Common Problem of the Gynecological System

Vaginal Discharge, itching vaginal bleeding, amenorrhea

本講義表格資料取自Dains, J.E., Baumann, L.C., & Scheibel, P. (2007). Advanced assessment and clinical diagnosis in primary care. (3rd ed). St. Louis: Mosby.

圖片取自Seidel HM, Ball JW, Dains JE, Benedict GW. (1999). Mosby's guide to physical examination. St. Louis, MO: Mosby.

Vaginal discharge and itching

Vaginitis

- Inflammation of vagina, cause vaginal discharge
- In child bearing women, 95% due to
  - Trichomonas vaginalis (陰道滴蟲),
  - Candida,
  - bacteria vaginosis (BV):
    - epithelium is not inflamed
    - Risk for premature rupture of mambrane and early delivery
- Postmenopausal women: atrophic vaginitis
- In young girl: vulvovaginitis
  - due to hypoestrogenic state and poor perineal hygiene

Characteristic of discharge

- Copious, greenish, offensive-smelling:
  - Trichomonas vaginalis
- Mucopurulent or purulent
  - Gonorrhea and Chlamydia (披衣菌)
- Moderate amount, white, curd-like discharge
  - Candida vulvovaginitis
  - Consistent with itching
  - Birth control pills, steroid, antibiotic, chemotherapy
- Thin white, green, grey or brownish
  - BV
  - Also with fishly odor

- Need microscopic exam to confirm the diagnosis

Lesion

- Vesicle
  - Herpes
- Papular on labia, perineum, and anal area
  - Condylomata lata(扁平濕疣), condyllomata acuminata(尖型濕疣),
- Malluscum contagiosum (傳染性軟疣)
- Painless ulcer
  - Syphilis

Pelvic infection disease

- Cervical motion tender (CMT)
- Pain on palpation of uterus and adnexa
- Purulent discharge

- Need immediate evaluation, treatment, and referral to prevent tubal scarring, ectopic pregnancy, and infertility

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal discharge*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Discharges			
Physiolgical discharge	Increase in discharge; no foul odor, itching, or edema	Clear or mucoid; pH < 4.5	Up to 3-5 WBCs/HPF; epithelial cells, lactobacilli
Bacterial vaginosis	Foul-smelling discharge	Homogeneous thin white or gray discharge; pH > 4.5	Presence of KOH “whiff” test; presence of clue cells; few lactobacilli (see figure 21-1)
Candida vulvovaginitis	Pruritic discharge	White, curdy discharge; pH 4.0-5.0	KOH prep: mycelia, budding, branching yeast, pseudohyphae (see Figure 21-1)
Trichomoniasis	Watery discharge; foul odor	Profuse, frothy, greenish discharge; red friable cervix; pH 5.0-6.0	Round or pear-shaped protozoa; motile “gyrating” flagella (see figure 21-1)
Atrophic vaginitis	Dyspareunia; vaginal dryness	Pale, thin vaginal mucosa; pH>4.5	Floded, clumped eithelial cells

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal discharge*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Discharges			
Allergic vaginitis	New bubble bath, soap, douche, for example	Foul smell, erythema; “lost tampon”; pH<4.5	WBCs
Foreign body	Red and swollen vulva; vaginal discharge; history of use of tampon, condom, or diaphragm	Bloody, foul-smelling discharge	WBCs
Chlamydia	Partner with nongonococcal urethritis; asymptomatic	May or may not have purulent discharge	Molecular testing; > 10 WBCs / HPF
Gonorrhea	Partner with STI; often asymptomatic	Purulent discharge ; inflammation of skene’s/ bartholin’s glands	Gram stain; culture
Pelvic inflammatory disease (PID)	Bleeding, abdominal pain, fever, and vaginal discharge; increasing amount of vaginal discharge and bleeding after intercourse	CMT and adnexal tenderness; may also have guarding and rebound tenderness	WBC; culture; molecular testing; Gram staining

