



Abnormal Uterine Bleeding

Ed Day (10/1/25)
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No disclosures



Objectives

- Define abnormal uterine bleeding
- Learn to identify key signs and symptoms
- Review diagnostics
- Discuss management strategies for different etiologies



Case

A 36yo woman presents to your clinic with a CC of heavy periods.



Additional History

For the past 8 months, pt has had cycles occurring every 24-35 days, lasting 10-12 days at a time. She describes passage of large clots and symptoms of fatigue. She is not pregnant.



Definition

- Per 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”



Back to our patient...

-Normal frequency (typically 24-35 days), though abnormal volume and duration. She is also not pregnant.

-Describes passage of “large clots” (*atypical if pads/tampons are changed more frequently than every 2 hours or more than 5 are used per day*) and “cycles lasting 10-12 days” (*Normal cycles last fewer than 8 days*)



Physical Exam

VSS

General: NAD

HEENT: PERRL, MMM

CV: RRR

Pulm: CTAB

Abd: NTPP, normal-sized, mobile uterus



PALM-COEIN

P - Polyp

A - Adenomyosis

L - Leiomyoma

M - Malignancy/hyperplasia



PALM-COEIN

C - Coagulopathy

O - Ovulatory dysfunction

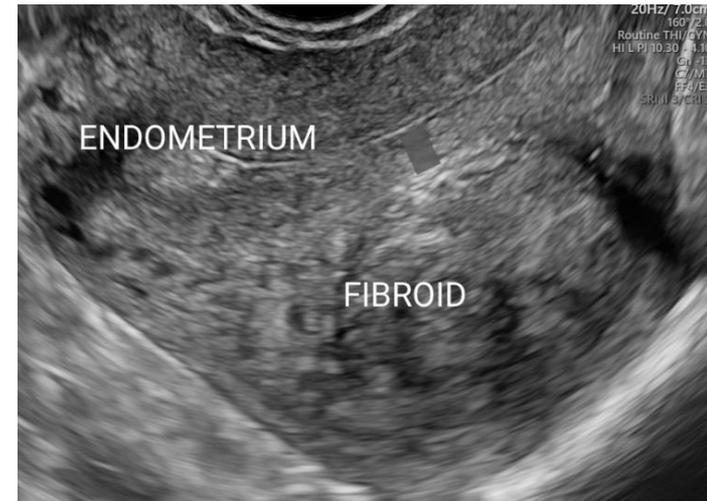
E - Endometrial

I - Iatrogenic

N - Not yet classified

Work-Up

- Labs: Pregnancy test (negative), CBC (Hgb 9.8)
- Imaging: US (Multiple intramural and submucosal leiomyomas)





PALM-COEIN

L - Leiomyoma (fibroids)

First line therapy: hormonal IUDs, OCPs, NSAIDS

Refractory therapy: myomectomy, hysterectomy, endometrial ablation

Hormonal IUDs

Levonorgestrel-releasing IUDs (e.g. Mirena, Liletta, Kyleena, Skyla) induce endometrial glandular atrophy and decidualization, leading to a thin, inactive endometrial lining resistant to estrogen stimulation, which reduces menstrual blood loss and can also induce amenorrhea





Oral Hormones

Combined oral contraceptives: Stabilize the endometrial lining and suppress the hypothalamic-pituitary-ovarian axis by providing exogenous estrogen and progestin, which regulates menstrual cycles and reduces unscheduled bleeding

Oral progestins: Stabilize the endometrial lining and suppress endometrial proliferation, reducing and eventually stopping bleeding



NSAIDs

Inhibit prostaglandin synthesis (blocking COX1 and COX2), reducing endometrial vasodilation and capillary permeability, thereby reducing bleeding

*Less effective than levonorgestrel IUDs and TXA for heavy bleeding

*Contraindicated in pts with bleeding disorders



TXA

Tranexamic acid inhibits fibrinolysis (binding to plasminogen and preventing it from binding to fibrin and being converted to plasmin which degrades fibrin) within the endometrium, stabilizing blood clots and reducing bleeding

