Reproductive System
Disorders of the Female Reproductive System

- **DISTURBANCES OF MENSTRUATION**

Premenstrual Syndrome (PMS)

- Definition
  - Set of symptoms that occur **7-10 days prior** to onset on menses; disappear during menstruation

- Signs & Symptoms: **begin at ovulation**; vary in severity and degree;

Breast tenderness/swelling, abdominal bloating, edema, HA, fatigue, depression, irritability, anxiety, mood swings, acne, constipation, increased appetite, cravings, urticaria

- Diagnosis:
  - Detailed history; look at timing of symptoms; recur x 3 consecutive cycles; no definitive dx; symptom diary for 2-3 cycles.

- Incidence: 10-12 million women affected; 30-40% of all menstruating women; menarche to menopause; increased incidence over 30 yrs of age; **intensify with age**

- Predisposing Factors:

Age
Children
Diet- refined carbs
Marriage
Toxemia

- Etiology
  - Cyclic fluctuations: progesterone and estrogen;
  - Sensitivity to serotonin
  - Vitamin B6 deficiency
  - Carbohydrate tolerance :: hypoglycemia
  - Imbalances between prolactin & aldosterone

- Treatment: 3 purposes

1. decrease severity and number of symptoms
2. restore psychological health
3. deal with social and interpersonal problems resulting from PMS

  - Nutrition: ↑ protein, ↓ sodium sugar ETOH caffeine, ↑ B6
  - Exercise
  - Stress management
  - Vitamin B6: 100mg/day; magnesium and calcium can help with mood
  - Hormones – progesterone: 200-400 mg rectally/vaginally (decreased use)
  - Diuretics: spironolactone
  - Oral contraceptives: back pain/cramps
  - Prostaglandin inhibitors (ibuprofen)
  - Selective serotonin reuptake inhibitors SSRI's (sertraline/Zoloft): emotional/physical symptoms
  - Acute pain: positioning, heat, medications

PMDD (premenstrual dysphoric disorder): severe/disabling < 5% females; increase mental health problems; low levels of serotonin, gaba, & beta endorphins: all affect neurotransmitters

DYSMENORRHEA: *abdominal cramping, pain or discomfort with flow*

- Types:
- **Primary** – no pathology; starts a few yrs after menarche; peak age 20 then ↓ ; increase level of prostaglandins (increase contractions ➔ tissue ischemia)

- **Secondary** – associated with other pathology ie: endometriosis, fibroids, PID; discomfort begins with flow and lasts 12-72hrs; most common ages 30-40

Signs & Symptoms: ***starts 12-24 hrs before menses and can last 24-48 hrs***

- sharp, colicky pain, or dull ache
- radiating pain – back, thighs, bearing down sensation
- N/V/D, HA

- Incidence: half of all females affected; does not usually affect young girls just starting their menses; most common- 15-25 yrs; may fade after peak age.

Etiology:

- Prostaglandin release (luteal phase): Uterine contractions = ↓ uterine blood flow = ischemia/pain

Diagnosis: pattern of s/sx, H&P, PE; primary vs. secondary

Treatment: depends on severity

Local Heat; rest; medications
prevention: exercise (↓ prostaglandins), good nutrition; avoid constipation; avoid stress

- NSAIDs (Prostaglandin Synthetase Inhibitors- Ibuprofen, Naproxen) best if taken q4-8 hrs

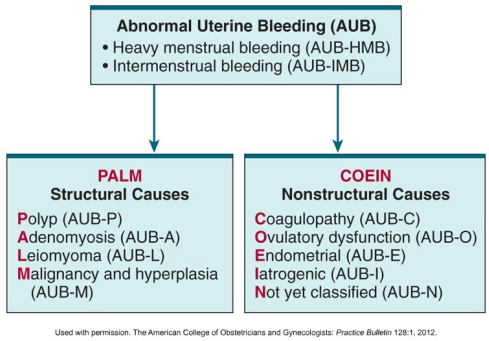
- Oral contraceptives: Lowers prostaglandin levels, decreases monthly endometrial proliferation and decreases flow

MENSTRUAL IRREGULARITIES

Normal flow: 20-80 mL; average 30 mL's; heaviest 1st 2 days; heavy flow = soaking 2 pads in 1-2 hrs.

Menstrual Irregularities	Definition	Causes

Amenorrhea	No menses; primary (no menses before 16 yrs) vs. secondary (cessation of menses after established)	Natural- pregnancy; Lifestyle- excessive exercise, low body weight, stress; Hormones- imbalance 2˚pituitary tumor
Menorrhagia: Heavy	Excessive bleeding (> 80 mL) and increased duration	Refer to DUB
Oligomenorrhea	Long intervals (> 35 days) between menses	Anovulation
Metrorrhagia (intramenstrual bleeding)	Bleeding/spotting between periods	Refer to DUB



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Dysfunctional Uterine Bleeding (DUB) or Abnormal Uterine Bleeding (AUB)
(referencing metrorrhagia or menorrhagia)

