

# Post Sterilization Tubal Abortion with Haemoperitoneum and Negative Pregnancy Test - A Rare Case Report and Review of Literature

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**Abstract:** ***Introduction:** Ectopic pregnancy is commonly seen as a differential diagnosis of first trimester vaginal bleeding. A negative urine pregnancy test traditionally excludes the diagnosis of pregnancy. **Case:** We report a rare case of ruptured ectopic pregnancy in a sterilized patient with a negative urine pregnancy test and with a serum beta-human chorionic gonadotropin ( $\beta$ -hCG) of <2 mIU/mL. The patient developed hemoperitoneum and required laparoscopy. The histopathological examination of the products later showed trophoblastic villi. **Conclusion:** This case highlights the limitations of the urine pregnancy test in diagnosing early pregnancy, the magnitude of the difficulties involved in the diagnosis of ectopic pregnancy and the importance of combining examination findings with ultrasound and laboratory results. Obstetrician must not exclude this potentially life-threatening condition in the presence of intraabdominal bleed or severe pelvic pain even with a negative urine pregnancy test.*

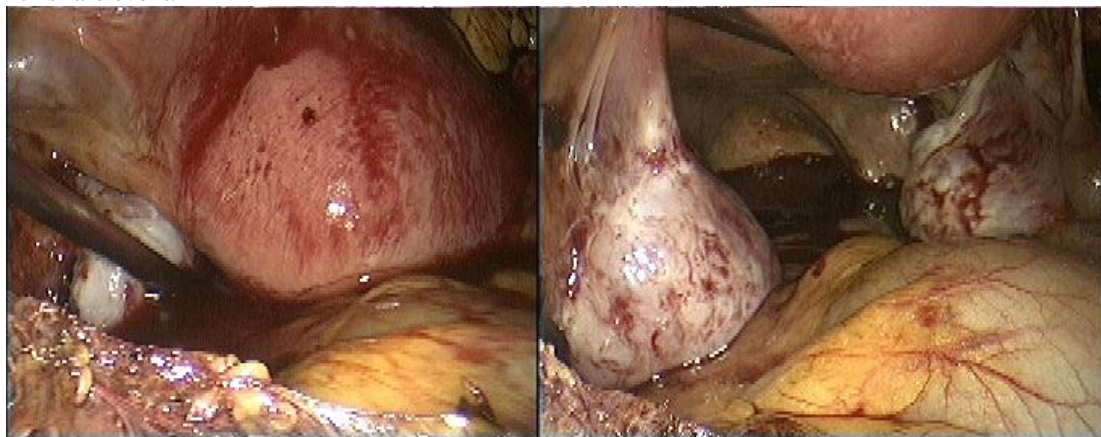
**Keywords:** Tubal abortion, hemoperitoneum,  $\beta$ -hCG, negative pregnancy test

## 1. Introduction

Ectopic pregnancy refers to the implantation of a fertilised ovum outside of the uterine cavity. A tubal ectopic pregnancy can evolve either by tubal rupture or tubal abortion, leading to hemoperitoneum. The incidence of ectopic pregnancy varies from 0.5%-2% worldwide. The most common site is the fallopian tube (95%), other sites being ovary, peritoneal cavity, cervix and prior caesarean scar [1]. The prompt identification of a pregnant woman with an ectopic pregnancy is critical because the sudden rupture of a fallopian tube can lead to haemorrhagic shock. The classic triad for an ectopic pregnancy of abdominal pain, amenorrhea, and vaginal bleeding is only present in about 50% of women [2]. Diagnosis of an ectopic pregnancy includes history and examination findings, ultrasound evidence, and an elevated beta-human chorionic gonadotropin (hCG) level with a positive pregnancy test. This case of an ectopic pregnancy with a negative pregnancy test and without an elevated beta-hCG is presented to emphasize the importance of clinical judgment in acute gynaecologic settings along with limitations of the urine pregnancy test. We also present a brief review of the literature on this rare event.