TABLE 4

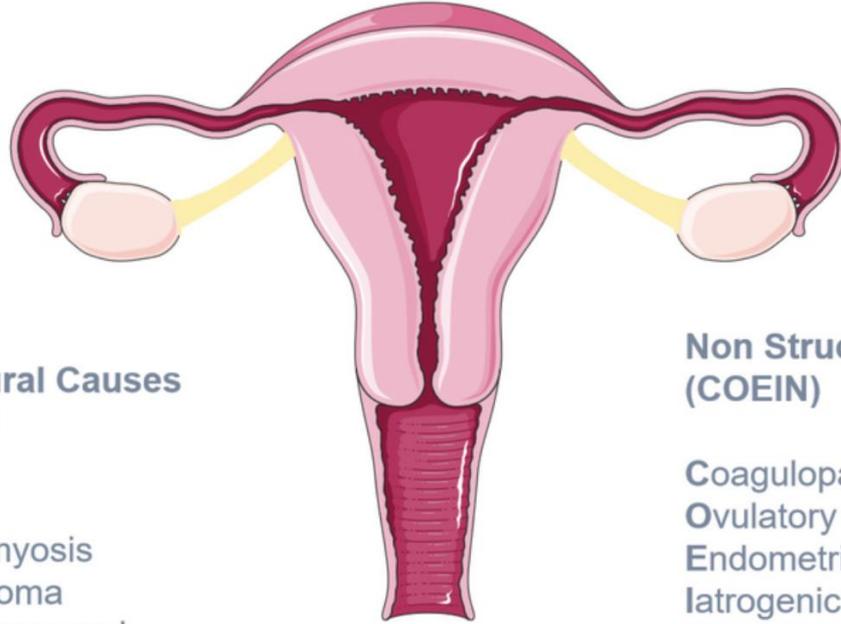
Treatment Options for Medical Management of Abnormal Uterine Bleeding

Drug	Suggested dosage	Notes
Acute bleeding		
Conjugated equine estrogen	Hemodynamically unstable: 25 mg intravenously every 4 to 6 hours for up to 24 hours Hemodynamically stable: 2.5 mg orally every 6 hours for 21 days	Follow treatment with a progestin to provoke withdrawal bleeding; do not use in patients at increased risk of thrombosis
Estrogen-progestin oral contraceptives	1 monophasic pill containing 35 mcg of ethinyl estradiol orally 3 times daily for 7 days	Other regimens also effective; do not use in patients at increased risk of thrombosis
Progestins	Norethindrone, 5 mg orally 3 times daily for 7 days	Other high-dose oral progestins are also effective
Tranexamic acid	10 mg per kg intravenously every 8 hours or 20 to 25 mg per kg orally every 8 hours	Faster onset if given intravenously; do not use in patients at increased risk of thrombosis
Chronic bleeding		
Depot medroxyprogesterone (Depo-Provera)	150 mg intramuscularly or 104 mg subcutaneously every 13 weeks	Unscheduled bleeding is a common initial adverse effect, but one-half of patients become amenorrheic after 12 months of use
Estrogen-progestin oral contraceptives	1 monophasic pill containing 35 mcg of ethinyl estradiol daily	Other routes (transdermal patch, intravaginal ring) are likely also effective; regimens with no or fewer hormone-free intervals may be more effective
Levonorgestrel	52-mg (20-mcg-per-day) intra-uterine device (Mirena)	Effectiveness data are based primarily on trials involving the 20-mcg-per-day device; effect on bleeding suppression may wane before contraceptive effectiveness expires
Nonsteroidal anti-inflammatory drugs	Naproxen, 500 mg orally 2 times daily	Other oral nonsteroidal anti-inflammatory drugs are also effective; administer only while patient is bleeding; do not use in patients with coagulopathy
Progestins	Norethindrone, 2.5 to 5 mg orally once daily	Other oral progestins are also effective; administration during only the luteal phase is significantly less effective for treating heavy bleeding
Tranexamic acid (Lysteda)	1,000 to 1,500 mg orally 3 times daily	Faster onset if given intravenously; do not use in patients at increased risk of thrombosis

Note: The 2016 U.S. medical eligibility criteria for contraceptive use, published by the Centers for Disease Control and Prevention (<https://www.cdc.gov/mmwr/volumes/65/rr/rr6503a1.htm>), can be referenced to guide the use of the hormonal treatments listed in this table.

