

Spontaneous Bilateral Tubal Ectopic Pregnancy: A Case Report and a Comprehensive Review

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Abstract

An ectopic pregnancy occurs when a fertilized ovum implants outside the uterine cavity. It has an estimated incidence of 1-2% and is the most common surgical emergency in women of reproductive age. Fallopian tubes are the most common site for ectopic pregnancy. The incidence of ectopic pregnancy has been increasing in recent years because of the increasing use of Assisted Reproductive Technology, use of Intrauterine Devices, Pelvic Inflammatory Disease, and a history of previous ectopic pregnancy or tubal surgery. Bilateral tubal pregnancies following natural conception account for the rarest form of ectopic pregnancy. We report a case of a 27-years-old primigravida with spontaneous bilateral tubal ectopic pregnancy managed successfully without any complications. Bilateral tubal ectopic pregnancy should be suspected in patients presenting with the clinical triad of amenorrhea, abdominal pain and vaginal bleeding, despite its rarity in spontaneous conception.

Keywords: Ectopic pregnancy; Emergency; Fallopian tubes; Laparoscopy; Ultrasonography

Declarations

Ethics approval and consent to participate: Not applicable

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INTRODUCTION

An ectopic pregnancy (EP) occurs when a fertilized ovum implants outside the uterine cavity. It has an estimated incidence of 1-2% and is the most common surgical emergency in women of reproductive age. The fallopian tubes are the most common site for EP [1]. About 2.7% of pregnancy-related deaths is due to ruptured ectopic pregnancy [2]. The incidence of EP is increasing in recent years because of the increasing use of Assisted Reproductive Technology (ART), use of Intrauterine Devices (IUDs), Pelvic Inflammatory Disease (PID), and a history of previous EP or tubal surgery [3]. Bilateral tubal ectopic pregnancy (BTP) is a very rare type of EP, with a reported incidence of 1/200,000 uterine pregnancies and 1/725– 1580 EPs [3]. BTP following natural conception account for the rarest form of ectopic pregnancy [4]. The most common presenting complaints of EPs are amenorrhea, abdominal pain with or without vaginal bleeding [5]. Diagnosis of EPs is typically confirmed through serial measurements of β -HCG and Ultrasonography (US). However, laparoscopy remains the gold standard for diagnosis [6]. Clinically, differentiating BTP from unilateral tubal EP is challenging as most of the cases are incidentally detected during surgery. Due to the significant risk of morbidity and mortality, early diagnosis of BTP is important for appropriate management [7].

We report a case of a 27-year-old primigravida with spontaneous bilateral tubal ectopic pregnancy who was managed successfully with no complications.

CASE

A 27-year-old woman, primigravida at seven weeks period of gestation presented with amenorrhea for one and half months, dull-aching lower abdominal pain and minimal vaginal bleeding for two days. Her past medical history was unremarkable with no history of previous surgery, contraceptive use, ovulation induction procedures or any drug intake. On examination, her vitals were within normal limits. On per-abdominal examination, mild tenderness was noted in the left iliac fossa and hypogastric region without rebound tenderness. On per-vaginal examination, cervical motion tenderness was positive, the cervical-os was closed with left forniceal fullness. The bedside urine pregnancy test done was positive. The beta-human chorionic gonadotropin (β -hCG) was found to be 4664.5 IU/mL at day one and 7663.4 IU/mL at day three and serum progesterone level was 8.11 μ g/L. Transvaginal sonography (TVS) revealed right adnexal mass with fetal pole alongside an empty

uterine cavity and thickened endometrial lining (9.6mm) (Fig. 1). Based on left-sided clinical findings and right-sided ultrasonographic evidence, a provisional diagnosis of a bilateral tubal ectopic pregnancy following spontaneous conception was made. Diagnostic laparoscopy confirmed bilateral tubal ampullary pregnancies with characteristic bluish discoloration of both the tubes and right tube adhered to the omentum (Fig 2). Left salpingectomy with right salpingostomy was performed. Histopathology confirmed chorionic villi with few trophoblastic cells. The post-operative course of the patient was uneventful. Her serum β -hCG declined to 963.15 IU/mL at the time of discharge. She was followed up until her serum β -hCG was normal.



Figure 1: Grey-scale ultrasound image of the pelvis showing unruptured ectopic pregnancy in right adnexa (green arrow) with fetal pole and empty uterine cavity with thickened endometrium (green line)

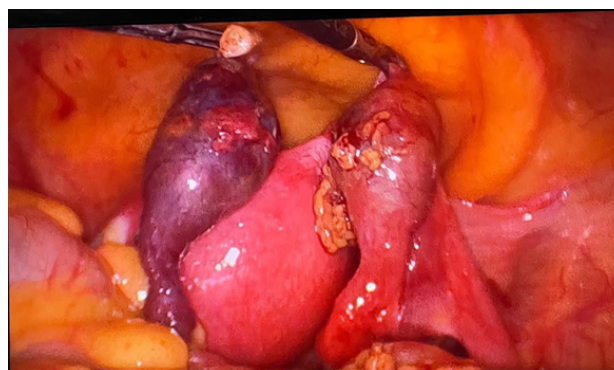


Figure 2: Diagnostic laparoscopy showing the distended and bluish ampullary region of the right and the left fallopian tube. No free fluid was noted. The uterus looks normal

