**Heterotropic Gestation with Ruptured Ectopic Pregnancy: Exploratory Laparotomy with Total Left Salpingectomy and Subsequent Spontaneous Vaginal Delivery**

**ABSTRACT**

INTRODUCTION:

Ectopic pregnancy is a frequent gynaecological emergency, particularly in cases of sudden rupture, and remains the primary cause of maternal death during the first trimester, contributing to approximately 10%–15% of all maternal fatalities. Prompt and precise diagnosis is essential to minimise health risks and mortality, as well as to lower the financial burden associated with repeated emergency care, hospitalisation, urgent or extensive surgical interventions, and subsequent assessments or treatments for infertility.

**CASE SUMMARY:** A case of heterotopic gestation with a ruptured left tubal ectopic gestation with a co-existing intra-uterine pregnancy in a 29-year-old gravida 2 para 1 (one alive), managed at LAUTECH teaching hospital, Ogbomoso. She presented with a sudden onset of severe lower abdominal pain, which became generalised, abdominal distension and dizziness following a period of amenorrhea of 8 weeks. She had an exploratory laparotomy on account of a ruptured left tubal ectopic with subsequent spontaneous vaginal delivery of a live fetus at term.

**OUTCOME:** The patient was managed successfully, had an uneventful postoperative period, vaginal delivery and a follow-up visit.

**CONCLUSION:** Heterotropic pregnancy is a rare condition, though on the rise due to increased uptake of assisted conception. The ectopic component can be life-threatening and should be borne in mind in any woman presenting with this condition. Emergency laparotomy is recommended for prompt management.

**KEYWORDS:** Ectopic pregnancy, Heterotropic gestation, total Left salpingectomy, hemoperitoneum, South-Western Nigeria.

**INTRODUCTION**

Ectopic gestation is the implantation of the product of conception outside the uterine endometrial lining. it is a common gynaecological emergency, especially when ruptured acutely and is the leading cause of maternal mortality in the first trimester, accounting for 10%–15% of all maternal deaths.1 Early and accurate detection of ectopic pregnancy is critical to decrease morbidity and mortality and reduce costs associated with repeated emergency department visits, hospitalisation, emergency and radical surgery, and future infertility evaluation and treatment.2 It is also a cause of fetal wastage and has been associated with recurrence and impairment of subsequent fertility.[3](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3751381/#b3-ijwh-5-515)There is a confirmed rise in the incidence of ectopic pregnancy in our environment and the world over, 4,5 with a recognised associated increased incidence of salpingitis, an increase in ovulation induction and assisted reproductive technology and more tubal sterilisation.1 An improved sensitivity and specificity of diagnostic tests and effective screening modalities have also played a role.

Etiological factors can be broadly classified as congenital (Tubal hypoplasia, tortuosity, sacculation, diverticula, accessory ostia, partial stenosis) or acquired factors (inflammatory or surgically induced adhesions). Puerperal sepsis, post-abortal sepsis, appendicitis, and the use of intrauterine contraceptive devices have been identified as sources of pelvic infection[6](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3751381/#b3-ijwh-5-515)and hence, inflammatory acquired causes. Other etiological risk factors include pelvic surgeries, endometriosis, diethylstilbestrol exposure in utero, chromosomally abnormal embryo, use of progesterone-only pills, cigarette smoking, history of previous abortion, previous history of ectopic pregnancy, infertility and age above 35 years.7 However, ectopic pregnancy can also occur without any obvious risk factors.7

Overall, there is a decreasing fatality rate and an increased awareness of the serious nature of the disease, with early diagnosis and effective treatment responsible for this decrease.8

The commonest location of ectopic gestation is at the fallopian tube (>90%), with about 95% of it at the ampullary region, of which only 2% are interstitial. Other sites are: ovarian, cervical, abdominal (primary and secondary) and intraligamentary1. Time of rupture can occur as early as 6-8 weeks in isthmic ectopic or as late as 12-16 weeks in Interstitial ectopic pregnancy. Interstitial ectopic, though rare, presents most dramatically with severe intra-abdominal bleeding, which could be fatal from exsanguination if not diagnosed and treated early.3 Heterotropic gestation is the presence of multiple gestations, with one being present in the uterine cavity and the other outside the uterus, commonly in the fallopian tube and uncommonly in the cervix or ovary. The prevalence is about 1 in 20,000 pregnancies.

