

## Case Report

# Maternal death caused by uterine vein rupture in first trimester: A case report

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## Abstract

Hemorrhage that leads to death in first trimester either because of spontaneous or induced abortion is 22% of first trimester maternal deaths. Deaths caused from the spontaneous rupture of uterine vein is rare. In this report we present a case of first trimester maternal death due to hemorrhage. Thirty-three year old women admitted to emergency department with complaints of dizziness and fainting and had cardio-pulmonary arrest within admission. The patient did not respond to resuscitation and autopsy was performed. Full-thickness rupture on left uterine vein and 18x20x6 cm retroperitoneal hematoma was detected. There were not any signs of trauma which might have caused rupture in the uterine vena. Twelve weeks of intrauterine pregnancy was detected and 700 ml hemorrhage was drained from uterus. There was a widespread bleeding on the surface of the endometrium. Biochemical analyses showed no toxic substances in blood, urine and tissues of internal organs. Histopathological examinations demonstrated widespread edema in the lungs and infected necrotic residual tissues in the placenta. The cause of death was explained with bleeding from ruptured uterine vein and placental abruption.

## Key Words:

First trimester bleeding; maternal death; spontaneous uterine vein rupture

## Introduction

Leading causes of maternal death are preeclampsia, amniotic fluid embolism, obstetric hemorrhage, cardiac diseases, pulmonary thromboembolism and infections [1]. Maternal death rate was reported 6.5/100.000 in a 6 years period in United States (USA) and this rate was 14.7/100.000 in Turkey in 2015 [2]. Only 10% of maternal deaths occur in first-trimester and it is mostly caused by bleeding in ectopic pregnancy [1]. Hemorrhage that leads to death in first trimester either because of spontaneous or induced abortion is 22% of first trimester maternal deaths [3]. Spontaneous rupture of uterine veins is a quite rare condition with high maternal and fetal mortality, and dramatically gives signs with acute abdominal pain and symptoms of hypovolemic shock

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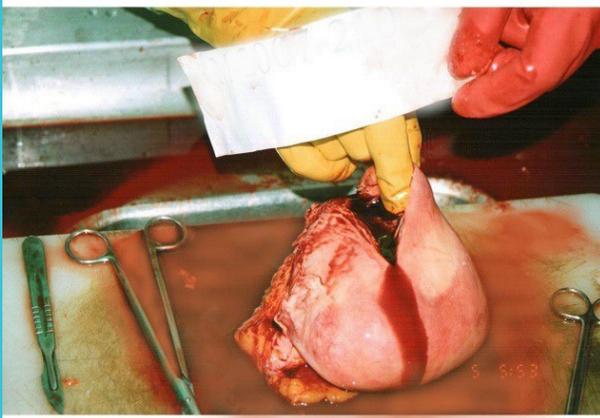
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[4]. In this report we present a case of first trimester maternal death due to hypovolemic shock as a result of hemorrhage from ruptured uterine vein and abruption of placenta.

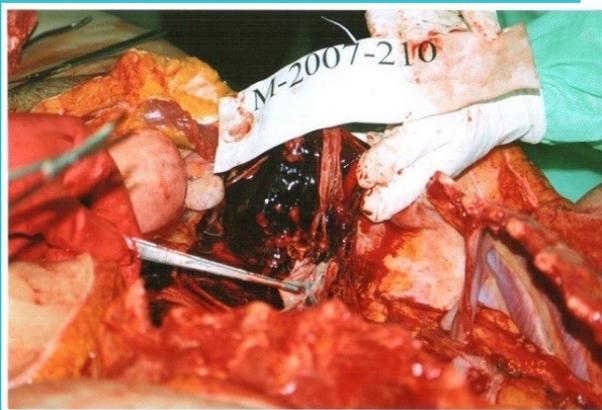
## Case Presentation

A thirty-three-year-old caucasian woman admitted to emergency department with complaints of dizziness and fainting. On the admission, her blood pressure and heart rate could not be measured. The patient had respiratory arrest within 2-3 minutes of her admission and she responded to resuscitation. However, she had respiratory arrest once more and was considered dead upon lack of response to resuscitation. She was on her third pregnancy with history of uneventful two live births. Due to her last menstrual period, the patient was in her 12th week of gestation in correspondence to abdominal ultrasonography. The cause of death could not be determined in the first postmortem examination therefore an autopsy was planned. The postmortem evaluation revealed uterine descensus and 18x20x6 cm retroperitoneal hematoma on the left side (Figures

