Ectopic pregnancy complicates 0.25%–2% of all pregnancies and is one of the most common causes of first-trimester maternal mortality in developing countries due to late diagnosis. Spontaneous ruptured bilateral tubal ectopic pregnancies are extremely rare, with very limited data on its occurrence in the literature. In a spontaneous conception, the preoperative diagnosis is difficult to make but an important one to consider at surgery for presumed unilateral tubal ectopic pregnancy because missing the diagnosis can lead to mortality. We report a case of a 38-year-old multipara with a history of amenorrhea of 8 weeks and 2 days and complaints of vaginal spotting of 4-day duration and sudden onset of abdominal pain of 4 h before presentation. On admission, a preoperative diagnosis of ruptured left tubal ectopic pregnancy was made following ultrasound findings of left adnexal mass and hemoperitoneum. However, both fallopian tubes were found to harbor ectopic gestational sac with bleeding rents on the tubal walls at surgery. She subsequently had exploratory laparotomy and bilateral salpingectomy with good outcome. In low-resource settings, ectopic pregnancy is associated with poor maternal outcome due to late presentation. Diagnosis of ruptured bilateral tubal ectopic pregnancy is difficult before surgery. Therefore, examination of both tubes at laparotomy for ectopic pregnancy should be routine and mandatory to avoid missing the diagnosis.

Keywords: Bilateral tubal gestation, ruptured, spontaneous

**INTRODUCTION**

Ruptured ectopic pregnancy is a life-threatening obstetrical emergency, and it remains an important cause of maternal mortality in the first trimester of pregnancy.\(^1\) It requires early diagnosis and prompt intervention to prevent maternal mortality.\(^1\)

Bilateral ectopic pregnancy following natural conception is the rarest form of ectopic pregnancy with an estimated incidence of 1 per 200,000 live birth.\(^2\) Hemorrhage from ectopic pregnancy is still the leading cause of maternal death in the first trimester and accounts for 4% of all pregnancy-related deaths, despite improved diagnostic methods leading to earlier detection and treatment.\(^2\) Simultaneous spontaneous rupture of bilateral tubal ectopic pregnancy is a rare occurrence in clinical practice, and only two cases have been reported in the literature.\(^3,4\) Unilateral ruptured ectopic pregnancy carries more risk. Unilateral ruptured tubal pregnancy with a contralateral unruptured tubal pregnancy is even more hazardous, especially if the unruptured tube goes unnoticed by the operating surgeon. Bilateral ruptured tubal pregnancies should logically carry the gravest prognosis of the tubal pregnancies.\(^3\)

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Most patients with bilateral tubal pregnancies have similar risk factors to those with unilateral ectopic pregnancy, including tubal corrective surgery, tubal sterilization, intrauterine device, documented tubal pathology, infertility, assisted reproductive technology, previous genital infection, smoking, prior abortion, multiple sexual partners, and prior cesarean delivery. Spontaneous bilateral ectopic pregnancy is not suspected in the absence of artificial reproductive technology. The ultrasound has limitations in the diagnosis. As a result, bilateral ectopic pregnancy is mostly encountered unsuspected at laparotomy. Conservation of fertility becomes an issue as bilateral salpingectomy is often required in the presence of rupture of both fallopian tubes. Effort should be made to see the integrity of contralateral adnexa on ultrasound in all cases of ectopic pregnancy.

To the best of our knowledge, we report the third case of spontaneous ruptured bilateral tubal ectopic pregnancy that was managed at our institution.

**CASE REPORT**

We report a case of Mrs. GO, a 38-year-old Para 2 with 2 living male children whose last menstrual period was May 22, 2019. She presented to the gynecological emergency department on July 19, 2019, with a history of amenorrhea of 8 weeks and 2 days. Her complaints on admission were vaginal spotting of 4-day duration and sudden onset of abdominal pain of 4 h. There were associated dizziness and fainting attacks but no loss of consciousness. She was brought to the hospital due to increasing fainting attacks. There was no history of use of hormonal contraception, treatment of pelvic inflammatory diseases, or use of fertility-enhancing drugs. She had a history of two cesarean sections in her previous deliveries.

On examination, she was in painful distress and pale. Her radial pulse rate was 100 beats per min, and the blood pressure was 100/60 mmHg. Her abdomen was distended and tender on palpation with positive rebound tenderness and guarding and absent bowel sounds. Her vulva was blood stained. Speculum examination showed a bulging posterior fornix and blood trickling from the cervical os. Bimanual pelvic examination revealed a bulky uterus with cervical excitation and bilateral adnexal fullness and tenderness. The pouch of Douglas was full. A bedside serum pregnancy test was positive. Abdominopelvic ultrasound scan showed an empty uterus with thickened endometrium and left adnexal mass with a significant amount of free fluid in the abdomen and pelvis and normal right adnexa.

A diagnosis of ruptured left tubal ectopic pregnancy was made. The diagnosis was explained to her. Intravenous access was secured in both arms, and blood samples were taken for laboratory investigations. Her hemoglobin concentration was 8 g/dl, and 3 units of whole blood were grouped and cross-matched and made available for her. She was resuscitated and taken up in emergency for exploratory laparotomy and partial left salpingectomy after written informed consent was obtained. Intraoperatively, there was a mass in the ampullary part of the left fallopian tube with bleeding at the ruptured area. A partial left salpingectomy was done. On inspection of the right fallopian tube, another mass in approximately the same location with a bleeding rent, as on the left, was seen [Figure 1]. A partial right salpingectomy was carried out. A hemoperitoneum of about 1.2 l was evacuated. The uterus and ovaries were normal. She was transfused 2 units of whole blood intraoperatively. She had an unremarkable postoperative recovery and was discharged on the 4th postoperative day.

