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Clinical Communications: OB/GYN

VAGINAL BLEEDING BEFORE 20 WEEKS GESTATION DUE TO PLACENTAL ABRUPTION LEADING TO DISSEMINATED INTRAVASCULAR COAGULATION AND FETAL LOSS AFTER APPEARING TO SATISFY CRITERIA FOR ROUTINE THREATENED ABORTION: A CASE REPORT AND BRIEF REVIEW OF THE LITERATURE

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□ **Abstract—We present a case of placental abruption with concomitant disseminated intravascular coagulation in a woman who presented with vaginal bleeding. A 32-year-old pregnant woman at 17 and 4/7 weeks gestation with a 1-month history of intermittent abdominal pain presented to our Emergency Department (ED) with 1 h of vaginal bleeding. Upon initial history, the patient reported that she was diagnosed with "blood behind the placenta" the day before and was discharged on pelvic precautions. An ED ultrasound confirmed the sub-amniotic hematoma with placental hematoma and a viable intrauterine fetus. A low fibrinogen level was suggested for disseminated intravascular coagulation and increasing hemorrhage necessitated dilation and evacuation and multiple units of blood products on an emergent basis. Only a few cases have been described in the literature demonstrating disseminated intravascular coagulation in patients at fewer than 20 weeks gestation with routine ultrasound findings of live intrauterine pregnancy and subchorionic hemorrhage.** © 2007 Published by Elsevier Inc.

□ **Keywords—Emergency ultrasound; DIC; vaginal bleeding; threatened abortion; subchorionic hemorrhage**

INTRODUCTION

Vaginal bleeding ranks as one of the top 10 chief complaints for which patients seek care in the Emergency Department (ED) (1). The causes of vaginal bleeding before 20 weeks gestation are numerous, however, abortion (threatened, inevitable, incomplete, complete, septic, and missed) and ectopic pregnancy comprise $> 95\%$ of these (2). Several review articles and book chapters also exist at present concerned primarily with the evaluation, management, and treatment of threatened abortion (1–12). Evaluation algorithms and clinical policy statements state that when a sonogram demonstrates a viable intrauterine fetus in a case of threatened abortion, and the bleeding is less than one pad per hour, the mother can safely be sent home on pelvic precautions without an Obstetrics and Gynecology (OB/GYN) consult or coagulation studies while in-house (1,9,10). We demonstrate that rigid adherence to these algorithms would potentially have resulted in a poor outcome in this case.

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CASE REPORT

A 32-year-old G5P4004 gravid woman at 17 and 4/7 weeks gestation by 12-week sonogram and last menstrual period sought ED care for vaginal bleeding with passage of clots before Emergency Medical Services arrival. The pregnancy had been proceeding normally until approximately 1 month before presentation when she had the onset of mild abdominal pain. She sought treatment at a local ED 2 weeks later. A sonogram at that time showed "blood behind the placenta," and the patient was sent home with instructions for bed rest. Two days before presentation, she again developed mild abdominal pain with pelvic pressure but without any vaginal bleeding. She was evaluated at another local ED, and she underwent another sonogram with similar results. Upon presentation to our ED, she was complaining of abdominal pain and mild lower back pain with vaginal bleeding less than one pad per hour and one episode of vomiting. She had been bleeding for 1–2 h before presentation, reported seeing some clots, but denied passing any tissue. She denied any fever, chills, dysuria, or nausea. She also denied any recent change in medications or the occurrence of any trauma. OB/GYN was consulted.

The obstetric history was notable for two normal vaginal deliveries followed by two cesarian sections at term for one breech malposition and one failed trial of labor. The patient denied any other past medical or surgical history. The gynecologic, family, and social histories were likewise unremarkable.

Initial vital signs included: temperature 36.4°C, pulse 105 beats/min, blood pressure 124/78 torr, respiratory rate 20 breaths/min, and O_2 saturation of 100% on room air. She appeared afebrile, non-toxic, comfortable, and in no acute distress. The lungs were clear to auscultation bilaterally and a regular rate and rhythm was noted on cardiovascular examination with a normal S_1 and S_2 and no murmurs. The abdomen was gravid, soft, non-tender, and non-distended. Pelvic examination revealed approximately 75 mL of dark red blood obscuring the cervix in an otherwise atraumatic vaginal vault. No tenderness was revealed during the pelvic examination and the cervix was noted to be long and closed. The extremities were noted to be warm with no cyanosis clubbing or edema. She was alert and oriented throughout the examination with no focal neurologic deficits or appreciable muscle weakness.

The initial laboratory studies showed anemia with a hematocrit slightly lower than the 32–34% commonly cited as the range for dilutional anemia seen often in pregnancy. Likewise, an expected mild leukocytosis was noted. A low platelet count was shown as well. The liver panel was unremarkable and a toxicology screen was negative. Laboratory values are found in Table 1.

The bedside trans-abdominal sonogram showed a single live fetus (Figure 1B and 1C) with a normal heart rate. Additionally, a 1.9 × 1.1 × 0.5 cm hypoechoic avascular area was noted within the placenta suggestive of an intra-placental cyst or area of hemorrhage (Figure 1A and 1B). A 4.9 × 5.0 × 2.3 cm slightly hypoechoic mobile oval-shaped lesion that appeared to be intra-amniotic or sub-amniotic in location and that changed position from fundal to lower uterine segment with the mother's positioning, was thought to be a sub-amniotic hematoma (Figure 1C and 1D). Intra-amniotic small floating debris was also shown and was read as possible minor amounts of hemorrhage, infection, or an unusual amount of sloughed cells (Figure 1A).

After obtaining the results of the confirmatory abdominal ultrasound, the consultant requested that additional laboratory studies be drawn. A fibrinogen returned a value of 88 mg/dL (normal 170–530). The prothrombin time was elevated at 17.9 s and a semi-quantitative D-dimer was elevated at > 8.0 mg/L. Further workup

Table 1. Laboratory Values*

Variable	Value	Variable	Value
White blood cell	10.8 (4.0–10.5)	Kleihauer Betke	No fetal cells
Red blood cell	3.24 (3.7–5.0)	Fibrinogen	88 (170–530)
Hemoglobin	11.4 (11.5–15.0)	Prothrombin time	17.9 (11.9–14.9)
Hematocrit	31.8 (34–44)	INR	1.47 (0.80–1.21)
Platelets	105 (150–400)	Partial thromboplastin time	38.7 (26.3–37.7)
Neutrophils	10.4 96% (2.0–7.5)	D-dimer	>8 (<0.50)
Lymphocytes	0.4 4.0% (0.9–3.3)	Protein total	5.9 (6.1–8.2)
Sodium	134 (135–145)	Albumin	3.0 (3.2–5.5)
Potassium	3.5 (3.3–4.8)	Total bilirubin	1.5 (0.0–1.4)
Carbon dioxide	22 (25–34)	Alkaline phosphatase	60 (26.0–110.0)
Calcium	8.1 (8.4–10.2)	Apartate aminotransferase	28 (8.0–40.0)
BHcg (beta)	49,284 (5,000–50,000)	Alanine aminotransferase	14 (0.0–60.0)
A,B,O and Rh factor	O+	Toxicology	Negative

* Those drawn on initial presentation shown in first column.

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