

# **Dysfunctional Uterine Bleeding**

Seddah Moya, M.D.



# Objectives

- Review normal menses
- Review diagnosis and evaluation of DUB
- Review treatment and management of DUB

# Background

- Menorrhagia is a very common problem
  - 10-35% of women complain of heavy menses
  - 5% of women seek medical care annually for excessive menstrual bleeding
  - 50% of cases have no organic pathology
  - Iron Deficiency Anemia develops in 21-67% of cases

# Background

- Impact on quality of life
  - Absenteeism for work, school, sports
  - Sexual activity

# Normal Menses

- Mean interval: 28 days
  - +/- 7 days
- Mean duration of flow: 4 days
  - +/- 2 days
- <60 cc blood loss

# Normal Menses

- Menstrual cycle length peaks 25-30 years
- Cycle length most stable between age 20-40
- Menstrual cycle most irregular 2 years after menarche and 3 years prior to menopause
  - Anovulation common
  - Menstrual cycles can be shortened or prolonged

# Normal Menses – Physiology

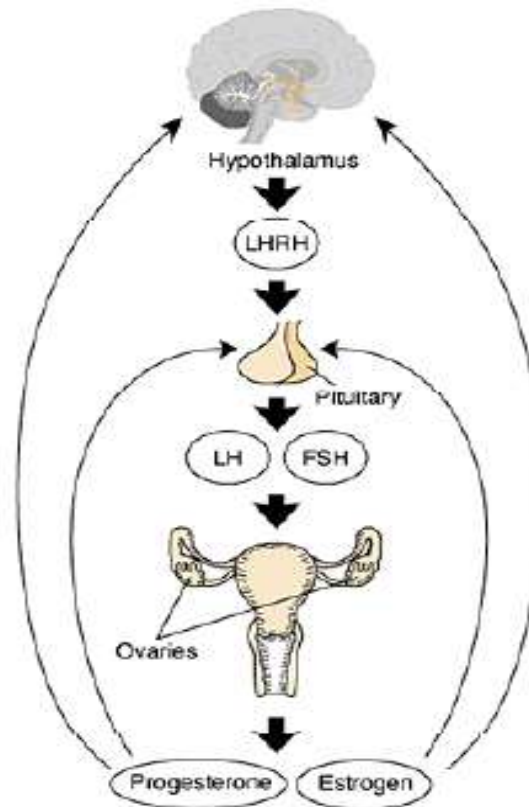
- Two phases of the cycle
  - Follicular
    - Starts with onset of menses
    - Ends with LH surge
  - Luteal
    - Starts with LH surge
    - Ends with onset of next menses

# Early Follicular Phase

- Ovary is hormonally inactive
  - Low serum estradiol and progesterone concentrations
  - Increase in GnRH pulse frequency
  - Increase in FSH
  - Slowing of LH pulses



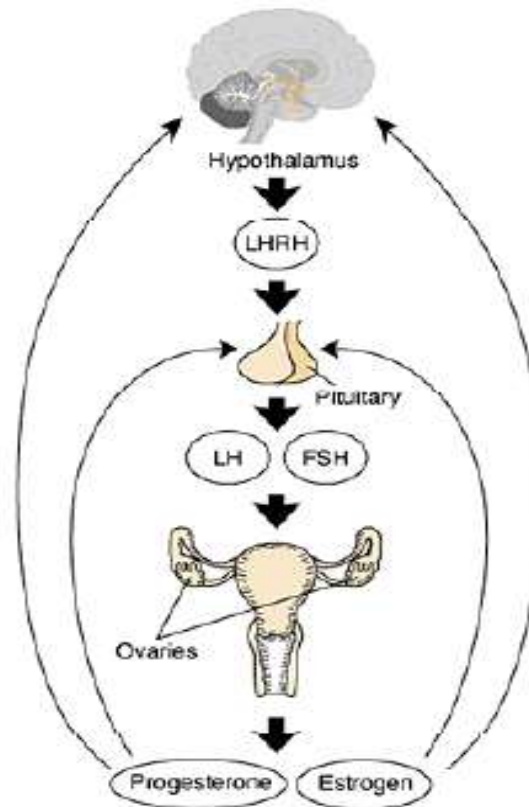
# Early Follicular Phase



# Mid-Follicular Phase

- FSH stimulates folliculogenesis and estradiol
  - Growth of cohort of follicles
- Increase in estradiol
  - Negative feedback – suppresses FSH/LH
- Dominant follicle is selected

