

Abnormal Uterine Bleeding in Reproductive Age Women

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Disclosures

- None

- Abnormal Uterine Bleeding = AUB
- Reproductive Age Women

Objectives

- Describe common presentations and etiologies of AUB
- Discuss diagnosis and evaluation of AUB
- Describe office based management of AUB

Abnormal Uterine Bleeding (AUB)

• Definition

- Any change in menstrual period
 - Flow
 - Duration
 - Frequency
 - Bleeding between cycles

Abnormal Uterine Bleeding

- 1/3 of all outpatient gynecological visits
- Affects 50% of menstruating women worldwide at some time
- 4 out of 5 women with AUB have no anatomic pathologic condition
- Accounts for 50% of hysterectomies in the US

Case 1:

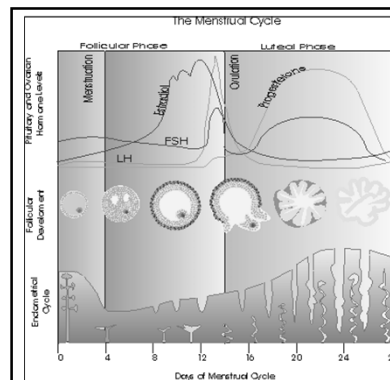
- 22 year old G0P0 presents for well woman care. She is concerned about her periods becoming irregular. She describes her cycles as coming the 18th one one month and the 16th the next month. She never knows when it is coming.
- How would you counsel this patient?

What is a normal Menstrual Cycle?

- Cycle length
 - 21-35 days (Adults)
 - 21-45 days in young teens
 - Average 28 days
- Duration 2-7 days
 - Average 4 days
- Volume
 - 10-80 ml
 - Average 30-35 ml

Menstrual Cycle

- Follicular
 - Begins with menses and ends with LH surge
- Ovulation (30-36 hours)
 - Begins with LH surge and ends with ovulation
- Luteal (14 days)
 - Begins with the end of the LH surge and ends with the onset of menses



Phases of the Menstrual Cycle

Phases of the Menstrual Cycle Endometrium

- Proliferative
 - Begins with menses and ends at ovulation
- Secretory
 - Begins at ovulation and ends with menses

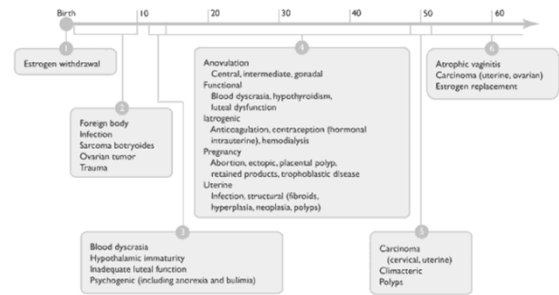
Old Terminology

- Amenorrhea – absence of flow for 3 usual cycle lengths
- Oligomenorrhea – cycle length > 35 days
- Polymenorrhea – cycle length < 24 days
- Menorrhagia – regular cycle with heavy volume or duration of flow
- Metrorrhagia – irregular intervals of bleeding but light or normal volume and duration
- Menometrorrhagia

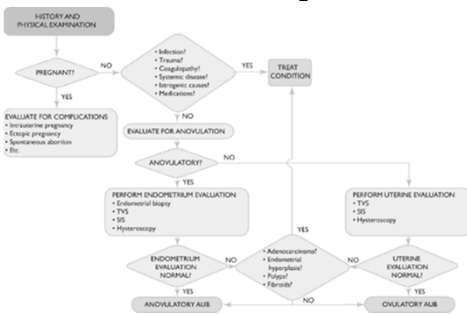
New Terminology

- Heavy Menstrual Bleeding
 - Acute
 - Chronic
- Intermenstrual Bleeding

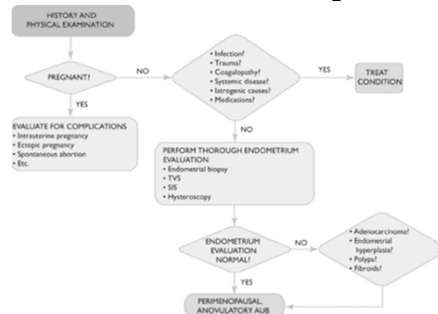
Usual Causes of AUB Throughout a Woman's Lifetime



Evaluation of AUB in Premenopausal Women



Evaluation of AUB in Perimenopausal Women



History for AUB

- HPI
- Onset
- Quantity
 - Spotting or Heavy
 - Daily or Intermittent
- Duration

