ABNORMAL UTERINE BLEEDING

Authors: Jennifer Cate MD, Linda Fan MD, and Shefali Pathy MD MPH

Introductory Case

A 39-year-old G2P2 with a past medical history of type II diabetes and chronic hypertension presents with concerns of heavy menses that started six months ago. She notes that her menses have always been painful; however, the amount of bleeding has increased over this time.

Patients with abnormal uterine bleeding (AUB) pose an interesting opportunity for evaluation of the etiology of the bleeding. In order to fully evaluate these patients, one must first recognize that there is a broad differential diagnosis that includes both anatomic /structural abnormalities as well as nonstructural causes. Treatment of these patients should be tailored to the specific etiology.

Milestone-Based Focused Questions

LEVEL 1: DEMONSTRATES BASIC KNOWLEDGE ABOUT COMMON AMBULATORY OB/GYN CONDITIONS

HOW IS ABNORMAL UTERINE BLEEDING (AUB) DEFINED?

- According to ACOG, "Abnormal uterine bleeding (AUB) may be acute or chronic and is defined as bleeding from the uterine corpus that is abnormal in regularity, volume, frequency, or duration and occurs in the absence of pregnancy."
- The duration of normal menstrual flow usually lasts 5 days with cycles between 21 and 35 days.
- AUB encompasses the terms heavy menstrual bleeding and intermenstrual bleeding (bleeding between periods).
- AUB can be classified by the International Federation of Obstetrics and Gynecology (FIGO) PALM-COIEN nomenclature, described below.

DESCRIBE IMPORTANT COMPONENTS OF THE HISTORY WHEN ASSESSING AUB

- Age of menarche and assessment of menopause (recognizing the evaluation and management of postmenopausal bleeding differs significantly from AUB)
- Menstrual bleeding patterns (how many days of bleeding per cycle, how many tampons/pads per day, assessment of episodes of soaking or “leaking,” frequency of bleeding, assessment of any intermenstrual bleeding)
- Presence of pain
- Other medical conditions that could be contributing
- Obstetric history (including history of postpartum hemorrhage)
- Surgical history
- Use of medications
- Symptoms of possible bleeding disorders, such as easy bruising or epistaxis

WHAT ARE SOME OF THE COMMON ETIOLOGIES OF AUB?

PALM	COEIN
Polyp	Coagulopathy
Adenomyosis	Ovulatory Dysfunction
Leiomyoma	Endometrial
Malignancy/Hyperplasia	Iatrogenic
	Not otherwise classified

LEVEL 2: FOR COMMON GYN CONDITIONS, PERFORMS INITIAL ASSESSMENT, FORMULATES DIFFERENTIAL DIAGNOSIS AND INITIATES EVALUATION AND TREATMENT.

FOR THE COMMON CAUSES OF AUB, WHAT IS THE ASSESSMENT AND MANAGEMENT?

Common disease states	Pertinent History and Physical Exam	Evaluation
Structural: Polyp, adenomyosis, fibroids, malignancy/hyperplasia	Menstrual bleeding patterns Pain with menses Bulk symptoms Constipation Weight loss Fatigue Increase in abdominal girth Vital Signs: Assess for hemodynamic instability (tachycardia and hypotension) Abdominal exam Speculum/bimanual exam	Don't ever forget the HCG! CBC TSH Consider Prolactin Cervical cancer screening Sexually transmitted infection screening Endometrial biopsy (see below) Imaging may include: Transvaginal ultrasound Sonohysterogram Hysteroscopy MRI
Coagulopathy	Elicit history including Gingival bleeding Excessive bleeding from small injuries (for example shaving) Petechiae Ecchymoses Skin pallor Swollen joints Abdominal exam	Don't ever forget the HCG!! CBC with platelets PT/PTT VonWillebrand Panel (ristocetin cofactor, VWF, Factor VIII)

	Speculum/ bimanual exam	
Ovulatory **Can include physiologic anovulation such as perimenarche and perimenopause, as well as pathologic anovulation such as polycystic ovary syndrome (PCOS), obesity, thyroid disorder, hyperprolactinemia**	History of glucose intolerance or diabetes Menopausal symptoms Hirsutism Acanthosis nigricans Acne	Don't ever forget the HCG!! CBC TSH Prolactin Fasting glucose Consider insulin levels, hemoglobin A1C DHEAS (adrenal androgen) 17 Hydroxyprogesterone (for evaluation of congenital adrenal hyperplasia) Testosterone (total and/or free)
Endometrial	History of regular periods with typical ovulatory cycles and no other findings History of pelvic infection such as endometritis	Diagnosis of exclusion
Iatrogenic	Anticoagulation Hormonal contraception Other medications	
Not otherwise classified		

WHEN IS ENDOMETRIAL SAMPLING INDICATED IN THE ASSESSMENT OF AUB?