Information from references 37 through 42.

PALM - COEIN Classification



Structural Causes (PALM)

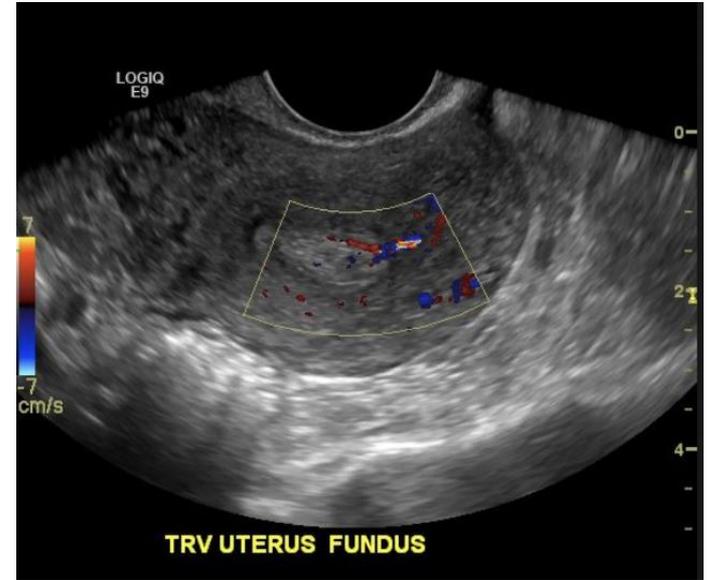
Polyp
Adenomyosis
Leiomyoma
Malignancy and
Hyperplasia

Non Structural Causes (COEIN)

Coagulopathy
Ovulatory Dysfunction
Endometrial
Iatrogenic
Not Otherwise Classified

P - Endometrial Polyp

- Presentation: Most commonly intermenstrual bleeding
- Diagnosis: Pregnancy test, CBC, TVUS, hysteroscopy (gold standard), endometrial sampling for women with RFs (such as age >45, obesity, or persistent AUB despite medical therapy)
- Management: Hysteroscopic polypectomy (allows removal and histopathologic assessment to exclude malignancy), can start medical management (OCPs, hormonal IUD, NSAIDs) if surgery delayed

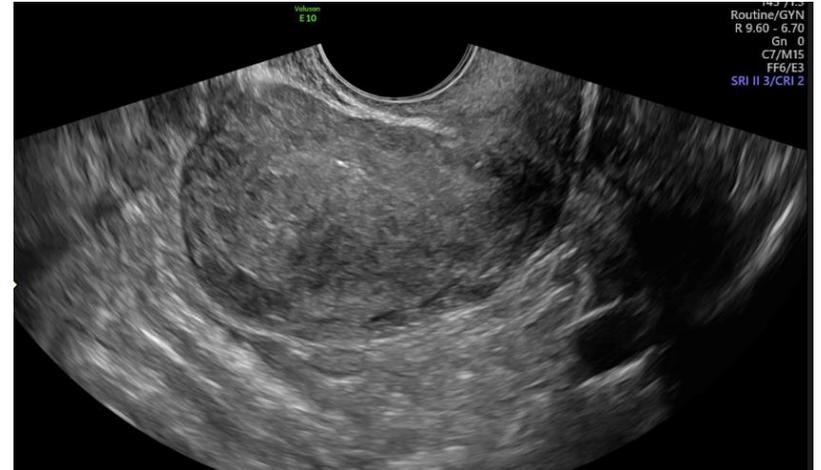


A - Adenomyosis

-Presentation: The benign presence of endometrial glands and stroma within the myometrium, usually presenting with heavy/prolonged periods and dysmenorrhea, usually in women aged 35-50

-Diagnosis: TVUS (heterogeneous myometrium, myometrial cysts, globular/enlarged uterus, ill-defined junctional zone), consider pelvic MRI if US equivocal