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal discharge*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Itching and lesions			
Syphilis	History of painless ulcerative lesion; rash on palms and soles of feet; warty growth on vagina or anus	Chancre: usually 1 but can be more, painless ulceration; condylomata lata: flat, whitish papule or plaque; maculopapular rash: palm, soles, body	Serology for syphilis
Genital warts	Mild-to-moderate itching, foul vaginal discharge; child: history of sexual abuse; adult: new or multiple partners; history of warts	Moist, pale-pink, verrucous projections on base; located on vulva, vagina, cervix, or perianal area	Acetic acid test: white
Herpes	History of prodromal syndrome, paresthesias, burning, itching; may have mucoid vaginal discharge	Grouped vesicles on red base, erode to an ulcer; if on mucous membrance, exudates form; if on skin, crusts form; redness, edema, tender inguinal lymph nodes	Viral culture; Tzanck smear
Molluscum contagiosum (觸染性軟疣)	History of contact with infected person; if inflamed: itching	Flesh-colored, dome-shaped papules, some with umbilication; usually 2-5 mm in diameter	None

Focused Hx

- **What Kind of Vaginitis Might This Be ?**
  - What is the amount, color, and consistency of your discharge ?
  - Do you have Itching, swelling, or redness ?
  - Is there and odor ?
- **Is This Likely a Sexually Transmitted Infection ?**
  - Are you sexually active ?
  - Do you have multiple partners Do you have a new partner ?
  - Have you had sex against your will.
  - If a child: You might ask, “Has anyone touched your private parts” ?
  - What from of protection do you use How often do you use protection ?
  - Have you or your partner(s) ever been tested or treated for a sexually transmitted infection(STI) ?
  - Do you have any rashes, blisters, sores, lumps, or bumps in the genital area ?

Focused Hx

- **Can This Be Vaginitis That Is Not Related to an STI ?**
  - Have you ever been told that you have diabetes or Cushing's syndrome or that you are positive for HIV infection ?
  - Have you ever been ill recently ?
  - Are you taking antibiotics, hormones, or oral contraceptive pill ?
  - Have you received chemotherapy ?
  - Does the itching seem to be worse at night ?
  - Describe some of your recent activities ?
  - Is the patient premenarche ?

Focused Hx (cont)

- **Is This Condition Acute, Recurring, or Chronic ?**
  - How long have you had these symptoms? Are they getting better or worse ?
  - Have you ever had these symptoms before ?
  - How many episodes have you had in the past year ?
  - Are the episodes related to any particular activity or time ?
- **If This Is Acute, Could It Be Related to a Previous Infection ?**
  - Have you been tested and treated for this condition recently ?
  - What medication was prescribed When was it prescribed ?
  - Did you take all of the medication
  - What other prescriptions were you taking at that time ?

Focused Hx (cont)

- **If This Is Chronic, What Should I Suspect？**
  - Do any family members or sexual partners have vaginal or urinary tract infections？ Do they have any itching, rashes, sores, lumps, or bumps？
  - Do you have a new or untreated partner？
  - What are you sexual practices (e.g., vaginal, oral , and /or anal sex) ？
  - How many yeast infections have you had this year？
    - > 3/y suspect immunosuppresive, such as HIV/AIDS
- **What Are Other Possible Causes for This Vaginitis？**
  - What are your personal hygiene practices？
  - Do you douche？
  - Could you have forgotten to remove your diaphragm or tampon？

Focused Hx (cont)

- **Are There Any Associated Symptoms That Point to a Cause？**
  - Do you have burning or pain with urination Do you have urinary frequency or hesitation, or nocturia？
  - Do you have painful intercourse？
  - Do you have abdominal or pelvic pain？
  - If an infant: Does the infant have an eye infection？
  - If an infant: Does the infant have a cough？

Focused PE

- Note Vital Signs
- Perform an Oral Examination
- Perform an External Genitalia Examination
- Perform an Internal Vaginal Examination
- Perform a Bimanual Examination
- Perform a Vaginal-Rectal Examination