At follow-up visit at the gynecological clinic, she had no complaint and her general condition was stable. Histopathological examination showing chorionic villi and trophoblasts in both tubes confirmed the diagnosis of bilateral tubal ectopic pregnancy with evidence of rupture on both sides. She was counseled on the implication of her surgery on the future reproductive capacity and to present to the fertility clinic for treatment if she desires pregnancy in the future.

**DISCUSSION**

Bilateral ectopic pregnancy is rare. It occurs in 1 out of every 200,000 spontaneous pregnancies and ranges from 1 out of every 725–1580 ectopic...
A rare case of ruptured bilateral tubal ectopic pregnancy

In vitro fertilization–embryo transfer.

The index patient had bilateral ectopic pregnancy from spontaneous conception. Worldwide, the incidence of ectopic pregnancy is on the increase, but the morbidity and mortality associated with it have been on the decrease in the developed countries. This is not so in the developing countries, where majority present late with rupture and hemodynamic instability. The index patient was hemodynamically unstable at presentation.

More than 95% of ectopic pregnancies occur in the fallopian tube, with the ampulla being the most common site, as was found in the index case where there was bilateral ectopic pregnancy in the ampulla of both fallopian tubes. Other sites include the isthmus, fimbria, interstitium, ovary, abdominal cavity, and cesarean section scar. The risk factors for ectopic pregnancy are pelvic inflammatory disease, previous ectopic pregnancy, multiple sexual partners, history of infertility, conception following ovulation induction/assisted reproductive technology, abnormality of the fallopian tube, and in utero exposure to diethylstilbestrol. The risk factor identified in Mrs. GO was a history of cesarean sections in the two previous deliveries.

Several theories have been propounded to explain the mechanisms for the occurrence of a bilateral tubal pregnancy. These mechanisms include simultaneous multiple ovulation, sequential impregnation, and transperitoneal migration of trophoblastic cells from one extrauterine pregnancy to the other tube with implantation there. The diagnostic criteria for bilateral tubal pregnancy were first laid out by Fishback who suggested that there should be a description of fetal parts or fetus as well as placental parts from both the tubes. This was later modified by Norris, who stated that microscopic demonstration of choriionic villi in both tubes was sufficient for the diagnosis. Thus, in most cases, the diagnosis remains essentially surgical.

Despite the rarity of bilateral ectopic pregnancy, it must be entertained in the differential diagnosis because the consequences of missing it are likely to be catastrophic. It should be included in the differential diagnosis of acute abdominal pain presenting days, or, as in some cases, weeks following treatment for a presumed singleton ectopic pregnancy. The clinical presentation of bilateral ectopic pregnancy is unpredictable. It bears no unique clinical features to distinguish it from a unilateral ectopic pregnancy. As the diagnosis of an ectopic pregnancy often rests on the absence of an intrauterine pregnancy rather than direct visualization of the ectopic itself, ultrasonography cannot be relied on to make the diagnosis of a bilateral ectopic pregnancy. A review of the literature showed that the preoperative diagnosis of bilateral ectopic was missed in majority of the cases. Most had a preoperative diagnosis of ectopic, presumed unilateral, made based on the beta-human chorionic gonadotropin and transvaginal ultrasound. The most common method of diagnosing the second ectopic is by direct inspection of the contralateral tube in the operation room.

Mrs. GO presented with the classical features of ruptured ectopic pregnancy such as amenorrhea, spot vaginal bleeding, sudden-onset abdominal pain, dizziness, and fainting spells. On admission, ultrasound finding of a left adnexal mass and hemoperitoneum raises the suspicion of ruptured tubal ectopic pregnancy. However, the diagnosis of ruptured bilateral tubal ectopic pregnancy was made intraoperatively during inspection of the contralateral fallopian tube. The diagnosis of bilateral tubal pregnancy is usually made intraoperatively as in the index case and other cases reported in the literature, thus underscoring the importance of identifying and closely examining both tubes at the time of surgery for ectopic pregnancy.

Management of ectopic pregnancy may be surgical, medical, or expectant. Management is influenced by the clinical state of the patient, the site of the ectopic gestation, whether it is ruptured or unruptured, if the patient is desirous of fertility and availability of facilities. The standard treatment for ruptured ectopic pregnancy is surgery. This may be through laparotomy or laparoscopy. The surgical procedure done through these routes may be salpingectomy which is radical or linear salpingotomy which is conservative. Laparotomy with salpingectomy was done in the case presented because both tubes were ruptured and bleeding. Conservative management could be expectant or medical. Medical management with methotrexate is preferred for patients with unruptured ectopic pregnancies who are hemodynamically stable. These patients must be well motivated and meet the criteria for these options.

Expectant management follows the natural history of ectopic pregnancy. However, expectant management is associated with high failure rate.

The dilemma does not end here as the chances of recurrent ectopic pregnancy in the future are increased after an ectopic pregnancy. A case of ectopic pregnancy has been reported after bilateral salpingectomy. This highlights the need of high suspicion in cases of abdominal pain with amenorrhea even after bilateral salpingectomy or tubal ligation. The implications for
future fertility after bilateral salpingectomy for these patients are significant, and the only option for this patient is assisted reproductive techniques.

In conclusion, we have reported a very rare case of simultaneous spontaneous rupture of bilateral tubal ampullary ectopic pregnancy following natural conception. This condition poses health and social challenges because of its effect on the reproductive capacity of the affected women. Our report builds on available literature because of very limited data on its occurrence and management. We advocate immediate clamping of the fallopian tube with the ectopic mass, followed by inspection of the contralateral fallopian tube before proceeding with the salpingectomy as this sequence may help prevent further blood loss and determine the extent of tubal surgery.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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