

Tubal Stump Ectopic Pregnancy with Acute Abdomen: A Rare Case Report

Cenk Sosyal¹, Özlem Erten¹

¹Kütahya Health Sciences University, Department of Gynecology and Obstetrics, Kütahya, Turkey.

Abstract

Ectopic pregnancy, characterized by the implantation of the gestational sac outside the uterine cavity, is a grave condition. The objective of this study is to report a case of recurrent ectopic pregnancy in the residual site of the same fallopian tube, which had undergone unilateral salpingectomy due to ectopic pregnancy five years prior. Despite its rarity in the literature, tubal stump ectopic pregnancy poses higher risks of maternal mortality and morbidity compared to other types of tubal ectopic pregnancies. It is important to note that a history of salpingectomy does not exclude the possibility of ipsilateral recurrent ectopic pregnancy. Furthermore, this is the first documented case of stump tubal ectopic pregnancy from Turkey.

Keywords: Ectopic pregnancy, tubal stump pregnancy, acute abdomen, vaginal bleeding

Introduction

Ectopic pregnancy occurs in 1-2% of all pregnancies and is a major contributor to maternal mortality during the first trimester (1). The ampullary region of the fallopian tube is the most frequent site of ectopic pregnancy occurrence. The condition presents with a diverse range of clinical manifestations, ranging from asymptomatic cases incidentally detected through laboratory tests to life-threatening situations accompanied by hemorrhagic shock (2, 3).

The incidence of ectopic pregnancy has risen in recent decades, primarily attributed to factors such as advanced maternal age, pelvic inflammatory disease, and the widespread use of assisted reproductive technology (4). Ipsilateral ectopic pregnancy in the tubal stump following total or partial salpingectomy is an exceptionally rare occurrence. Its atypical location can lead to diagnostic delays, while intra-abdominal bleeding poses a life-threatening risk to the patient (5). Therefore, it is crucial for clinicians to acknowledge that salpingectomy does not eliminate the possibility of tubal stump pregnancy, which represents another form of ectopic pregnancy (6). This article presents a case of spontaneous ectopic pregnancy in the residual fallopian tube after unilateral salpingectomy, which was originally performed due to an ectopic pregnancy.

Case Report

The patient, a 26-year-old woman with a history of gravida 3, para 0, and 1 spontaneous abortion, underwent laparoscopic right salpingectomy in another facility five years ago following a ruptured right tubal ectopic pregnancy. She had no known systemic diseases and did not utilize contraceptive methods. The patient's most recent menstruation occurred five weeks prior to admission when she presented to the emergency department at our tertiary hospital. Her chief complaints were syncope and abdominal pain, which began six hours ago and steadily intensified. During the initial evaluation of the patient, she presented with confusion in consciousness, pallor of the skin, a systolic blood pressure of 80 mmHg, a diastolic blood pressure of 55 mmHg, and a pulse rate of 110 beats per minute. Due to the patient's confused state, the presence of guarding and rebound tenderness in the abdominal examination was identified through the expression of pain on her face. An anamnesis obtained from the patient's husband revealed no history of systemic diseases or drug usage, with the pregnancy occurring spontaneously. Laboratory findings showed a hemoglobin level of 6.8 g/dL, a hematocrit level of 22.3%, a platelet count of 159x10³/mL, normal coagulation and laboratory parameters, and a beta-human chorionic gonadotropin level of 4.872 mIU/mL. Transvaginal ultrasound imaging revealed an endometrial

Corresponding Author: Cenk Sosyal

e-mail: drsoysalcenk@gmail.com

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thickness of 16 mm. The observed findings were consistent with the presence of a gestational sac measuring 12x10 mm, which contained a yolk sac located laterally to the right uterine cornual region. While the left ovary was naturally visualized, a 38x27 mm corpus luteum image was observed in the right ovary. Significant fluid collection with multiple echogenicities was detected in the pelvic region. Based on the presence of hemorrhagic shock and suspicion of a ruptured ectopic pregnancy, an emergency laparotomy was warranted. During the initial phase of the operation, approximately 1000 cc of blood was aspirated from the abdomen for immediate exploration. It was observed that the bleeding originated from a 1 cm ectopic pregnancy focus in the isthmic region, which remained following the previous laparoscopic salpingectomy of the right tube (Figure-1).

The left ovary was observed in its natural state, and the presence of a corpus luteum cyst in the right ovary was confirmed intraoperatively. The ectopic pregnancy focus was surgically excised, and the operation was successfully concluded after effective control of the bleeding. Intraoperatively, 2 units of erythrocyte suspension were administered. Subsequently, the patient was discharged after a 3-day hospitalization period, having reported no complaints or complications. The pathology report confirmed the diagnosis of an ectopic pregnancy (Figure-2).

