

Vaginal Bleeding, Roles of Laboratory Team, Nurses and Operation Theater Technicians

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Abstract

Having a broad range of potential diagnoses, vaginal bleeding is a common ailment that can be treated. In addition to being able to affect people of any age, vaginal bleeding can be categorized as either acute or chronic. The examination and management of vaginal bleeding are discussed in this exercise, as well as the critical role that an interprofessional team plays in collaborating to offer comprehensive care and improve outcomes for patients who are impacted by the condition. The vulva, the vagina, the cervix, the uterine body, and the adnexa are all parts of the genital tract that might experience bleeding. Vaginal bleeding is often the result of bleeding in these areas. A number of factors can cause bleeding, including bleeding that is caused by obstetric, gynecologic, and systemic processes. In these kinds of circumstances, the roles that the clinical laboratory team, along with the nurses and the technicians in the operating room, play are extremely important factors.

Keywords: *vaginal bleeding, clinical laboratory team, operation theater technicians.*

Introduction

Vaginal bleeding is frequently brought on by abnormal uterine bleeding (AUB), which can occur in both adolescents and adults. The International Federation of Gynecology and Obstetrics (FIGO) uses the acronym PALM-COEIN to classify AUB, which is a helpful way to conceptually categorize the wide variety of AUB etiologies; the use of this acronym has been adopted by various organizations throughout the world, including the American College of Obstetricians and Gynecologists (ACOG) [1]. The same etiologies can also produce bleeding episodes in postmenopausal women, despite the fact that this classification method was created for females who were of reproductive age. For example, trauma, ulcers, neoplasia, atrophy, and erosion owing to prolapse, from a foreign substance (such as mesh from prolapse surgery, retained tampon or condom, or toilet paper in children), or from radiation therapy are some of the most common reasons of bleeding in the vulvar and vaginal regions. Among the potential causes of cervical ectropion include infections that can lead to cervical friability (such as Chlamydia trachomatis, vaginal candidiasis, and bacterial vaginosis), neoplasia, polyps and fibroids, and cervical ectropion. Furthermore, endometriosis can contribute to the development of endometrial implants in the cervix or vagina, which can result in irregular bleeding. Although it is less common, bleeding from the adnexa can also manifest as vaginal hemorrhage. This type of bleeding might be caused by salpingitis, malignancy, or burst hemorrhagic cysts [2].

Subchorionic hematoma, pregnancy loss, ectopic pregnancy, and gestational trophoblastic disease (GTD) are some of the obstetric conditions that can lead to vaginal bleeding during the early half of a pregnancy. Placental abruption, aberrant placentation (such as placenta previa, vasa previa, and placenta accreta spectrum), uterine rupture, and cervical dilatation are all examples of obstetric causes of bleeding that can occur later in pregnancy. Naturally, bleeding in pregnancy can also be caused by factors that are not related to obstetrics, and these factors should be taken into consideration [3].

Uterine atony is the most common cause of postpartum hemorrhage; however, other potential causes include retained placental pieces or membranes, trauma (such as cervical or perineal lacerations), uterine inversion, and disseminated intravascular coagulopathy (DIC) [4].

Different factors, such as the patient's age and reproductive status, are taken into consideration when evaluating vaginal bleeding. In any patient who is bleeding, it is necessary to estimate the amount of blood loss based on the patient's medical history (for example, pad counts). In most cases, a complete blood count (CBC), coagulation panel, and type and cross match assessment are recommended when there is a significant amount of bleeding [5].

The primary focus of the healthcare professional in situations where there is severe bleeding should be on stabilizing the patient, with particular attention paid to the airway, breathing, and circulation (sometimes known as the "ABCs"). If the patient is experiencing bleeding that cannot be managed, the healthcare provider may need to pack the vagina in order to decrease the loss of blood. It is also possible that blood transfusions are required [6].