Lab and diagnos tic studies

- Potassium Hydroxide (KOH) and Wet Mount/ Preparation
- Test for PH
- Fungal Culture or Sabouraud,s Agar Culture
- Herpes Viral Culture
- Acetic Acid Test (Acetowhite)
- Follicle-Stimulating Hormone

Vaginal Bleeding

Menstration cycle

- Frequency: 28 days (21~35 days)
- Duration : 4 ~7 days
- Amount : < 80 ml (saturated pad hourly over several hours)

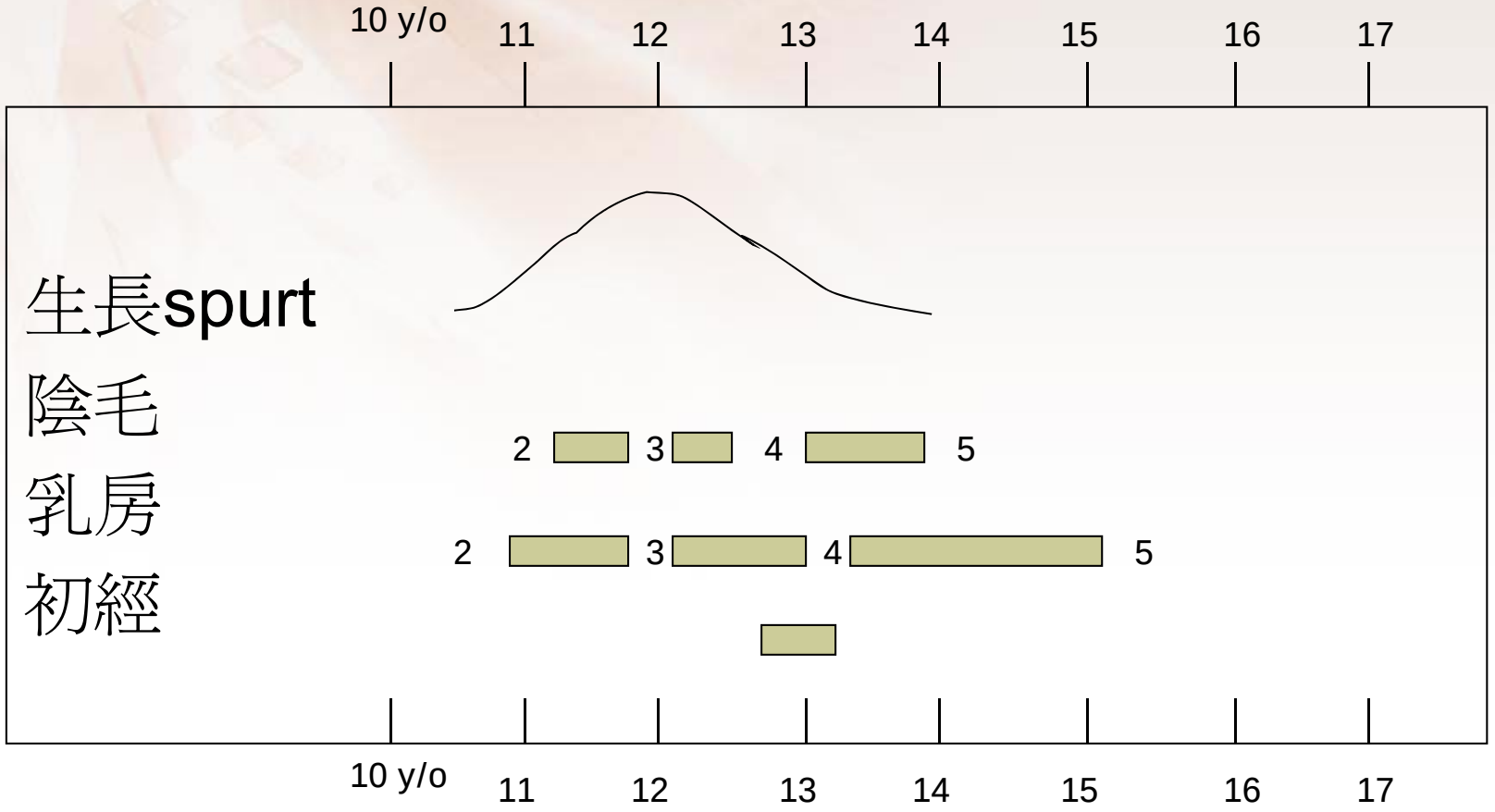
- Perimenopause: I year of irregular periods or missed the past three cycles

