

## Assessing Abnormal Uterine Bleeding in the Urgent Care Center

**Urgent message:** Vaginal bleeding is a common presentation in the urgent care setting. An assessment of hemodynamic status, as well as an understanding of potential causes, is necessary to initiate treatment and triage the patient correctly.

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### Introduction

Patients presenting with what they perceive to be vaginal bleeding will not know whether that bleeding is specifically uterine, cervical, or (rarely) vaginal in origin. It is incumbent upon the urgent care provider to have a sound working knowledge of the many terms in the lexicon to describe such bleeding, and to be able to identify its source in order to appropriately direct treatment.

*Abnormal uterine bleeding* (AUB) encompasses both ovulatory and anovulatory uterine bleeding.

*Dysfunctional uterine bleeding* implies hormonal origin and is less specific.

*Menorrhagia* is excessive uterine bleeding at the time



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of the menstrual cycle, defined as menstrual blood loss of >80 cc per cycle or bleeding more than seven days.

*Metrorrhagia* is uterine bleeding occurring at times separate from defined menstrual bleeding.

*Dysmenorrhea* implies pain associated with the menstrual bleeding.

Simply knowing the vocabulary is not enough to effectively manage such patients, of course. One must bear in mind quantifying factors such as different pad or tampon size with differing absorbencies, differing

patient criteria for changing, and saturation.

This article will offer a systematic review of possible etiologies, patient history and demographic considera-

tions, and discussion of special patient populations.

### **Etiology**

Likely etiologies of AUB vary broadly. Recognition of demographic and historic factors can help guide the clinician in identifying the likely cause.

For example, an adolescent who just recently started her menstrual cycles will present different considerations than those of a post-menopausal woman or one who has had an established menstrual history. A complete evaluation of the premenarchal patient will not be addressed in this paper, but basic consideration in this age group should include foreign body, infection, trauma or abuse, and, rarely, bleeding secondary to tumor.

Abnormal bleeding in a pregnant patient must also be assessed uniquely.

Common to the evaluation of all these patients is the initial assessment of hemodynamic status, which is familiar to the urgent care provider already. Following this, the initial work-up and treatment are determined by the etiology of the bleeding.

#### *Adolescent patients*

The occurrence of “irregular” bleeding is common in adolescent patients. If the cycle fits the expectations of physiologic variation, it requires an assessment of hemodynamic parameters, excluding coagulopathy and then reassurance, or, occasionally, treatment.

While the median age for menarche across all demographics is 12.43-years-old, only 10% of girls will start their menses by age 11, and 90% will have started by 13.75 years old. It is noteworthy that the average age of menarche is slightly younger in blacks and Hispanics and in those patients with a higher body mass index.

Thus, while menarche occurring before age 11 may not be abnormal, it should be considered in respect to other signs of the development of secondary sexual characteristics.

Once menarche is established, not all girls will follow the same pattern and, thus, may present with complaints of “irregular” bleeding which may or may not be physiologic. Knowing the range of what can be considered “normal” allows the provider to decide whether further evaluation is warranted.

It is expected that anovulation will occur during the first year after menarche. By three years following menarche, 70% of females will establish a cycle interval lasting between 21 and 34 days. However, in the first years, 5% will experience an interval at 23 days; 5% will

experience intervals >90 days. Despite this wide range, the duration of the cycle should still not be longer than seven days.

#### *von Willebrand's disease*

With any bleeding heavier than average, the clinician should be alert for undiagnosed coagulopathies, particularly von Willebrand's disease. With an estimated prevalence of 1%, it is a common medical diagnosis associated with menorrhagia at menarche. History may reveal episodes of bruising, nosebleeds, or mucosal bleeding, as well. Many coagulopathies are inherited, including von Willebrand's, so family history may be relevant and helpful.

#### *Polycystic ovary disease*

Polycystic ovary disease, known alternately as Stein-Leventhal syndrome and PCO, should also be considered when menstrual irregularities occur with signs of hyperandrogenism or insulin resistance. Evaluation may demonstrate hirsutism, acne, or androgenic alopecia with evidence of metabolic syndrome. The etiology of PCO is uncertain, but may be related to either overproduction of ovarian androgens, excess pituitary luteinizing hormone (LH), or hyperinsulinism.