Review:

With the exception of situations in which it is already known that the individual is pregnant, the first step in examining a person who has vaginal bleeding and the ability to have children is to acquire a pregnancy test.

Non-obstetric causes of bleeding can also be the cause of obstetric bleeding during the first half of pregnancy. Other potential causes of obstetric bleeding include ectopic pregnancy, pregnancy loss, a subchorionic hematoma, and gestational diabetes. Consequently, in the event that a pregnancy test yields a positive result, the initial procedures consist of determining the following: A. the location of the pregnancy; B. the viability of the pregnancy; and C. the approximate gestational age [7]. This is in addition to ruling out non-obstetric causes of bleeding after conducting a history and examination.

On the other hand, if an intrauterine pregnancy is not clearly identified on ultrasound, a quantitative serum beta-human chorionic gonadotropin (hCG) level should be obtained; sometimes, the hCG level needs to be trended over time in order to make the correct diagnosis. All three of these goals can typically be accomplished with a pelvic ultrasound in the early stages of pregnancy. If an intrauterine embryo or fetus is clearly demonstrated by a bedside ultrasound, and there is visible fetal cardiac activity (FCA), then the hCG level is often not required. In the event that, on the other hand, FCA has not yet been identified, a serum hCG level is recommended. In most cases, it is prudent to get the hCG level before ordering a formal pelvic ultrasound. This is due to the fact that an hCG level can assist radiologists in interpreting ultrasound data prior to the development of pelvic calcification. (Note: hCG levels rise at recognized rates early in pregnancy; however, this rising decreases as the embryo or baby grows and ultimately reaches a plateau about 10 weeks of gestation. This is the reason why hCG levels are less significant later in the first trimester of pregnancy [7].

Identifying the site of the pregnancy: In the early stages of pregnancy, it is imperative that ectopic pregnancy be ruled out. Unless a patient has risk factors for a heterotopic pregnancy, such as the use of assisted reproductive technologies, the site of the pregnancy can be determined through the sight of a yolk sac and/or embryo/fetus. If these structures are observed within the uterus, then ectopic pregnancy can be definitively ruled out. Serial hCG levels and ultrasounds should be collected every 48 to 72 hours until the location of the pregnancy is verified or until the hCG levels decrease to levels that are not associated with pregnancy [8]. If ultrasound is unable to conclusively identify the location of the pregnancy, then the pregnancy should be confirmed.

Assessing the viability of the fetus: The presence of FCA is evidence that the fetus is viable. Even in the presence of vaginal bleeding, the pregnancy may (or may not) advance to a live birth if the cervical os remains closed. However, more bleeding raises the likelihood of pregnancy loss. If the cervical os remains closed, the

pregnancy may develop into a live birth. If the internal cervical os is open during the examination and/or ultrasound, then the loss of the pregnancy is unavoidable. After a fetal pole with fetal circumference (FCA) is evident on ultrasound, it is often not necessary to measure the hCG level, and viability can be monitored through the use of repeated ultrasounds. Certain ultrasound criteria can be utilized to diagnosis early pregnancy failure [9], which can be done prior to the visualization of the foetal cardiac artery.

Establishing the gestational age The gestational age can be established by calculating the estimated due date (EDD) from the low birth weight (LMP) and sonographic readings of particular biometric characteristics. The LMP-derived EDD is often utilized in situations where the EDD obtained from the LMP is identical to the EDD that is estimated by ultrasound measures. The ultrasound-derived EDD is utilized in the event that there is a significant disparity detected. To ensure that EDD judgments are consistent across the board, ACOG offers defined criteria and cutoff values [10].