- Vaginal bleeding in perimenopause and postmenopausal women may indicate gynecological cancer.

Bleeding

- Acute bleeding
  - Abnormal in postmenopause:
  - endometrial hyperplasia, endometrail cancer
- Chronic bleeding
  - Chronic, irregular menstrual cycles coupled with obesity: polycystic ovary syndrome
- Bleeding with pain
  - ectopic pregnancy rupture: one-side pain, radiated to midline of abd., pain referred to shoulder, peritoneal free fluid, and sig, bleeding
  - IUD: cramping and pain

女性成熟度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Test of female hormones

- FSH
  - > 30 mu/ml : perimenopause
  - > 40 mu/ml : menopause
  - menopause : 1 year without menstrual cycles
  - Menopause symptoms
    - Hot flash, sweating, vaginal atrophy

- Progesteron
  - > 25 ng/ml: intrauterine pregnancy
  - < 15 ng/ml: ectopic pregnancy

- Luteinizing hormone
  - > 50 mIU/ml with FSH > mIU/ml: ovary failure
  - LH/FSH > 2:1 suggest PCOS, > 3:1: diagnose PCOS
    (PCOS: polycystic ovary syndrome)

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal bleeding*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Organic causes of vaginal bleeding			
Pregnancy	Implantation bleeding; breast tenderness, nausea and vomiting	Internal cervical os closed; minimal spotting; globular, enlarged uterus; soft, blusish color cervix	Pregnancy test; β-hCG positive
Spontaneous abortion	Vaginal bleeding following time of amenorrhea; cramping, passage of tissue; history of miscarriages	Internal cervical os open; blood from cervical os	Serial β-hCG declining levels; ultrasound negative
Threatened abortion	Vaginal bleeding following time of amenorrhea; mild cramping	Fetal activity present; internal cervical os may be open	β-hCG positive; ultrasound positive
Placenta previa	Late pregnancy: bright red, painless bleeding	Fetal activity present; uterus is nontender, normal resting tone	Ultrasound
Placenta abruptio	Dark red, painful bleeding; any time after 20 wk of gestation	Vaginal bleeding; uterus tender with tone; signs of fetal distress	Rule out placenta previa with ultrasound

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal bleeding*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Organic causes of vaginal bleeding			
Ectopic pregnancy	Painless vaginal bleeding; multiparity, older gravida, multiple gestation; history of PID, infertility, STIs	Internal cervical os closed; blody discharge present	β-hCG positive; ultrasound; laparoscopy
Leiomyomas	Heavier menstrual bleeding; menorrhagia	Enlarged uterine size; firm, spherical masses; nontender	Pelvic examination; ultrasound
Adenomyosis	Worsening menorrhagia; dysmenorrhea	Enlargement of uterus, often symmetrical; fixed with advanced disease	Endometrial biopsy; D&C; ultrasound; CT or MRI
Uterine/ endometrial cancer	Rapidly enlarging uterus; painless menorrhagia; pelvic pressure; weight loss, weakness	Enlargement of uterus, often symmetrical; fixed with advanced disease	Endometrial biopsy; D&C; ultrasound; CT or MRI