#### *Structural abnormalities*

Structural abnormalities such as polyps, fibroids, and tumor are unlikely in adolescents. As the age of the patient increases, however, anatomic causes become more prevalent. It is estimated that as many as 70% of white women and 80% of black women by age 50 have leiomyoma. Pedunculated and submucosal fibroids are most likely to cause irregular bleeding, as intramural, subserosal, and pedunculated fibroids do not directly communicate with the endometrial cavity. Imaging studies, primarily ultrasound, are needed to precisely define the nature and location of suspected fibroids.

Polyps can arise from either the cervix or the endometrium. Visual inspection is usually all that is necessary to diagnose an endocervical polyp, but those of endometrial origin would require an imaging study. Removal of an endocervical polyp could be accomplished in the urgent care setting. Although almost always benign, sending the specimen for definitive pathology is appropriate. Bleeding at the base of the polyp, from where it was removed, is generally easily controlled by a variety of hemostatic techniques.

Endometrial adenocarcinoma is the most likely malignant cause of AUB. Although less likely to present to

urgent care for vaginal bleeding, postmenopausal patients with any bleeding warrant evaluation. Attention should be given specifically to anatomic causes, with concern for malignancy, atrophic bleeding, and bleeding disorders. Outpatient endometrial biopsy is a procedure readily adaptable to the urgent care setting.

#### *Anovulation*

In the patient group outside of the initial menarchal period and up to menopause, anovulation is the most likely etiology.

In the anovulatory patient, no corpus luteum forms, and the endometrium experiences excessive estrogen exposure. Such endometrial growth is comprised of both glands and vessels, yet without progesterone from the corpus luteum, there is not adequate stromal support to sustain endometrial stability; bleeding ensues. However, not all areas will bleed simultaneously, giving rise to the irregular nature of the vaginal bleeding (metrorrhagia).

**Table 1. Common Causes of Anovulatory Bleeding**

Physiologic	<ul style="list-style-type: none"> <li>■ Menarche</li> <li>■ Perimenopause</li> <li>■ Breastfeeding</li> <li>■ Medications</li> </ul>
Pathologic	<ul style="list-style-type: none"> <li>■ Abnormalities of central hypothalamic-pituitary hormonal axis</li> <li>■ Abnormalities of ovarian hormones</li> </ul>

Causes of anovulatory bleeding are numerous, but can be simplified in terms of those that are secondary to normal physiologic processes such as adolescence, perimenopause, and lactation, and those with pathologic causes secondary to endocrinologic disorders, systemic disorders, ovarian factors, and external factors such as medications (Table 1).



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### Assessment

The initial evaluation of the hemodynamic status of the patient with bleeding is familiar to the urgent care provider. Treatment of the unstable patient will depend on the capabilities of the particular setting.

In cases where there is an anatomic cause of irregular bleeding, there may well be a normal cyclic, ovulatory pattern, as well. When evaluating the bleeding pattern, it is helpful if the patient can differentiate from her normal menses, often associated with premenstrual symptoms indicative of ovulation. The pattern of bleeding may be consistent with ovulation and feature normal menstrual bleeding, as well as intermenstrual bleeding, metrorrhagia. Or, the pattern may be solely irregular bleeding consistent with anovulation. Thus, while developing the history of the bleeding pattern, it is not as helpful to focus on diagnostic terms as it is to differentiate between ovulatory or anovulatory bleeding.

The provider should evaluate the patient for endocrine disease, looking for signs and symptoms of thyroid, cortisol, prolactin, and sex hormone disorders.

In addition, the history should review clues for coagulopathies. Medicines, specifically psychotropics, can interfere with ovulation. Chronic systemic illness, such as diabetes, liver disease, or hypertension, is also associated with anovulation.

The physical exam should include thyroid size and symmetry, evidence of acanthosis nigricans, evaluation of hirsutism, or even virilization.