-Management: Hormonal IUDs (first line, esp in women desiring uterine preservation or fertility), hysterectomy is the definitive treatment





M - Malignancy/hyperplasia

-Presentation: Recurrent AUB or AUB with RFs (obesity, chronic anovulation e.g PCOS, nulliparity, HTN, Lynch syndrome, hx endometrial polyps)

-Diagnosis: Pregnancy test, CBC, TSH, possibly coags and prolactin depending on clinical context, EMB (postmenopausal, age 45 and up, risk factors, medical management not successful, persistent/recurrent intermenstrual bleeding)

-Management:

confirmed -Hyperplasia w/o atypia: Progestin therapy (oral or IUD) with repeat EMB in 3-6mo or until regression

recurrence) -Atypical hyperplasia: Hysterectomy vs progestin therapy with close surveillance (though high risk of

-Endometrial carcinoma: Gyn Onc referral, total hysterectomy



C - Coagulopathy

-Presentation: Heavy bleeding since menarche, frequent epistaxis, easy bruising, prolonged bleeding after procedures, family hx of bleeding disorders

-Diagnosis: CBC, iron studies, coags, if c/f von Willebrand's (vWF antigen, ristocetin cofactor activity, factor VIII activity)

-Management: TXA (1g PO TID), hormonal therapies (IUD, OCP, oral progestins), hematology referral

Coagulopathies

Factor deficiencies

Platelet dysfunction

Thrombocytopenia

von Willebrand disease



O - Ovulatory dysfunction

-Presentation: Often irregular, heavy, or prolonged menstrual bleeding

-Diagnosis: TSH, prolactin, if PCOS suspected (free/total testosterone, DHEAS, 17-OHP, TVUS), FSH, LH, estradiol

-Management:

- Correction of thyroid dysfunction or hyperprolactinemia

- For PCOS, OCPs, hormonal IUD, spironolactone, metformin, weight loss if elevated BMI

- Pulsatile GnRH or gonadotropin therapy for hypogonadotropic hypogonadism, possible donor oocytes for hypergonadotropic hypogonadism

Ovulatory dysfunction

Androgen excess

- Androgen insensitivity syndrome

- Hormone-producing tumors

- Polycystic ovary syndrome

Hypothalamic-pituitary-adrenal axis dysfunction

- Congenital adrenal hyperplasia

- Cushing syndrome/disease

- Hyperprolactinemia

- Immature hypothalamic-pituitary-adrenal axis (adolescence)

- Intense exercise, stress

- Lactational amenorrhea

- Ovarian follicle decline (perimenopause)

- Starvation (including eating disorders)

- Thyroid disorders

- Tumors, radiation, or trauma of the pituitary/hypothalamus area

Premature ovarian failure



E - Endometrial

- Presentation: Nonstructural disorders of the endometrium resulting in abnormal bleeding in the absence of anatomic lesions, coagulopathy, or ovulatory dysfunction (e.g disorders of local endometrial hemostasis, inflammation, or infection)
- Diagnosis: Diagnosis of exclusion: Excluding hyperplasia/neoplasia with EMB, excluding structural causes with transvaginal US, excluding other systemic causes with pregnancy testing, CBC, coags, TSH, etc.
- Management: Hormonal IUDs, TXA, NSAIDS, OCPs



I - Iatrogenic

-Presentation: AUB in the setting of medication/device use, including hormonal therapies (OCPs, GnRH agonists), anticoagulants, or IUDs. These treatments can cause endometrial instability, alter vascular maturation, or disrupt coagulation pathways.