# Normal Menses – Physiology



# Late Follicular Phase

- Estradiol and inhibin A increase
  - FSH and LH fall

# Luteal Phase

- LH surge
  - Switch from negative feedback from ovarian hormones to positive feedback
- Oocyte released from follicle 36 hours after LH surge
- Granulosa cells luteinize and produce progesterone
  - Acts to slow LH

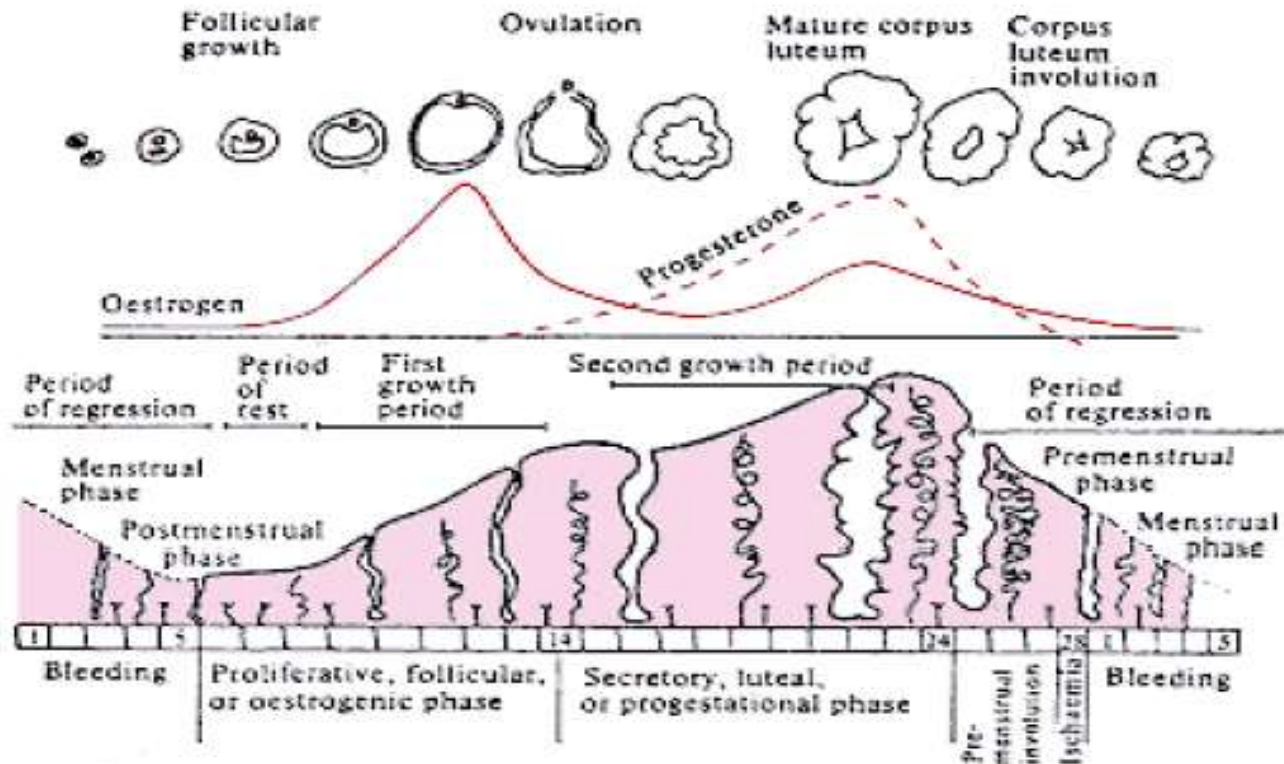
# Late Luteal Phase

- Corpus luteum produces progesterone
  - Slows LH pulses
- Decrease in LH
  - Decrease in estradiol and progesterone production
    - Loss of endometrial blood supply
    - Endometrial sloughing
    - Onset of menses in approximately 14 days

# Late Luteal Phase

- With falling corpus luteum production
  - Hypothalamic-pituitary axis released from negative feedback
  - FSH levels rise
  - The cycle begins again