**Figure 1A.**



**Figure 1B.**

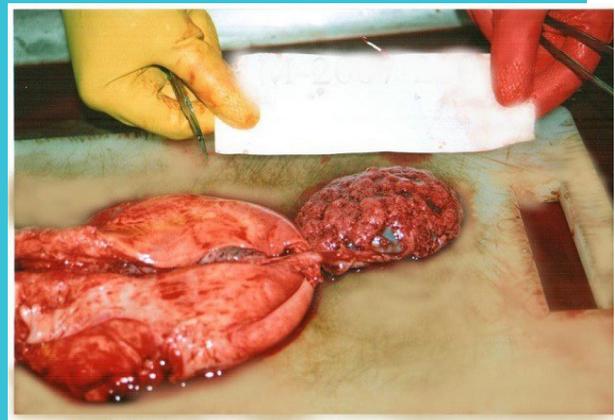


*There was a hematoma, which covered 18x20x6 cm area, located in the retroperitoneal region on the left.*

1A-1B). Also, a full-thickness rupture in the uterine vein on the left and bleeding in the uterus was detected. There were not any signs of trauma which might have caused rupture in the uterine vena. The uterus was 770 gr, 17 cm in length and 13 cm in width. Qualitative hemorrhagic fluid of 700cc was drained from the uterus. There was a widespread bleeding on the surface of the endometrium. A placental structure with a size of 8x6x2 cm was located in the superior left part of the uterus (Figure 2). A fetus with intact amnion sac was detected. The crown-rump length (CRL) of fetus was 7 cm and weighted 12 gr (Figure 3). Biochemical analyses showed no toxic substances in blood,

urine and tissues of internal organs. Histopathological examinations demonstrated widespread edema in the lungs and infected necrotic residual tissues in the placenta. The cause of death was explained with intraperitoneal bleeding from ruptured uterine vein and placental abruption. For this report, 11.09.2007 dated B.03.1.ATK.0.01.00.08/573 numbered permit was taken from the Institute of Forensic Medicine.

**Figure 2.**



*There was a widespread bleeding on the surface of the endometrium. A placental structure, which was 8x6x-2cm, located in the left superior part of the uterus.*

## Discussion

Rupture of uterine vessels is a rare situation with its catastrophic consequences due to hemorrhage [5]. Approximately 150 cases have been reported in English literature [5]. This complication may occur in any period of pregnancy including intrapartum and puerperal periods, but most of the reported cases were in third trimester [6-8]. Risk factors for spontaneous rupture of utero-ovarian veins are defined as endometriosis, uterine leiomyoma, previous history of pelvic surgery, varices so far [7, 9-11]. Differential diagnosis varies due to trimester of pregnancy like rupture of ectopic pregnancy, spontaneous abortion in first trimester or uterine rupture, placental abruption in third trimester and also may mimic other non-obstetrical causes like renal and biliary colic, hemorrhagic pancreatitis, ruptured aortic

aneurysms or other retroperitoneal vessels, ovarian torsion and rupture of ovarian cyst [12,13]. Immediate decision for emergency laparotomy is crucial to avoid maternal mortality and also fetal mortality for the cases in third trimester. In this case, the patient had a delayed admission to hospital and in this catastrophic and lethal scenario when patient had cardiopulmonary arrest for two times within admission, it was too late for evaluation and a decision for emergency laparotomy. Placental abruption could be secondary to uterine bleeding which might have triggered uterine contractions. It is important to keep in mind the uterine vessel rupture as a differential diagnosis in cases with hemorrhagic shock and abdominal pain, especially when the other possible obstetric and non-obstetric pathologies are excluded.

#### Acknowledgement

None

#### Declaration of Interest

None

**Figure 3.**



*A fetus with intact amnion sac was detected. The height of fetus was 7 cm and weight was 12 gr.*

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