When performing the pelvic exam, initial speculum exam will sometimes reveal a vaginal or cervical source for the bleeding. In the sexually active patient, infections with either endocervicitis or endometritis can produce irregular bleeding based on capillary fragility associated with stromal inflammation. A full screening for sexually transmitted disease screen would be advisable if this is suspected. In this setting, swabbing the endocervix may produce bleeding. In fact, postcoital bleeding may be the presenting symptom.

Bimanual pelvic exam should be performed to evaluate anatomic pelvic abnormalities such as fibroids or ovarian cysts. However, even in the best hands pelvic exam is not sufficient to detect intracavitary fibroids or polyps, necessitating ultrasound.

### Treatment

In the non-pregnant patient, AUB can represent the urgent problem itself if associated with hemodynamic compromise.

If active bleeding is associated with orthostatic

changes and low hemoglobin level, then referral to a facility that can provide both transfusion and possible surgical intervention will be necessary. However, if the patient is stable, then treatment of the bleeding depends on whether the source is irregular endometrial shedding associated with anovulation, is from an anatomic source such as fibroid or polyp, or is from other cause.

Pharmacologic treatment for the irregular endometrial shedding and bleeding relies upon the vessel stabilization effects of estrogen, and the stromal effects of a progestin. When using a combined hormonal approach, the drawback is that the combination produces some endometrial growth which may subsequently result in heavier bleeding. Such is the drawback with high-dose estrogen, as well.

Hormonal monotherapy with either a progestin or estrogen can be employed with differing expectations. Many providers use a progestin only for anovulatory bleeding. The endometrium, being at varying stages of maturation, is then converted to a uniform state of maturation prepared for shedding, similar to the natural menstrual cycle. The bleeding should occur a few days following the course of progestin.

Some of the different proposals, in summary:

- Low-dose OCP qid x 3 d, tid x 3d, bid x 3 d then qd until stopped for menses
- Conjugated equine estrogen 10 to 20 mg/day PO (2.5 mg – 5 mg qid)
- IV Estrogen 25 mg q 4 x 24 hours
- 10 mg medroxyprogesterone qd PO x 10 days

### Pregnant patients

The importance of establishing whether the patient with AUB is pregnant cannot be understated. There are many different brands of tests to detect the presence of HCG in the urine, and it is important for the provider to be familiar with the specifics of the one they rely upon. Many providers have come to consider the pregnancy test a “vital sign” of a woman with abdominal pain or vaginal bleeding.

Most such tests will detect enough HCG in the urine at 10 to 14 days post-conception to be positive. In some circumstances, the urinary qualitative test may be more accurate than a qualitative blood test due to the presence of serum heterophilic antibodies to the assay's anti-HCG antibody. Such heterophilic antibodies are produced in response to animal-derived antigens, and are thus more common in patients with animal exposures. The heterophilic antibodies are not present in urine. Thus, care needs to be exercised when interpret-



ing a serum qualitative result.

A menstrual history and gestational history should focus on risk factors for miscarriage and ectopic pregnancy. Prior tubal infection or surgery is significant, as roughly one third of all pregnancies following sterilization are ectopic. However, half of women with an ectopic pregnancy have no risk factors or physical finding. Last menstrual period may be reliable in a woman with regular cycles, but one must use caution when seeking to rely on this factor to determine the duration of pregnancy.

Most providers will not have a quantitative HCG level available in a timely fashion and will make a determination based on history, risk factors, and physical exam. However the provider should be familiar with the discriminatory zone for transvaginal ultrasound (TVUS) at their institution. These will usually be in the range of a serum HCG level between 1,500 mIU/mL and 2,000 mIU/mL; this is the HCG level at which the findings on TVUS should confirm an intrauterine singleton pregnancy based on a gestational sac either with or without a yolk sac, as well. There are exceptions to this, such as multifetal gestations or guided intrafallopian transfer. The risk of simultaneous intrauterine pregnancy and co-existent tubal pregnancy is approximately 1/3,000.

Though serum progesterone levels may not be applicable to the decision-making in the urgent care setting, they may be useful in longer-term management. Low progesterone level (<5 ng/mL) is highly associated with an abnormal pregnancy; levels >20 ng/mL are associated with normal pregnancy.