Cause = Imbalance of decreased estrogen

* Abnormal bleeding in duration or amount or regularity; endometrial in origin; if in adolescent yrs- more than likely will continue as an adult – risks for fertility

- A single episode may = spontaneous abortion
- Postmenopausal bleeding- endometrial cancer
- Other causes : IUD, uterine fibroids, polyps, bleeding disorders-thrombocytopenia , thyroid, PID, endometriosis, medications- anticoag's, eating disorders
- Assessment: weigh pads, compare to normal; H&P, pelvic exam; bleeding patterns; CBC

Treatment of menstrual irregularities: depends on cause and age

Conservative: hormonal therapy, tranexamic acid/ Lysteda, psychotherapy
Surgical: endometrial ablation, D&C, hysterectomy

** may have midcycle pain/spotting with ovulation; breakthrough bleeding with BCP- may need to change type*

MENOPAUSE

<table>
<tr><td>Menopause
physiologic cessation of menses; decreased ovary function; occurs during climacteric for all females</td><td>Climacteric: go from reproductive to non-reproductive</td></tr>
<tr><td>Perimenopause
Period from when: first signs of menopause to complete cessation of menses</td><td>Postmenopause
1 year post last period</td></tr>
<tr><td colspan="2">Etiology: physical changes, and psychological/social implications
Ages: 40-58 yrs; ave. 52
Pattern of cessation: over 1-2 yrs
Flow: occurs less frequently and becomes irregular and less in amount
No periods x 1 yr = menopause has occurred
May be abrupt cessation</td></tr>
<tr><td>Factors for Early menopause:
Radiation- excessive
Hard manual labor
General Health: poor; hypothyroidism; obesity
Maternal Health: inadequate space between kids; frequent elective abortions
Smoking
Surgical/Artificial: ovary radiation, removal of ovaries, or hysterectomy</td><td>Causes:
Not known for certain;
Decrease in # of maturing ovarian follicles/decline in estrogen>ovaries atrophy>estrogen decreases>increased FSH & LH</td></tr>
</table>

Physical changes related to decreased estrogen:

* Endometrium & myometrium: atrophy, ↓ uterus size
* Ovaries atrophy
* Labia majora flatten (minora may disappear)
* Vaginal mucosa: thins, becomes alkaline
* Cervical secretions: ↓
* Pelvic muscle tone ↓
* Breasts: pendulous and lose elasticity

Clinical manifestations:

- Dyspareunia
- Vaginal *dryness, itching, burning*
- Irregular *bleeding*
- Infections: *vaginal*
- GU: *Atrophic Cystitis*
- Weight *gain*

- Insomnia
- N/T
- Joint pain
- Psychological manifestations

* Emotional lability- female evaluating and redefining role
  * Anxiety
  * Depression
  * Insomnia, fatigue
  * Irritability, nervousness
  * Forgetfulness
  * Difficulty in concentrating

- Hot flashes
  - Vasomotor instability from lowered estrogen (makes them more sensitive to stimuli) *sweating, skin discoloration, sensation of heat loss*
  - Provoked by: exercise, excitement, eating hot food, ETOH
  - Most often- happens at night – inactive hypothalamus

- Osteoporosis: Increased porosity of bone; reduction in bone mass or density (bone resorption > bone formation)

  Risk factors: sedentary life style, thin, Caucasian

  Estrogen needed for Vitamin D to be synthesized for calcium absorption; estrogen stimulates osteoblasts

  s/sx: loss of height, vertebral collapse, back pain; fractures: forearm, spine, hips

  Tx: calcium supplements 1000-1500 mg/daily, vitamin D, estrogen (Evista), exercise, biophosphonates (Fosamax & Actonel)

Diagnosis

* Low _____ levels
* High _____ & _____ levels

Hormone Replacement Therapy

* History: 1922 first used, 1976 studies showed an increase in endometrial and breast cancer
* Will have cyclic vaginal bleeding
* <u>Current therapy:</u>

- Estrogen (Premarin) 0.625 mg [days 1-25], short-term
- Progesterone (Provera) 5-10 mg 12 days/month [days 16-25] or 2.5 mg continuously; women with uterus; reduces risk
- Estraderm – transdermal estradiol – patch
- Estrogen vaginal suppositories or creams- for s/sx with genital atrophy; less systemic effects

- Follow-up needed q3-6 months; utilized short-term 6-12 months

- Reduces s/sx vasomotor , reverses s/sx vaginal atrophy and prevents OP

- Contraindications: *strong familial h/o uterine & breast CA, undx vaginal bleeding, h/o thrombophlebitis and thromboembolism*

- Combined risk factors: *obesity, varicosities, increase BP, smoking, uterine fibromyomas, hyperlipidemia, fibrocystic breast*

- S/Fx: *breast swelling/pain, edema, wt gain, atypical uterine bleeding*

Other treatment modalities:

