources, the skill of the surgeon and the patient's suitability<sup>13</sup>. Several reports show that laparoscopy is as safe as laparotomy with the additional advantages of minimally invasive surgery<sup>14-16</sup>. Patients, who present in the third trimester like our patient, are more likely to undergo laparotomy with minimal handling of the uterus rather than laparoscopy because of limited exposure allowed by the gravid uterus. Laparotomy and ovariectomy were done for the patient without post operative complications.

### III. CONCLUSION

Ovarian torsion should be considered as a differential diagnosis in acute abdomen in pregnancy. Prompt diagnosis and management will aid in conserving the ovary and preventing maternal and fetal morbidity.

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### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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### AUTHORS

**First Author** – Nonye-Enyidah E, Department of Obstetrics and Gynaecology, Rivers State University Teaching Hospital, Port Harcourt.

**Second Author** – Lebara D, Department of Obstetrics and Gynaecology, Rivers State University Teaching Hospital, Port Harcourt.

**Third Author** – Eli S, Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital.

Correspondence: Dr Nonye-Enyidah Esther I, E mail: hernsi@yahoo.com, +2348033410619