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal bleeding cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Systemic causes of vaginal bleeding anovulatory cycles			
Perimenopause	Irregullar menses, amenorrhea couples with heavier and longer menstrual cycles; hot flashes, night sweats, insommia, mood changes	Pale, dry vaginal mucosa, few rugae	FSH and LH high; estradiol low
Perimenarche	History of beginning menses within last 1-2 yr; has period of amenorrhea followed by irregular menstrual cycles that are of heavy, frequent, or long duration	Physical examination normal; secondary sexual characteristic present	History and examination
Newborn	Less than 2 month old	Small amount of vaginal spotting	History and examination

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal bleeding cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Endocrinopathies			
Polycystic ovary syndrome	Infertility; irregular menstrual cycles	Hirsute; obese; enlarged ovaries	Pelvic examination; ultrasound; enlarged ovaries with multiple fluid-filled cysts
Thyroid dysfunction	Hypothyroid: menorrhagia, delayed growth, weight gain, fatigue, constipation, cold intolerance	Hypothyroid: dry skin, fine hair, galactorrhea	TSH high
Hyperprolactinemia	Menometrorrhagia, oligomenorhea	Bilateral, multiduct, clear-to-white nipple discharge	Serum prolactin level; MRI if indicated

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal bleeding cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Vaginal infection			
Atrophic vaginitis	Dyspareunia; vaginal dryness	Pale, thin vaginal mucosa; brown or bloody discharge; pH>4.5	Folded, clumped epithelial cells
Endometritis	History of emergency cesarean section, PROM, prolonged labor, intrauterine manipulative procedures	Tenderness of uterus on bimanual examination; temperature 102-103^0 F; DISCHARGE OR LOCHIA MAY BE PURULENT	WBC > 10,000/mm^3
Pelvic inflammatory disease	History of PID; chronic vaginitis; STIs	Bilateral abdominal pain following menses; pelvic mass; cervical motion tenderness; vaginal discharge; temperature >100.4^0 F	WBC, ESR; Gran staining, cultures, molecular testing
Genital warts	Mild-to-moderate itching; foul vaginal discharge; child: history of sexual abuse; adult: new or multiple partners; history of warts	Moist, pale pink, verrucous projections on base; located on vulva, vagina, cervix or perianal area; bleeding with trauma	Acetic acid test: white
Foreign body	Red and swollend vulva; vaginal discharge; history of use of tampon, condom, or diaphragm	Foreign body present (tampon, condom_: bloody, foul-smelling discharge	Wet mount: many WBCs no pathogens; history and examination

DIFFERENTIAL DIAGNOSIS OF *Common Causes of vaginal bleeding cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Blood dyscrasias			
Von Willebrand's disease	Menorrhagia, adolescent	Bruising; petechiae; gingival bleeding	Bleeding time, factor VII deficiency, decreased platelets
Leukemia	Menorrhagia; fatigue usually less than 3 months duration	Fever, bruising, pallor; lymph node enlargement; hepatic or splenic enlargement	WBCs: 1000-400,000/mm3 leukocytosis with immature blasts or cells; anemia, thrombocytopenia, decreased factor V or VII
Other			
Medications	Taking rifampin, phenytoin, carbamazepine, or phenobarbital while on low-estrogen dose oral contraceptives; tamoxifen	Normal gynecological exam	Bleeding stops with higher estrogen dose oral contraceptive; endometrial biopsy

Focused Hx

- **Is This Related to Age Where Is the Woman in Her Reproductive Life Cycle ?**
  - How old are you ?
- **Is This Prepubertal Bleeding ?**
  - How old is the child ?
  - Is there a family history of early sexual development ?
  - Is there a family history of bleeding problems or blood dyscrasias ?
  - Did the child ingest any birth control pills or estrogens ?
  - Are there any accompanying symptoms ?

Focused Hx

- **What Is the Character of the Bleeding ?**
  - When did it begin ?
  - How long have you been bleeding ?
  - What is the flow like ?
  - How many pads do you use ?
  - Are there any accompanying problems ?
- **Is This Problem Acute or Chronic ? How Does It Compare With Usual Menses ?**
  - Has this kind of vaginal bleeding occurred befor ?
  - Were your periods regular befor this episode ?
  - How long did they last ?
  - What was the amount and pattern of bleeding ?