**CASE PRESENTATION**

A 29-year-old gravida two para one (one alive) was referred to the LAUTECH teaching hospital, Ogbomoso, from a state hospital as a case of suspected ruptured ectopic pregnancy with an intrauterine gestation. She had been amenorrheic for 8 weeks with presumptive pregnancy symptoms; however, pregnancy was not confirmed by a pelvic scan. She presented with a sudden onset of severe lower abdominal pain, which started in the preceding 5 days and had progressively worsened. It was initially left-sided but had become generalised. There was associated progressive abdominal distension,

The dizziness started about a day before the presentation, but no fainting attacks or loss of consciousness. There was no history of abdominal trauma and no attempts at termination of pregnancy, use of progestin-containing contraceptives or pelvic surgery. Has a family history of twinning. She does not use ovulation induction medications.

On examination, she was anxious and in painful distress, pale, anicteric, afebrile and dehydrated with no pedal oedema. Her respiratory rate was 34 cycles per minute, with her lung fields clinically clear. Her pulse rate was 118 beats per minute, regular with normal volume and with a blood pressure of 70/50 mmHg. The heart sounds were normal. There was no murmur.

Her abdomen was uniformly distended. It moved with respiration. There was generalised tenderness and guarding. The bowel sounds were hypoactive. The vulva and the vagina were normal. The cervix appeared grossly normal looking with no discharge or bleeding seen. The cervical os was closed. Cervical excitation tenderness was positive, with adnexal tenderness present; the pouch of Douglas was full and tender.

Packed cell volume was 18%, Serum Beta HCG was Positive, and Blood group was A Rhesus D positive. Had four units of blood cross-matched for her.

Abdominopelvic scan (plus Transvaginal): Had a scan done which revealed a heterogenous left adnexa mass, haemoperitoneum, with a significant amount of collections in the pouch of Douglas and Morison’s pouch. Viable intrauterine gestation at 8 weeks 2 days. A conclusion of heterotrophic gestation, ruptured ectopic gestation with hypovolemic shock was made.

**DISCUSSION**

**MANAGEMENT**

Intravenous access was secured with 2 wide-bore size 16G cannula, and 1.5 litres of normal saline solution was infused rapidly. Her vital signs were monitored and charted. An in-dwelling urethral catheter was passed for monitoring of the urinary output. Had a non-pneumatic anti-shock garment applied. The clinical findings, diagnosis and the need for an urgent exploratory laparotomy were explained to the patient and her husband. Informed consent for surgery was obtained from her husband. Couples were also counselled on the possibility of intrauterine gestation resulting in a miscarriage. The anaesthetist was informed, and she subsequently had an emergency laparotomy with total Left salpingectomy.

**PROCEDURE**

The patient was placed in the supine position. The abdominal skin was cleaned with chlorhexidine solution, iodine and methylated spirit. Sterile drapes were applied. The abdominal cavity was entered through a midline infra-umbilical incision via sharp and blunt dissections. The haemoperitoneum was suctioned. Examination revealed a ruptured left ampullary ectopic pregnancy with a healthy-looking right tube. Kocher’s clamps were applied to include the entire length of the left fallopian tube and adjacent mesosalpinx. The right tube was inspected and found to be healthy-looking.

The left fallopian tube was then excised, and adequate haemostasis was secured. Peritoneal lavage was done with a warm normal saline solution. The abdominal wound was closed in layers. The skin was closed with interrupted stitches. She was transfused with two units of blood intra-operatively after the application of Kocher’s clamps, and she had two more units of blood transfused post-operatively on the ward. The excised specimen was sent for histological examination. Operative findings were about 3 litres of haemoperitoneum, with an abortus lying in the peritoneal cavity attached to the rupture site. There was a rupture at the left ampullary region of the tube with ongoing bleeding. The right tube and both ovaries were normal.

**POST-OPERATIVE MANAGEMENT**

The patient’s recovery from anaesthesia was uneventful, with her vital signs stable. Intravenous infusion of 5% Dextrose saline alternating with normal saline was continued at the rate of 1 litre 8 hourly for 48 hours. Intravenous Ceftriaxone 1 gram 12 hourly and intramuscular pentazocine 30mg 6 hourly were administered for 48 hours. Urinary output was monitored and charted hourly with nil per oral maintained. Cyclogest 400mg vaginal pessary daily was commenced.