-Diagnosis: Identifying the offending agent, paying particular attention to recent changes or initiation of medications/devices

-Management: Discontinuing or modifying the offending agent

Iatrogenic

Anticoagulants

Antidepressants

Antipsychotics

Chemotherapeutic agents

Copper intrauterine device

Corticosteroids

Hormonal contraception or other hormone therapy

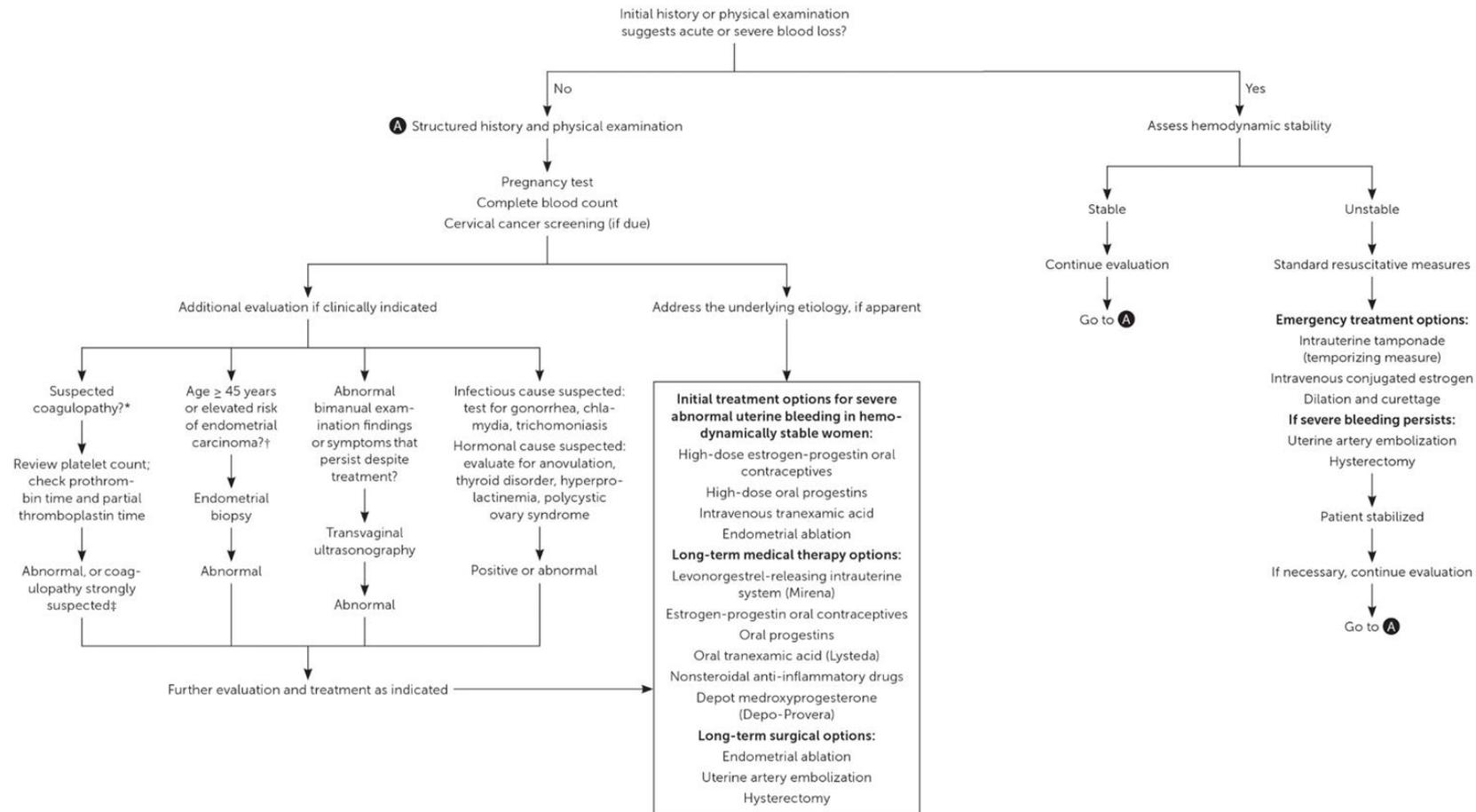
Phenytoin (Dilantin)

Tamoxifen



N - Not yet classified

- Presentation: Poorly understood conditions, rare conditions, or other conditions that do not fit into the PALM-COEI categories, including AV malformations, C-section scar defects, etc.
- Diagnosis: Another diagnosis of exclusion
- Management: IUDs, OCPs, NSAIDs





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Thank you!

Questions?