Molar pregnancies and possibly cancerous disorders, such as choriocarcinoma, invasive mole, and numerous trophoblastic tumors, are examples of the types of tumors that might develop as a result of a GTD. These cancers are caused by aberrant fertilization occasions. Molar pregnancies are generally identified through the use of ultrasound, which reveals features that are diagnostic of the condition. These include a heterogenous mass with a vesicular pattern, which indicates that hydropic villi have replaced the placenta. In people who have a complete mole, theca lutein cysts may also be visible on ultrasound. Additionally, the levels of hCG in these patients are frequently excessively high, typically exceeding 100,000 mIU/mL (while these higher levels are only rarely found in partial moles). Gestational trophoblastic neoplasias, also known as GTN, are malignant processes that originate from abnormal trophoblastic tissue. These processes can be identified with persistently elevated hCG levels after a pregnancy event (such as a miscarriage, delivery of a viable pregnancy, molar

pregnancy, etc.) while a new pregnancy has been ruled out [11].

It has been at least thirty years since postpartum hemorrhage (PPH) has been the primary cause of death among mothers. This indicates that in order to reduce the overall rate of maternal mortality, it is imperative to reduce the number of fatalities that are caused by PPH [12]. The incidence of postpartum hemorrhage (PPH) varies around the globe, with the rate ranging from 5% to 15% of all deliveries. It is more prevalent in nations with poor and intermediate incomes. PPH is also responsible for serious morbidities, such as maternal near-misses, which are a particular concern. It is anticipated that between fifty and one hundred cases of severe maternal morbidity will occur for every single instance of postpartum hemorrhage (PPH) [13,14]. In order to find ways to reduce the mortality rate associated with PPH, medical professionals need to identify potential risk factors, and more significantly, they need to make an early diagnosis and devise a therapy that is both timely and effective.

The early identification of these situations is the foundation of the appropriate therapy; yet, the diagnostic criteria that are now in use may not be accurate enough to identify women who are at danger of dying. The evaluation of the amount of blood loss, which is typically done through visual estimates, is the basis for the diagnosis of PPH. This method has a number of drawbacks, one of which is that it gives an inaccurate estimate of the total volume of blood loss [15].

When it comes to clinical practice, therapeutic activities are dependent not only on the amount of blood loss but also on clinical judgment. It is possible that women who are healthy would not exhibit signs and symptoms of hemodynamic instability after bleeding 500 mL, whereas women who have clinical or obstetrical morbidities may present signals earlier throughout the bleeding process [16]. The purpose of this initiative is to identify women who are at risk of problems, regardless of the quantity of blood loss that may occur. The amount of blood loss is not the only factor that can be used to identify women who are at risk of problems; vital signs and clinical conditions can

also be helpful in this regard, as acknowledged by several clinical recommendations [17].

In most cases, medical professionals will look for additional sources of information in order to formulate their clinical opinion regarding PPH. The rate of blood flow, the heart rate, the arterial blood pressure, the respiratory rate, dizziness, and any changes in mental status are some of the clinical symptoms and vital signs that may be considered when making this decision [17].

Conclusion:

People who have female reproductive systems are more likely to experience vaginal bleeding, which is a medical disease that is both common and complicated. In this context, the term "atypical bleeding" refers to any bleeding that takes place outside of the normal standards associated with menstrual cycles. It encompasses a wide variety of bleeding patterns and causes. There are a number of underlying diseases that can be the cause of vaginal bleeding. Some of these conditions include hormone imbalances, uterine fibroids, polyps, infections, and in some instances, major reproductive or gynecological disorders. It is possible for it to be acute or chronic, and it exists across the entire age range. The nature of the bleeding, how long it has been going on, and how severe it is can provide important diagnostic clues. Although there are instances of vaginal bleeding that are considered to be harmless and regular, there are also situations that may require immediate medical treatment in order to address potentially significant concerns. It is essential for medical professionals, such as those who work in obstetrics, nursing, and operating theater technology, to be able to recognize and comprehend abnormal vaginal bleeding. This is because it can serve as a vital guide to appropriate management and treatment, as well as the role of clinical laboratories in determining cross-matching and urgent blood for transfusions, if they are required.

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