On the second postoperative day, her vital signs remained stable, and her fluid intake and output were satisfactory. She had passed flatus, and bowel sounds were present. She was commenced on graded oral fluid intake, which was well tolerated. The urinary catheter was removed. Her packed cell volume was 29%. Intravenous drugs were changed to oral; Cefuroxime tablets 500mg twice daily, paracetamol tablets 1 gram three times daily and haematinics.

On the 5th post-operative day, wound healing was satisfactory. She was discharged on the 5th postoperative day with a packed cell volume of 29% on oral haematinics. Explanations of the operative findings were given with implications on the present intrauterine pregnancy and the future pregnancies emphasised. A 2-week appointment for the gynaecological clinic was given.

The patient had no complaints. The abdominal wound had healed well. General and systemic examinations did not reveal any abnormality, and her packed cell volume was 30%. A pelvic scan done at the presentation showed a viable intrauterine gestation. She was still on the cyclogest vaginal pessary.

A detailed explanation of the indication of the surgery she had was reemphasised to her. The implications of her future fertility and the possibility of a recurrence were also explained to her. She booked pregnancy early, complied with follow-up and subsequently had a spontaneous vaginal delivery at LAUTECH teaching hospital, Ogbomoso, at term.

**HISTOLOGY REPORT**

A segment of the left fallopian tube with excised uterine tissue that weighed 20g and measured 8.2 by 2.5 centimetres was received. The lumen of the tube was filled with blood clots.

Microscopy: The section of the fallopian tube showed a predominantly lymphoplasma cellular infiltration of the oedematous and congested wall of the tube. The lumen contains chorionic villi lined by proliferative trophoblastic cells and blood clots. Diagnosis.: Left fallopian tube, ectopic gestation.

**COMMENTARY**

The occurrence of a high rate of ruptured ectopic pregnancies with hemodynamic compromise seen in our environment buttresses the fact that most people have poor health-seeking behaviours.8 In addition, the majority of afflicted patients present this way in our environment as facilities are not readily available, under-equipped and under-staffed.

The presence or combination of clinical symptoms, including amenorrhea, vaginal bleeding, dizziness/fainting attack, shoulder-tip pain and diarrhoea.

Pallor, tachypnoea, abdominal tenderness with rebound, hypotension, tachycardia, and shock as signs of hemodynamic compromise could be present and highly suggestive. This confirms the uniformity of the clinical presentation of ectopic pregnancy worldwide. 9-10 Essential for early diagnosis are a combination of a high index of suspicion, awareness of risk factors, aetiological factors, and symptoms and signs, no matter how minimal.3 However, none of these symptoms is pathognomonic.

Abdominal ultrasound is useful in evaluating patients with suspected ectopic pregnancy, mainly by documenting the presence or absence of an intrauterine pregnancy at a beta-human chorionic gonadotropin (β-hCG) value of about 6,500 mIU/mL. 1,10 In this case, she was within the common age range of 20- 30 years, which is the maximum period of fertility, with low socioeconomic status, and had a classical presentation with the common symptoms (amenorrhea and abdominal pain) with signs of hemodynamic instability. Rupture had occurred before she presented, and she required urgent surgical intervention.

**Conclusion**

In developing countries like Nigeria, where the majority of these patients present late with rupture and hemodynamic compromise, emergency surgical interventions remain the mainstay of treatment.11 Immediate resuscitation by ensuring airway patency, breathing and circulation are first-line management instituted before surgery. Grouped and cross-matched blood must be made available. Intraoperative auto-transfusion is an option for blood salvage when the necessary facilities and expertise are available. 12

Open surgery (laparotomy) or Minimal access (laparoscopic) surgery can be done, which could either be conservative salpingotomy, salpingostomy or an outright radical salpingectomy.3 Conservative surgeries may be recommended in well-selected patients. Salpingectomy is recommended in women presenting with ruptured ectopic gestation and hemodynamic instability. Hysterectomy or wedge resection of the cornual ectopic can be carried out in severe cases.13

As a previous ectopic is a risk for another ectopic gestation, the role of an early pregnancy unit within health facilities is of marked importance towards reducing morbidity and mortality from ectopic gestation.11 Hence, the need to counsel such a patient to report as soon as she misses her period so that assessment of the site of the pregnancy can be confirmed as early as possible.

**Consent**

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, manuscript.

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