Focused Hx (cont)

- **Could This Be Related to Pregnancy？**
  - **Do you have any symptoms of pregnancy(e.g.,missed period, breast tenderness, nausea and vomiting) ？**
  - **When was your last normal menstrual period？**
  - **What are you using for birth control？**
  - **Have you recently delivered a baby？**

Focused Hx (cont)

- **If the Patient Is Pregnant, Is This a Complication ?**
  - How old are you ?
  - How many weeks pregnant are you ?
  - Do you have Chronic health problem ?
  - Are you experiencing any pain or cramping ?
  - Have you passed any tissue ?
  - Are you having any other symptoms ?
  - Have you ever had any STIs ?
  - Have you ever had an infection of your tubes(pelvic inflammatory disease [PID]) ?
  - Have you ever been pregnant ? What were the number of times and outcomes of your pregnancies ?

Focused Hx (cont)

- **Could This Be Caused by the Patient's Birth Control Method ?**
  - Do you use a method of birth control ?
  - Which kind(s) of birth control do you use ?
  - How do you use it ?
- **Is the Patient Experiencing Anovulatory Cycles ?**
  - Have you experienced irregular menstrual cycles ?
  - Are you having symptoms of menopause(e.g., Vaginal dryness, hot flashes, night sweats) ?
  - At what age did your mother or grandmother go through menopause ?

Focused Hx (cont)

- **Is the Patient Experiencing Potmenopausal Bleeding？**
  - How old were you when you stopped menstruating？
  - Do you still have a uterus？
  - Did you have a hysterectomy ？Why did you have surgery ？Were your ovaries removed？
  - Are you using hormones？
- **Could This Be From Infection or Inflammation？**
  - Have you noticed any sores, rashes, or lumps in the vaginal area？
  - Do you have a viginal discharge or vulvar itching or burning ？
  - What were the results of your last papanicolaou test？

Focused Hx (cont)

- **What Other Causes of Bleeding Should I Consider？**
  - Could this bleeding be from the urethra or rectum？
  - Are you taking tamoxifen？
  - What other medications are you taking？
  - Do you have a history of anemia, or do you bleed easily with dental work？
  - Did your mother take diethylstilbestrol(DES) when she was pregnant with you？

Focused PE

- Perform a General Assessment
- Assess Vital Signs
- Determine Patient Weight and Calculate Body Mass Index
- Perform a Lymph Node Examination
- Perform a Thyroid Examination
- Perform a Breast Examination
- Perform a Pelvic Examination
- Pediatric Examination: Perform a Breast and Genital Examination

Lab and diagnostic studies

- Qualitative Urine/ Serum hCG Test
- Quantitative Serum Human Chronic Gonadotropin Test
- Hematocrit and Hemoglobin Level
- Complete Blood Cell Count With Indices and Differential
- Prothrombin Time/ Partial Thromboplastin Time/ Bleeding Time(PT/PTT/BT)
- Serum Progesterone Levels
- Serum Follicle-Stimulating Hormone Levels
- Serum Luteinizing Hormone Levels
- Serum Estradiol Levels
- Fecal Occult Blood Test(FOBT) or Fecal Immunochemical Test(FIT)
- Vaginal/ Lower Abdominal Ultrasound
- Endometrial Biopsy
- Dilation and Curettage
- Hysteroscopy

Amenorrhea

Definition

- Primary Amenorrhea
  - Absence of menarche by 16 years of age with normal pubertal growth and development
  - Absence of menarche by 14 years of age with lack of normal pubertal growth and development
  - Absence of menarche 2 years after sexual maturation is complete
- Secondary Amenorrhea
  - Absence of menarche at least three cycles (> 35 days) or 6 month after established menstration.
- 66% of Amenorrhea are hypoestrogen because of either hypothalamic-pituitary hypofunction or end organ failure. (progesteron challenge test)

Nutrition and Amenorrhea

- 17% of body fat (BMI 19 kg/m^2) is needed for most female to be menarchal
- 22% of body fat is necessary for ovulation
- Weight loss of 10~15% : one third of body weight.