Discussion

The incidence of ectopic pregnancy has shown an increase compared to previous years, likely attributed to factors such as pelvic inflammatory disease, assisted reproductive techniques, and advanced maternal age. Ectopic pregnancy



Figure 1. Tubal stump ectopic pregnancy (Intraoperative)

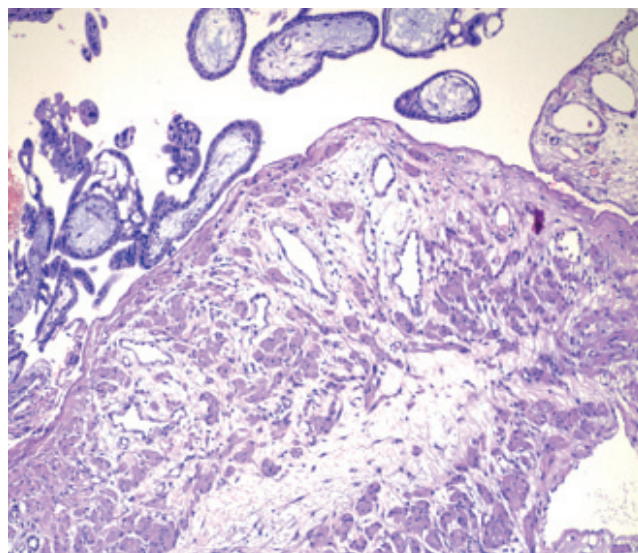


Figure 2. Histological image of tubal stump ectopic pregnancy

occurring in a residual tubal stump after salpingectomy has been sparsely documented in the literature (7). To our knowledge, our case represents the first reported instance of tubal stump ectopic pregnancy in Turkey.

Various theories have been proposed to explain the mechanisms underlying recurrent ipsilateral ectopic pregnancy. In a case published by Zuzarte et al. in 2005, the authors emphasized that ectopic pregnancy occurring in the distal tube after partial salpingectomy may result from the emergence of spermatozoa from the salpingectomized tubular tip, leading to fertilization in the peritoneal space (8). Milingos et al. reported another mechanism in which the fertilized ovum could traverse a transperitoneal route from the intact tube to the salpingectomized tube (9). Takeda et al., drawing upon their own cases, proposed that fertilization occurs in the intact tube after ovulation on the same side, followed by transuterine passage of the zygote into the remnant tube (7). In our case, the presence of a corpus luteum observed both in ultrasonography and during laparotomy strongly suggests that ovulation occurred in the right ovary, on the side of the remnant tube. Based on this observation, two main mechanisms can be proposed. The first mechanism involves the secondary oocyte being released into the peritoneal cavity after ovulation, entering through the open peritoneal end of the tubal stump, and establishing an ectopic focus in the tubal stump after fertilization. The second possible mechanism is that the left fimbria captures the oocyte expelled into the peritoneal cavity from the contralateral ovary. After fertilization in the intact left tube, the resulting zygote implants itself transuterinely into the remnant tube. Despite these plausible explanations, it remains challenging to definitively establish the precise mechanism underlying tubal stump ectopic pregnancy.

Lou and Tulandi reported a remarkable 100% success rate in the surgical treatment of tubal stump pregnancy, while methotrexate (MTX) administration achieved approximately 83% success (10). Operative management

has proven to be a favorable treatment option for this specific type of ectopic pregnancy (11). The literature also documents successful laparoscopic procedures utilizing suturing of the cornual defect, with the use of absorbable polyglactin for hemostasis following the application of an advanced bipolar device (12, 13). In our case, the expectant approach or administration of MTX was not feasible due to the patient's unstable vital signs, intraperitoneal bleeding, and signs of hemorrhagic shock. Although the laparoscopic approach is considered an appropriate surgical method in such cases (4), the preoperative laparoscopic preparation requires additional time compared to laparotomy. In our case, considering the urgency of the patient's condition, laparotomy was promptly performed without delay to address the shock-related findings.

Performing total salpingectomy instead of partial salpingectomy during ectopic pregnancy surgery, particularly in cases involving a ruptured ampullary region, can decrease the occurrence of tubal stump ectopic pregnancy. The selection of a preventive method for tubal stump ectopic pregnancy remains controversial due to its infrequent incidence and the lack of certainty regarding its mechanism of occurrence. Nevertheless, various options can be suggested to minimize the risk of recurrence. One of these options is to ensure the avoidance of a long tubal stump during the salpingectomy procedure (14). Leaving a small tubal stump is a common practice aimed at minimizing the risk of bleeding associated with the isthmic portion of the fallopian tube. Therefore, it is recommended to minimize the residual isthmic portion during salpingectomy to prevent the occurrence of endosalpingiosis and the formation of potential fistulas in the stump, where sperm can reach the ovum (2, 15).

In conclusion, the recurrence of ectopic pregnancy in the residual tubal stump following salpingectomy can have significant clinical implications. Diagnosing tubal stump ectopic pregnancy poses challenges, highlighting the importance of heightened awareness and early ultrasound examination, particularly in the early stages of pregnancy, for patients with a history of salpingectomy. It should be noted that recurrence can still occur even with extensive resection of the fallopian tube during total salpingectomy. Consequently, partial salpingectomy is not recommended as a surgical method for reproductive-age women. The prevention of ectopic pregnancy recurrence in the residual tubal remnant remains uncertain. Nevertheless, every effort should be made to promptly diagnose tubal stump ectopic pregnancy and implement preventive measures.

Consent to Participate: All procedures conducted in studies involving human participants adhered to the ethical standards set by the institutional and/or national research committee, following the principles outlined in the 1964 Helsinki Declaration and its subsequent amendments, or comparable ethical standards. Informed consent was obtained from all individual participants who were included in the study.

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