History for AUB

- Associated Symptoms
 - Pain
 - Dysmenorrhea
 - Menstrual Changes
 - Timing
 - Flow (clots)
 - Frequency
 - Fever/chills
 - Changes in hair/ body
 - Bruising/bleeding
 - Rectal/urethral bleeding
 - Nausea/vomiting

Other Important Details

- **Family History**
 - Anyone else?
 - Von Willebrand's
 - PCOS
- **PSH**
- **Nutrition and Exercise**
 - Weight changes
 - Exercise habits
 - Diet
- **PMH**
 - Chronic conditions
 - Liver disease
 - Kidney disease
 - Anemia
 - Drugs/medications
 - Psychiatric medications
 - Thyroid Disorders
 - Blood thinners

Differential Diagnosis Of AUB

- **Structural:** PALM-COEIN
(Non Gravid Women)
- **Life Cycles:** Pre-menarche
Menarche
Reproductive
Post-Menopause
- **Anatomic:** "Bottoms Up"

PALM-COEIN

- FIGO Classification System (PALM-COEIN) for causes of AUB in non-pregnant women
- Structural versus Non-Structural
- Developed to create a universally accepted nomenclature

PALM Structural Causes

- P* - Polyp (AUB-P)
- A* - Adenomyosis (AUB-A)
- L* - Leiomyoma (AUB-L)
 - Submucosal myoma (AUB-L_{SM})
 - Other myoma (AUB-L_O)
- M* - Malignancy & hyperplasia (AUB-M)

COEIN Non-Structural Causes

- C*- Coagulopathy (AUB-C)
- O*-Ovulatory dysfunction (AUB-O)
- E*- Endometrial (AUB-E)
- I*- Iatrogenic (AUB-I)
- N*- Not yet classified (AUB-N)

AUB-O

- Abnormal Uterine Bleeding with ovulatory dysfunction
- Heavy, irregular bleeding

Case

Causes of Anovulation:

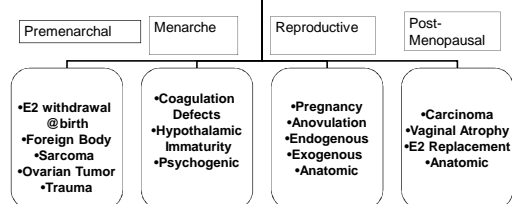
Physiologic

- Adolescence
- Menopause Transition
- Lactation
- Pregnancy

Causes of Anovulation Pathologic

- *Hyperandrogenic anovulation (e.g., PCOS, CAH, or androgen-producing tumors)*
- *Hypothalamic dysfunction*
- *Hyperprolactinemia*
- *Thyroid disease*
- *Pituitary disease*
- *Premature ovarian failure*
- *Iatrogenic (Chemo)*
- *Medications*

Etiology of AUB Life Cycles Approach



Differential Diagnosis of AUB: Structural

- “Bottoms Up”
- Vulva
- Vagina
- Cervix
- Ovary
- Brain
- Contiguous Anatomy
- GU
- GI
- Non-Pelvic Etiology
- Endogenous
- Iatrogenic

Vulvar

- Infections
- HPV
- Atrophy
- Benign Lesions
- Cancerous lesions
- Dermatologic Causes

PHYSICAL EXAM: INSPECTION IS IMPORTANT

Vagina

- Malignancy
 - Carcinoma
 - Sarcoma
- Infections
- Foreign Bodies
 - Diaphragm, Pessary
 - Tampon
 - Other
- Laceration/trauma
- Atrophic changes
- Granulomatous tissue
 - formed after surgery
 - post hysterectomy

Physical Exam: Inspection is important

Cervix

- Neoplasia
 - Cancer
 - Polyps
 - Myomas
- Cervical Eversion (Ectropion)
- Infection
 - Cervicitis
 - Condyloma Acuminata

IMPORTANT:
Visualize the Cervix!