## 2. Case Description

A 36-year-old, P3L3, thrice post cs with tubal sterilization done during her last caesarean section 6 months back and with a h/o 1 month of amenorrhoea had presented with c/o pain in abdomen, vomiting and loose watery stools for 1 day. On examination her vitals were stable with a pulse rate of 90 beats /minute and BP-130/80 mmHg. Mild pallor was present and abdomen was soft and non-tender. Per vaginum examination revealed bulky uterus with no cervical motion tenderness or forniceal tenderness and no bleeding noted. Her urine pregnancy test was negative and serum  $\beta$ -hCG was <2 mIU/ml. USG done showed mild to moderate hemoperitoneum with no collection in the pelvis. Patient was taken up for diagnostic laparoscopy. Intraoperatively moderate hemoperitoneum was noted with right fimbrial end adherent to right ovary and left tube and ovary being normal, no evidence of tubal rupture noted. Intraoperatively, a diagnosis of tubal abortion was made. Histopathological examination revealed trophoblastic cells, thus confirming ectopic pregnancy.



**Figure 1 (A):** uterus with hemoperitoneum, **(B)** bilateral ovaries normal with hemoperitoneum

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### 3. Discussion

Approximately 1% of ectopic pregnancies have a negative urine pregnancy test and a  $\beta$ -hCG level of less than 20 mIU/mL [2]. In a normal intrauterine pregnancy, trophoblasts secrete  $\beta$ -hCG with blood levels reaching 50–300 mIU/mL within two weeks of fertilization [3]. The urine pregnancy test generally becomes positive when the serum  $\beta$ -hCG is greater than or equal to 25 mIU/mL [3]. The most likely mechanism for low  $\beta$ -hCG levels in ectopic pregnancy is the degeneration of trophoblasts that result in cessation of  $\beta$ -hCG production [4]. Other causes can include a small number of chorionic villi present to produce  $\beta$ -hCG, abnormal  $\beta$ -hCG synthesis, or an enhanced  $\beta$ -hCG clearance [4].

The first case of ruptured ectopic pregnancy together with a negative pregnancy test was reported by Lonky in 1987 and since then only a handful of such cases have been reported [5]. Ectopic pregnancy can present with variable clinical features such as pain in abdomen, spotting/bleeding per vaginum, nausea, vomiting, dyspareunia or other urinary/bowel complaints. The patient may not be necessarily hemodynamically unstable. Diagnosis includes a combination of positive pregnancy test, serum beta hCG test with clinical examination findings and sonography (TAS/TVS). Ultrasonographic features include an empty uterine cavity, pseudogestational sac, complex adnexal cyst/mass, tubal ring sign, ring of fire sign etc. Our case illustrates the clinical diagnostic challenges associated with ectopic pregnancy with a negative urine pregnancy test in a patient whose tubal ligation has been done. Presented below is a brief review of the literature on this rare event.

**Table 1**

Serial no.	Study	Age in years	Period of amenorrhoea	Urine pregnancy test	B hCG in mIU/ml	Clinical features	Hemoperitoneum	Diagnosis
1	Ka yu tse et al <sup>6</sup>	17	4 weeks	Negative	27	Abdominal pain for 5 days with vaginal bleeding for 1 month	Present	Tubal abortion
2	Aherwar et al <sup>7</sup>	35	8 weeks	Negative	Negative	Spotting for 5 days Pain in abdomen for 10 days	Present	Chronic tubal ectopic pregnancy
3	Daniilidis et al <sup>8</sup>	36	6 weeks	Negative	13	Abdominal pain, 2 episodes of blackouts	Present	Ruptured tubal ectopic pregnancy
4	Jonathan et al <sup>2</sup>	35	4 weeks	Negative	10	Abdominal pain, rectal discomfort, dyspareunia, nausea.	Present	Ruptured ectopic pregnancy
5	Mahesh et al <sup>9</sup>	27	8 weeks	Negative	95	Abdominal pain	Present	Ruptured tubal ectopic pregnancy
6	Zachary et al <sup>10</sup>	23	-	Negative	Negative (<5)	Abdominal pain, bleeding per vaginum	Present	Tubal ectopic pregnancy
7	Present study	36	4 weeks	Negative	<2	Pain in abdomen, vomiting and loose watery stools	Present	Tubal abortion

### 4. Conclusion

This case of an ectopic pregnancy in a sterilized patient with negative pregnancy test illustrates the magnitude of the difficulties involved in the diagnosis of ectopic pregnancy and also the need to maintain a high clinical index of suspicion. The possibility of an ectopic pregnancy should be considered in every woman with or without hemodynamic instability, even with a negative pregnancy test. It highlights the need to emphasize on rare cases so that a potentially life-threatening diagnosis is never excluded from the differential diagnosis.

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