- The primary role of endometrial sampling in patients with AUB is to determine whether carcinoma or premalignant lesions (i.e., hyperplasia) are present.
- The following situations warrant endometrial sampling:
    - AUB in any woman over 45 years old
    - AUB in any patient less than 45 years old with risk factors of unopposed estrogen including obesity, PCOS, diabetes, failed medical management or persistent AUB
- One may attempt office endometrial biopsy but if the lesion is <50% of the cavity, cancer can be missed by a blind sampling, thus persistent bleeding or bleeding unresponsive to initial treatment requires further evaluation such as dilation and curettage (D&C)

LEVEL 3: FOR COMPLEX GYN CONDITIONS, FORMULATES PLAN AND INITIATES TREATMENT.

WHAT ARE SOME OF THE TREATMENT OPTIONS FOR AUB?

- If the underlying etiology is structural, remove of the structural abnormality. If there is any concern for malignancy or hyperplasia, endometrial sampling is indicated via endometrial biopsy or D&C.
- If the underlying etiology is ovulatory dysfunction, regulation of ovulatory cycle may be achieved with hormonal modification. Weight loss may also assist with ovulatory regulation.
- If the underlying etiology is coagulopathy, consider hormonal modification. Tranexamic acid (a procoagulant) may be a helpful adjunct. Other medications to promote coagulation may also be used to treat specific bleeding disorders.

Etiology	Treatment
Structural: Polyp, adenomyosis, fibroids, malignancy/hyperplasia	In some cases, initial treatment with hormonal modification may be successful Definitive treatment is often surgical including hysteroscopic myomectomy, polypectomy, abdominal myomectomy, hysterectomy
Coagulopathy	Hormonal modification Tranexamic acid Other medications that promote coagulation
Ovulatory Can include physiologic anovulation such asperimenarche and perimenopause, as well as pathologic anovulation such as PCOS, obesity, thyroid disorder, hyperprolactinemia	Hormonal modification Weight loss for obesity and weight related PCOS Treatment of thyroid disorder or hyperprolactinemia
Endometrial	Hormonal modification Tranexamic acid Potential surgical management
Iatrogenic	Treat underlying issue
Not otherwise specified	

WHAT ARE SOME OF THE MEDICAL AND SURGICAL OPTIONS AVAILABLE FOR TREATMENT OF AUB?

Medical management of AUB can be considered if surgery is not warranted or patient is not a surgical candidate.

- Tranexamic acid is an anti-fibrinolytic, contraindications to use include thromboembolic disease, subarachnoid hemorrhage, acquired color vision loss
- Progestins may be used cyclically to induce normal cycles, or continuously to induce amenorrhea
- Combined oral contraceptives can also be used cyclically or continuously

- Depo medroxyprogesterone (Depo-provera) may induce amenorrhea, however it may initially result in irregular bleeding
- Progestin secreting intra-uterine devices (IUDs) have a high rate of amenorrhea and provide an additional advantage of highly effective long-lasting contraception
- Progestin contraceptive implant (Nexplanon) may improve heavy menstrual bleeding, but often results in persistent irregular bleeding
- Lupron has limited impact on improving AUB

Before proceeding to surgery, the following considerations are important:

- Establish diagnosis
    - For example, if the AUB is structural, it will be important to consider what procedure would best remove the structural abnormality
    - If surgical treatment is recommended, identifying underlying co-morbidities is important for pre-operative surgical planning to optimize surgical care
- Determine method for removing structural abnormality
    - Extirpative surgery could include
        - Removal of the structural abnormality via polypectomy or myomectomy
        - Removal of the uterus via hysterectomy for definitive treatment if further childbearing is not desired

LEVEL 4: CARES FOR PATIENTS WITH COMPLEX PRESENTATIONS, USES A MULTIDISCIPLINARY APPROACH AND MAKES APPROPRIATE REFERRALS

WHAT ARE SOME TREATMENT CONSIDERATIONS FOR PATIENTS WITH COMPLEX MEDICAL ISSUES?

Some examples of complex patient presentations include abnormal bleeding in patients on anticoagulation for thromboembolic disease, with blood dyscrasias, or with significant cardiopulmonary disease.

- Other options for treatment of AUB include:
    - Uterine Artery Embolization (AUE) for symptomatic fibroids
        - Important considerations
        - Completion of fertility
        - Surgical candidacy
        - Patient counseling on postoperative pain, changes in vaginal discharge, possibility of fibroid extrusion
    - Endometrial ablation
        - Important considerations
            - Malignancy must be ruled out prior to procedure
            - Completion of fertility
            - Use caution in patients with pain, as post-ablative pain syndrome may result
            - May cause difficulties in future work up to exclude endometrial cancer

REFERENCES

ACOG Practice Bulleting 128: Diagnosis of abnormal uterine bleeding in reproductive-aged women. *Obstet Gynecol* 2012;197-206.

ACOG Practice Bulletin 149: Endometrial Cancer. *Obstet Gynecol* 2015;125:1006-26.

Munro MG, Critchley HOD, Fraser IS, et al. The Two FIGO Systems for Normal and Abnormal Uterine Bleeding Symptoms and Classification of Causes of Abnormal Uterine Bleeding in the Reproductive Years: 2018