DISCUSSION

In recent decades, the incidence of tubal pregnancy has been on the rise due to the growing utilization of ARTs and ovulation induction procedures. Additionally, other risk factors for extra-uterine pregnancy include a history of sexually transmitted infections, multiple sexual partners, intrauterine devices use, smoking, hormonal contraception, pelvic surgery, previous ectopic pregnancy, history of infertility, fallopian tubes damage, and in utero exposure to diethylstilbestrol [8]. Spontaneous bilateral tubal pregnancy (BTP) is the rarest form of EP in the absence of ovulation induction procedures and ARTs [1]. Our case had no history of ARTs or ovulation-inducing procedures, or other predisposing risk factors for tubal pregnancy. Moreover, the conception was spontaneous.

The most common site for EP is the fallopian tube (95% of cases), with ampullary region being the most common site (70%), followed by isthmus (12%), fimbria (11%) and interstitial (2%); 3% occur in ovary [4]. In our case both the tubes showed ampullary implantation.

The pathophysiology behind the occurrence of BTP is still unclear. However, several theories suggested include: simultaneous multiple-ovulation, sequential impregnation, and transperitoneal migration of trophoblastic cells from one extrauterine pregnancy to the other site [8].

Classical presentation of an EP includes triad of amenorrhea, vaginal bleeding and abdominal pain [6]. On examination, abdominal tenderness is a common, with 33% to 50% of the patients having a palpable adnexal or cul-de-sac mass and typical uterine pregnancy changes [9]. Cervical motion tenderness (cervical scream) is also present in some of the cases [10]. However, it is difficult to differentiate bilateral TP from unilateral TP [11]. Our patient exhibited left forniceal fullness cervical motion tenderness.

Diagnosis of an EP requires a combination of positive pregnancy tests, serial serum β HCG, and transvaginal ultrasound [5]. Serum β HCG measurements can be detected eight days after the surge of luteinizing hormone. Serum progesterone can be used if the levels of serum β HCG and sonographic findings are inconclusive [12]. US can detect EP with a positive predictive value of 80% visualized by the presence of a gestational sac with a yolk sac or embryo within the fallopian tube [11]. An EP can be diagnosed on US, based on the identification of an adnexal mass with the absence of a gestational sac in the uterine cavity [13]. The vast majority (90.9 %) of women who present with an ectopic pregnancy can now be diagnosed reliably using Trans Vaginal Sonography as a single stand-alone test [14]. However, due to symptoms overlap and the imaging limitations, BTP is frequently diagnosed at the time of surgery rather than preoperatively. Direct inspection of the contralateral tube during surgery remains vital for diagnosing second ectopic in BTP [11].

Management of the patient with EP depends on the patient's clinical state, the site of EP, ruptured status, the patient's willingness to preserve fertility and available facilities. The options include medical, surgical, or expectant approaches [15]. Regardless of whether an EP is spontaneous or induced, good management of a BTP depends on early presentation, a high index of suspicion, a detailed ultrasound scan, precise intraoperative examination of the contralateral tube, histological confirmation, and appropriate patient counseling [4]. Medical management by the administration of Methotrexate may be applied in suspected unilateral cases meeting the eligibility criteria with close monitoring with serial β HCG until there is complete resolution of pregnancy. However, due to the limitation of the US for the definitive diagnosis of a BTP and the lack of studies regarding the dosage and efficacy of the Methotrexate for the treatment of a BTP, medical management does not seem suitable for a suspected BTP [11].

Surgical intervention is required for suspected ruptured EP, hemodynamically unstable patients, and cases in which medical management is contraindicated [11]. Laparoscopic salpingostomy or salpingectomy is the gold standard treatment modality for bilateral tubal ectopic pregnancy. However, exploratory laparotomy may be required in hemodynamically unstable patients [13]. Though laparoscopic salpingostomy is preferred, bilateral salpingectomy is advised in cases with bleeding or bilateral severely damaged tubes. [11]. Post salpingostomy careful follow-ups with serial measurement of β -HCG are mandatory to rule out the risk of persistent trophoblast until complete resolution [9, 11]. Our patient underwent diagnostic laparoscopy with salpingectomy on left side and salpingostomy on the right side. While performing surgical intervention, it must be taken into consideration that, detailed and thorough exploration of the whole pelvic cavity is essential to prevent a missed diagnosis and the risk of reoperations [7, 11].

CONCLUSION

Due to the clinical challenge to differentiate between bilateral and unilateral tubal ectopic pregnancy, bilateral tubal ectopic pregnancy should also be suspected in patients presenting with the classical triad of amenorrhea, abdominal pain and vaginal bleeding, even in the setting of spontaneous conception, despite its rarity. As EP is associated with high mortality and maternal complications, timely diagnosis and appropriate management are crucial. In our presented case, the early suspicion of bilateral tubal EP based on clinical and radiological features and detailed intraoperative inspection of bilateral tubes enabled successful management of the case with no complications.

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