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Amenorrhea*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Pregnancy			
Pregnancy	Breast tenderness; morning sickness, urinary frequency	Globular, enlarged uterus; soft, bluish color cervix	B-hCG pregnancy test positive; ultrasounography positive
Constitutional problems			
Delayed puberty	No menstruation at age beyond 16 years; more than 5 years between initiation of breast growth and menarche	Breast stage 1 persists beyond age 13.4; pubic hair stage 1 persists beyond age 14.1	Prolaction normal; TSH, T_4 normal; CBC, U/A normal; chemistry profile normal; bone age normal; skull radiograph normal
Anorexia nervosa/bulimia	Mean age 13-14; fear of being fat; low self-esteem; depression; isolation; overachieve; food is parental battleground; preoccupation; hair loss; abdominal bloating, pain, constipation	Amenorrhea before or after weigh loss; cachexia; low body fat; short stature; yellow, dry, cold skin; arrocyanosis: increased lanugo hair; hypotension, systolic murmurs, often mitral valve prolapse	TSH normal; prolactin normal; FSH and LH usually low; glucose normal; ECG: braycardia, low-voltage changes, T wave inversions, and accasional ST segment depression
Exercised-induced amenorrhea	Began athletic training at young age; more common with long distance runners, ballerinas, gymnasts	BMI < 17% body fat	TSH normal; prolactin normal

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Amenorrhea*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Congenital or chronic disorders			
Turner's syndrome	Congenital; short stature; infantile sexual development	Characteristics: webbed neck, low-set ears, shieldlike chest, short fourth metacarpal	Karyotype (45,X)
Cushing's syndrome	Weight gain; weakness; back pain	Moon face, acne, hirsutism, purple striae of abdomen	Cortisol increased; 17-ketosteroids increased; CT adenoma
Uterine and outflow tract problems			
Imperforate hymen/stenotic cervical os	Monthly bloating, cramping, and pelvic pressure; no menses; cryotherapy or other procedure to cervix	Fibrotic hymen without patent opening; stenotic cervical os	Clinical diagnosis by history and findings
Asherman's syndrome	History of uterine infection; tuberculosis, schistosomiasis; uterine iatrogenic scarring; curettage, irradiation	Pelvic examination normal	PCT negative; E and PCT negative; hysteroscopy adhesions

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Amenorrhea cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Thyroid dysfunction	Hypothyroid: delayed growth, weight gain, fatigue, constipation, cold intolerance; hyperthyroid: weight loss, nervousness, heat intolerance	Hypothyroid: dry skin, fine hair, galactorrhea; hyperthyroid: moist skin, hyper-pigmentation over bones, thin hair, goiter	Hypothyroid: TSH high; hyperthyroid: TSH low; T_3 high; T_4 high
Cushing's syndrome	Weight gain; weakness; back pain	Moon face, acne, hirsutism, purple striae of abdomen	Cortisol increased; 17-ketosteroids increased; CT adenoma
Thyroid dysfunction	Hypothyroid: delayed growth, weight gain, fatigue, constipation, cold intolerance; hyperthyroid: weight loss, nervousness, heat intolerance	Hypothyroid: dry skin, fine hair, galactorrhea; hyperthyroid: moist skin, hyperpigmentation over bones, thin hair, goiter	Hypothyroid: TSH high; hyperthyroid: TSH low; T_3 high; T_4 high
Polycystic ovary syndrome	Infertility	Hirsutism; obese; enlarged ovaries	Ultrasonography: enlarged ovaries with multiple fluid-filled cysts; testosterone high