# Normal Menses – Physiology





# Abnormal Uterine Bleeding

- Oligomenorrhea
  - Cycles > 35 days-6 months
- Amenorrhea
  - No menses > 6 months
- Excessive flow
- Prolonged duration of flow
- Intermenstrual bleeding

# Organic Causes of AUB

- Systemic Disease
  - Von Willebrand
  - Prothrombin deficiency
  - Thyroid dysfunction

# Von Willebrand Disease

- The most common inherited bleeding disorder
- 5-15% of women with menorrhagia
- 20% Women presenting with menorrhagia will have an underlying bleeding disorder

# Von Willebrand Disease

- Directed questions
- If positive screening history then
  - CBC
  - PT, PTT
  - Fibrinogen
- If positive prolonged PTT, referral to hematologist for further VWD testing

# Thyroid Dysfunction

- Hyperthyroidism
  - Amenorrhea, oligomenorrhea
- Hypothyroidism
  - Menorrhagia and intermenstrual bleeding
  - Incidence in patients with menorrhagia is 0.3% to 2.5%
  - Menorrhagia disappears 3-6 months after treatment is started

# Organic Causes of AUB

- Pregnancy Complications
  - Threatened ab
  - Incomplete or misses ab
  - Ectopic pregnancy
- Malignancy of genital tract
  - Endometrial
  - Cervix

# Organic Causes of AUB

- Anatomic uterine abnormalities
  - Submucous myomas
  - Endometrial polyp
  - Adenomyosis
- Infection of upper genital tract
- Foreign body
  - IUD

# Organic Causes of AUB

- Cervix
  - Cervicitis
  - Erosions
  - Polyps
- Iatrogenic
  - Anticoagulants
  - Hormonal treatment
  - Psychotropic drugs



# Cervical Polyp



# Dysfunctional Uterine Bleeding

- Diagnosed after organic, systemic, and iatrogenic causes have been ruled out
- Subdivided into ovulatory and anovulatory

# Diagnosis – History

- Menarche?
- When did AUB start?
- Family history?
- Medicines?
- Bruising and bleeding tendencies?

# Diagnosis – History

- Menses
  - Duration
  - Frequency
  - Flow
- Quantify Flow
  - How often do you change tampon/pad?
  - How many pads/tampons used in a single menstrual period?
  - Do you ever need to change pad/tampon at night?
  - Do you pass clot? How big?

# Evaluation – Physical Exam

- Signs of anemia
- Check skin
- Visualize cervix and external genitalia
- Bimanual exam
  - Size, contour, and tenderness of uterus
  - Adnexal masses or tenderness