Uterus

- Myomas
- Polyps
- Endometrial Hyperplasia
- Endometrial Carcinoma
- Atrophy

PHYSICAL EXAM: Bimanual Exam checks enlargement

Ovary

- Anovulation
- PCOS
- Menopause Transition

Pathophysiology Etiologies Of AUB

- Estrogen Withdrawal
- Estrogen Breakthrough
- Progesterone Withdrawal

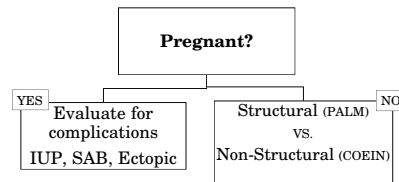
Initial Assessment of AUB

- Acute
- Sub-Acute
- Chronic

Initial Assessment of AUB

- History & Physical
 - Vital Signs
 - Shock Signs
- Laboratory
 - Pregnancy Test
 - Complete Blood Count

Evaluation of AUB



Evaluation of AUB

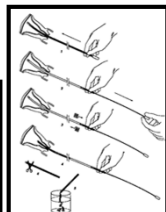
- **Evaluation of the Endometrium**
 - **Pregnancy test**
 - Endometrial Biopsy
 - Transvaginal &/or abdominal Ultrasound (TVS/AUS)
 - Saline Sono-hysteroscopy (SIS)
 - Hysteroscopy
- **Evaluation of the Uterus**
 - TVS
 - SIS
 - Hysteroscopy

Diagnostic Techniques in AUB

- Endometrial biopsy
- Transvaginal Ultrasonography (TVS)
- Hysteroscopy
- Saline infusion sonography (SIS)
- Magnetic resonance imaging (MRI)

Endometrial Biopsy (EMB)

- Evaluation of the Endometrium
 - Pipelle



Endometrial Biopsy

- Safe, relatively simple procedure useful in perimenopausal or high risk women
- Not sensitive for detecting structural abnormalities (eg. Polyps or fibroids)
- Office-based techniques (gold standard replacing D&C)
 - Disposable devices (eg. Pipelle, Tis-u-Trap, Accurette, Z-sampler)
 - Reusable instruments (eg. Novak Curette, Randall Curette, Vabra Aspirator)

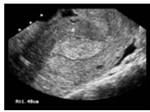
Transvaginal Ultrasound

- To assess for thickened endometrium
- In 92% of abnormal endometrial biopsies, ultrasound showed >5mm endometrium
- In 96% of endometrial cancer by biopsy result, ultrasound showed >5mm endometrium
- Therefore, ultrasound measured endometrium <5mm is likely benign uterine condition

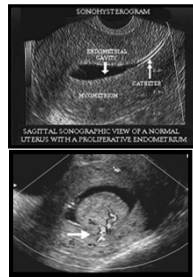
Transvaginal Ultrasonography (TVS)

- Inexpensive, noninvasive, and convenient
- Indirect visualization of the endometrial cavity, myometrium, and adnexa
- Measurement of endometrial thickness (<4 mm vs. >4 mm in PMB)
- May be used to increase index of suspicion for endometrial atrophy, hyperplasia, cancer, leiomyomas, and polyps
- May not always distinguish among submucosal fibroid, polyp or adenomyosis

TVS & SIS

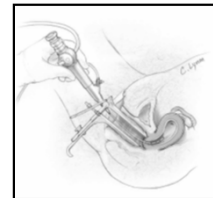


TVS



SIS

Hysteroscopy



MRI

- Precisely localizes sub-mucosal fibroids
- MRI is not superior to TVS & SIS in overall diagnostic potential

Dueholm M, et al. *Fertil Steril*. 2001;76(2):350357

Treatment of AUB

- Observation
- Medical
- Minimally invasive surgery
- Major surgery

Medical Management

- Iron
- Anti-fibrinolytics
- Progestins
- Estrogen + progestins (OCP)
- Parenteral estrogens
- Androgens
- GnRH agonists
- Anti-progestational agents

Office Based Procedures

- Intrauterine Device (IUD) with progesterone
- Dilution & Curettage
- Endometrial Ablation

Major Surgery

- Myomectomy
- Total Abdominal Hysterectomy (TAH)
- Total Vaginal Hysterectomy (TVH)
- Laparoscopic Hysterectomy
 - LSH (laparoscopic supra-cervical)
 - TLH (total laparoscopic)
 - LAVH (laparoscopically assisted vaginal hysterectomy)
 - Robotic (TLH or LSH)

Case

Management of Acute AUB

- Can be a life-threatening emergency
- Monitor Vital signs, Start oxygen
- IV fluids (wide bore IV catheter)
- Type and Cross 2-4 units of blood
- IV Estrogen
- IM Progesterone
- NSAIDS (Anti-prostaglandins vs. Anti-fibrinolytics)
- Emergency Dilatation and Curettage (D&C)

Treatment in Chronic, Stable AUB

- High dose OCP's to slow the bleeding
- Anovulatory Bleeding can be treated with progesterone alone
- Endometrial sampling is indicated prior to starting hormones in older women