DIFFERENTIAL DIAGNOSIS OF *Common Causes of Amenorrhea cont'd*			
CONDITION	**HISTORY**	**PHYSICAL FINDINGS**	**DIAGNOSTIC STUDIES**
Hypothalamic-pituitary-ovarian axis problem			
Menopause	Hot flashes, night sweats, insomnia, mood changes	Pale, dry vaginal mucosa; few rugae	FSH and LH high; estradiol low
Sheehan's syndrome	Recent history of postpartum hemorrhage and shock during delivery	Hair loss; depigmentation of skin; mammary and genital atrophy	Pituitary and end-organ hormones low; hemoglobin low
Medications/chest wall or nipple stimulation	Breast nipple discharge; history of dopamine antagonists, estrogens, or illicit drugs; stimulation to nipples: exercise or sexual; history of chest wall surgery or herpes zoster	Nipple discharge: bilateral; multiduct; milky, clear, or yellowish discharge	Wet mount or hemoccult of nipple discharge: negative for RBCs; prolactin high; cone-down view of sella turcica; MRI or CT with contrast
Pituitary adenoma	Delayed puberty; history of visual changes, increasing headaches	Visual field defects; galactorrhea	Prolactin high; cone-down view of sella turcica positive; MRI or CT with contrast positive

Focused Hx

- **Is There a Pregnancy？**
  - Are you sexually active？
  - Are you using any birth control method？
  - Are you trying to become pregnant ？
- **Is This Primary or Secondary Amenorrhea？**
  - Have you ever had a menstrual cycle？
  - Have you started pubertal development Can you show me how your breast and pubic hair (PH) look compared with these pictures (Use Tanner Sexual Maturity Rating [SMR] scales [Figures 23-2 and 23-3].) ？

Focused Hx

- **Are The Any Constitutional Delays Causing the Amenorrhea？**
  - Has there been a change in weight, percentage of body fat, or athletic training intensity？ ？
  - Are you under unusual stress at school, home, or work？
  - Do you or anyone in your family have any congenital disorders or chronic disease？
- **Could This Be Thyroid Dysfunction？**
  - Have you noticed changes in the texture of your hair or skin？
  - Are you bothered by hot or cold temperatures？
  - Have you had any changes in your bowel function？

Focused Hx (cont)

- **Could This Be Caused by Hyperprolactinemia ?**
  - Are you able to express a discharge or liquid from your nipples ?
  - Is there increased stimulation to your nipples ?
  - Have you had any surgery or disease of the breasts or chest wall nipples ?
- **Is a Pituitary Tumor Causing the Amenorrhea ?**
  - Have you experienced any visual changes ?
  - Are you having an increased number of headaches ?

Focused Hx (cont)

- **Is This a Problem of the HPO Axis ?**
  - Have you experienced any problems with infertility ?
  - Do you have excess hair on your face or chest ?
  - Do you having any menopausal symptoms (e.g., hot flashes, vaginal dryness) ?
  - Did you hemorrhage during childbirth ?
- **IS This a Problem of the Uterus ?**
  - Have you had a miscarriage or abortion, uterine infection, or any surgery or procedure involving your uterus ?
- **What Symptoms Support a Structural Outflow Problem ?**
  - Do you have cyclic abdominal bloating or cramping ?
  - Have you been amenorrheic since you had a cervical procedure ?

Focused PE

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- Perform a Thyroid Examination
- Perform a Breast Examination
- Perform a Pelvic Examination
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- Hematocrit and Hemoglobin Level
- Complete Blood Cell Count With Indices and Differential
- Prothrombin Time/ Partial Thromboplastin Time/ Bleeding Time (PT/PTT/BT)
- Serum Progesterone Levels
- Serum Follicle-Stimulating Hormone Levels
- Serum Luteinizing Hormone Levels
- Serum Estradiol Levels
- Fecal Occult Blood Test (FOBT) or Fecal Immunochemical Test(FIT)
- Vaginal/ Lower Abdominal Ultrasound
- Endometrial Biopsy
- Dilation and Curettage
- Hysteroscopy

Q&A