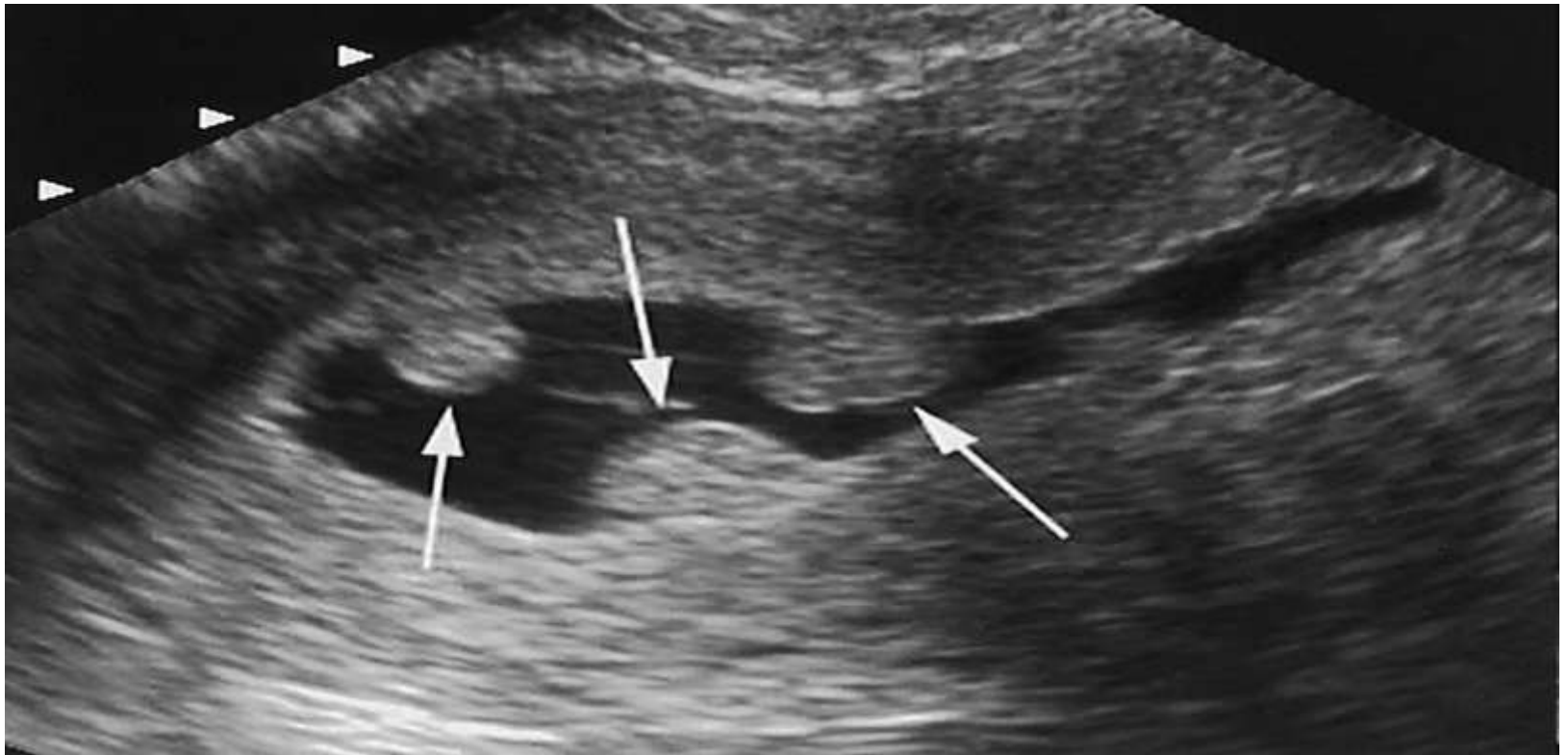
# Diagnosis – Lab work

- Hemoglobin
- Iron studies
- Ferritin
- HCG
- TSH
- Coagulation studies \*
- Day 21 progesterone \*

# Diagnosis

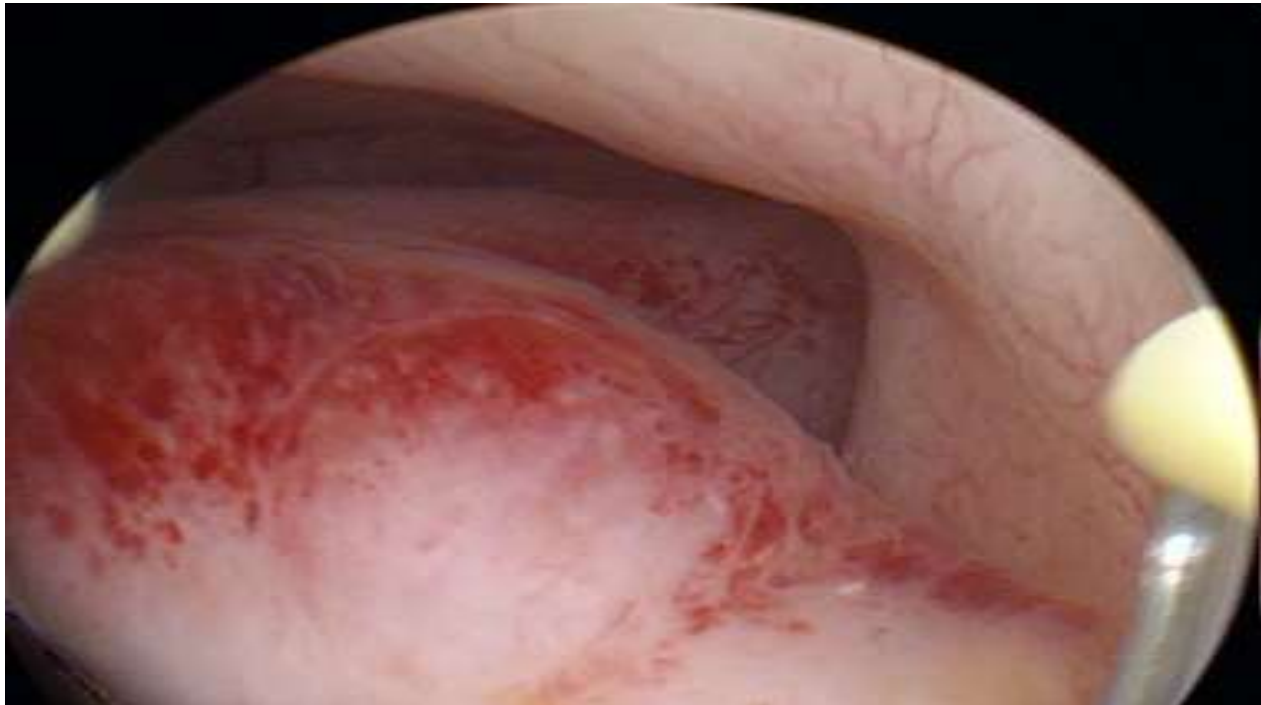
- Rule out presence of uterine lesion
  - TVUS
  - Sonohysterogram
  - Hysteroscopy
  - D and C