Also helpful in long-term assessment will be serial HCG levels. In a normal pregnancy, the HCG level should double every 1.4 to 2.1 days, but there are many different interpretations as to what constitutes a “normal” rise, and this must always be used in conjunction with other testing and the clinical picture.

Bleeding from a pregnancy located within the uterus during the first trimester can be associated with a viable or nonviable pregnancy. Such pregnancies are described as threatened abortion, incomplete abortion, or complete abortion.

(An important note regarding patient communications: Experience should tell us to be quite careful using the term “abortion” when discussing this with the patient. Be prepared to answer concerns and engage in patient education.)

A *threatened abortion* occurs with first trimester bleeding, a closed cervical os, and ultrasound or laboratory findings, if present, still consistent with a normal pregnancy. This is often assumed to be a result of implantation bleeding.

If the cervix is open or tissue has been passed, then it is an *incomplete abortion*.

If all the tissue has been passed, then it is a *complete spontaneous abortion*; however, this is typically a diagnosis made after HCG follow-up.

The management of first trimester bleeding starts with establishing hemodynamic status and patient comfort. Either one of these may indicate the need for emergent uterine evacuation or laparoscopy for ectopic pregnancy. Not every patient with an incomplete abortion needs to undergo a surgical evacuation, and the decision to proceed with one depends on the patient’s hemodynamic status and personal choice.

In such a situation, consultation with an obstetrician should be considered.

Once beyond the first trimester, patients typically have a known estimated gestational age (EGA), with the evaluation including both fetus and mother. A specific age for fetal viability is not established, and is more strongly correlated with fetal weight.

Following the first trimester, it is safer to assume there is no estimated EGA that can completely eliminate concerns over potential viability, as many procedures (including tocolysis and cerclage) may delay a delivery long enough for a pregnancy to reach viability. Since the diagnostic considerations include cervical incompetence, preterm labor, abruptio placenta, and placenta previa, the evaluation should be done in a setting suitable for surgical interventions; transfer is appropriate.

Some ectopics are now managed medically using methotrexate (MTX) if they are less than 3.5 cm dilated, unruptured, and have no fetal cardiac activity. Serum HCG level will determine dosing, and many treatment protocols exist.

It is important to note that MTX is a folic acid antagonist which inhibits DNA metabolism, with greatest impact on rapidly dividing cells. When MTX is used, be sure to instruct the patient to discontinue prenatal vitamins or other folic acid supplementation.

Other diagnoses, besides ectopic pregnancy and miscarriage, to consider with pain and bleeding in the first trimester include intrauterine pregnancy (IUP) with ruptured corpus luteum, appendicitis or abdominal pathology, and ovarian or fibroid torsion. When considering ruptured corpus luteum cyst, supplementation with natural progesterone should be provided.

First trimester vaginal bleeding in the presence of fetal cardiac activity either threatens miscarriage or, if the cervix is opened or tissue has been passed, portends an inevitable miscarriage. Care should be taken, because

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the external os of the multiparous patient can be open, giving the impression of a dilated cervix, yet the internal os remains tightly closed. In addition, retracted fibrin in aged clots can take on a whitish appearance similar to actual products of conception.

The treatment for threatened miscarriage is expectant management. The patient's hemoglobin and blood type should be checked and Rh sensitization prophylaxis given as indicated. Treatment for inevitable or incomplete miscarriage can be individualized to the patient, with both uterine evacuation and expectant management allowing the patient to pass the products spontaneously; both are acceptable. With expectant management, close follow-up is needed to monitor hemoglobin, evidence of infection, and following the HCG to zero.

## Summary

Occasionally, most urgent care clinicians will encounter a patient whose visit was initiated by concern over abnormal gynecologic bleeding. Managing such encounters effectively requires a working understanding of likely etiologies and the role demographics and history play in considering differential diagnoses, as well as an appropriate level of suspicion regarding the patient's confirmed or suspected gravidity. Each of these factors will influence the decision to treat, to consult, or refer to a specialist. ■

## Resources

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