# Sonohysterogram





# Hysteroscopy



# Evaluation

- Sampling of endometrium
  - Done to exclude neoplasia, hyperplasia, endometritis
  - Should be done on all women > 35 with AUB
  - Should be done < 35 if risk factors for endometrial cancer
    - Personal history of breast, ovarian, or endometrial cancer
    - Tamoxifen use
    - Chronic anovulation
    - Obesity
    - Estrogen therapy

# Management

- Considerations
  - Desire for fertility and contraception
  - Acute treatment or long term
  - Medical comorbidities
  - Age – close to menopause?

# Medical Therapy

- Combined OCPs
  - Used to treat ovulatory and anovulatory DUB
  - Reduce blood flow
  - Regulate cycles
  - Provide contraception
  - Prevent hyperplasia
  - Treat dysmenorrhea

# Medical Therapy

- Estrogens
  - High dose IV estrogen beneficial in acute uterine bleeding
  - Promotes rapid regrowth of endometrium
  - Results in cessation of bleeding within 5 hours in most women
  - Premarin 25mg IV Q 6 hours
  - Once bleeding stops, switch to OCPs

# Medical Therapy

- Progestens
- Stop endometrial growth
- Support and organize endometrium
- In anovulatory women 10 mg po for 10 days can lead to regular withdrawal bleeding

# Medical Therapy

- Levonogestrol IUD
  - 80% reduction in menstrual blood loss in 3 months
  - Also reduces blood loss secondary to fibroids and adenomyosis

# Medical Therapy

- NSAIDs
  - Useful in ovulatory DUB
  - Reduces menstrual blood loss 20-50%
  - Reduces prostaglandin PGE2 and PGF2 synthesis in endometrium
    - Vasoconstriction
    - Reduced bleeding



# Medical Therapy

- NSAIDs
  - Low cost
  - Treat dysmenorrhea
  - Do not need to be taken daily

# Antifibrinolytic agents

- Tranexamic Acid
  - Lowers endometrial tissue plasminogen activator activity
  - Prevents plasmin formation and menstrual fluid fibrinolysis
  - Contraindicated in women with increased risk of or history of thrombosis
  - Cannot be used along with estrogen treatment

# Surgical Therapy

- Dilation and Curettage
  - Can be diagnostic and therapeutic
  - Rarely curative
  - Not useful with ovulatory menorrhagia

# Surgical Therapy

- Endometrial Ablation
  - Surgical destruction of the endometrium
  - Minimally invasive
  - 60% amenorrhea
  - 95% patient satisfaction
  - Need contraception

# Surgical Therapy

- Hysterectomy
  - Definitive treatment
  - High patient satisfaction
  - Reserved for women who have failed all other measures

# References

- Comprehensive Gynecology, Fifth Edition; Katz, Lendtz, Lobo
- ACOG Committee opinion #451 – Von Willebrand disease in Women
- “Effective Treatment of Heavy Menstrual Bleeding with Estradiol Valerate and Dienogest” The American College of Obstetricians and Gynecologists, Vol. 117, No 4, April 2011
- ACOG Committee opinion #349 – Menstruation in girls and adolescents: Using the Menstrual Cycle as a Vital Sign
- Up to Date