* Nutrition- ample fluid, yogurt, phytoestrogens-plants
* Vitamins- B6, vitamin D
* Kegel exercises- help strengthen muscles around reproductive organs
* Calcium supplements- help prevent osteoporosis, ideally start before menopause (1500mg/day)
* Coping with hot flashes- anything that affects body temperature
  Suggest: loose clothing, cool house, cool layers; limit: red wine, chocolate, aged cheeses, caffeine, smoking, ETOH
* Herbal remedies- soy (phytoestrogens), black cohosh/ginseng
* Non-hormonal therapy:
  -SSRIs – paroxetine/Paxil; fluoxetine/venlafaxine/Effexor
  -Clonidine/Catapres
  -Gabapentin/Neurotin
  -SERMs – raloxifene/Evista

- H2O soluble lubricants with suppositories

Sexuality

* Femininity & libido do not ↓ at menopause
* Support groups
* Contraception for one year after last menstrual period
* Need annual GYN exams

* Nurse's Role:
  * Promote positive outlook
  * Promote good nutrition & good health
  * Coping with hot flashes
  * Foods to limit
  * Habits to avoid

INFLAMMATIONS AND INFECTIONS OF THE VAGINA, CERVIX, & VULVA

Introduction

- Defense mechanisms (requires adequate estrogen)
  * Acid vaginal secretions
  * Lactobacillus (Doderlein bacilli)- natural bacteria

- Leukorrhea:
  * WNL non-bloody, asymptomatic vaginal discharge
  * Secreted by endocervical glands
  - Keeps membranes moist
  * Clear exudate
  * Amount varies with time in menstrual cycle- greatest at ovulation
  * Viewed as bothersome to some
  * Changes in amount, color, character, odor ➔ problem

Vaginitis: copious amounts of discharge, malodorous, abnormal color

- Discharge ➔ vulva itching and irritation
- Burning and frequency of urination
- Causes: e.coli, staph, fungal STI, menopausal atrophy, abx therapy, allergens
- Dx- cx
- Treatment: sitz baths; depends on cause – possible abx

Vulvovaginal Candidiasis (Monilial Vaginitis)

- Overgrowth of Candida albicans (fungus) (YEAST INFECTION)
  – Normal resident of mouth, GI tract, & vagina; small amount
- Predisposing factors:
  – Pregnancy, BCP, corticosteroids, intercourse, poor hygiene, douching, poor nutrition, aging
- Signs & Symptoms: pruritus, thick white curd-like discharge, bright red swollen vagina and vulva
- Diagnosis

– Microscopic exam of discharge or just visualization; if recurrent for client- can self-dx and tx

- Treatment *(think antifungals *azole)*

– Miconazole/Monistat, clotrimazole/Gyne-Lotrimin, cream or vaginal suppositories
– Fluconazole (Diflucan) po, terconazole/Terazol cream or suppository

Trichomoniasis

- Trichomonas vaginalis

– Infection of paraurethral glands (males & females)

- Transmission

– Sexual transmission, shared bathroom facilities (washcloths, douching equipment)

- Signs & Symptoms

– Profuse, thin, frothy, green or gray malodorous discharge, pruritus, excoriation of vulva, ‘strawberry spots’ (hemorrhagic spots on cervix and vaginal walls)

- Diagnosis

– Microscopic exam

- Treatment
  - Metronidazole/Flagyl, tinidazole/tindama, clindamycin
  - Treat Partner

Bacterial Vaginosis

- Gardnerella vaginalis
  - Gram negative coccobacillus
- Transmission
  - Sexual transmission or normal vaginal inhabitant in certain conditions
- Signs & Symptoms
  - Thin, watery foul-smelling grayish white discharge – fishy odor, no pruritus or burning, may or may not have other symptoms
- Diagnosis
  - Microscopic
- Treatment
  - Metronidazole (Flagyl) or clindamycin po
  - Lactobacillus acidophilus- orally or by diet
  - Treat partner

Cervicitis

- Inflammation of cervix = discharge
- Normal cervix prevents invasion of bacteria
- Found in conjunction with vaginitis
- 2 types: (acute vs chronic)
  - Acute: strept, staph, e. coli, GC, chlamydia;
    - s/sx- ↑ discharge- yellow, thick, mucopurulent; may have 2° vaginitis and vulvitis
    - tx: identify and treat with abx, tx partner
  - Chronic: inflammation doesn't go away and cervix remains somewhat inflamed
    - s/sx- leukorrhea
    - tx: cervical cautery or cryotherapy to destroy abnormal tissue; then abx (azithromycin/Zithromax, doxycycline, cipro, ceftriaxone/Rocephin) tx partner

Vulvitis

- inflammation of vulva
- caused by direct irritation or by extension of irritation from vagina to vulva or from cervicitis
- s/sx- pruritus and irritation
- tx- sitz bath

Bartholinitis

- invasion of Bartholin's glands by: strept, staph, GC, e.coli
- usually unilateral
- s/sx- erythema around the gland, swelling, edema, pain of labia and introitus (opening); can develop into abscess
- dx- by examination, cultures to identify cause
- tx- abx, I&D, analgesics, moist heat
- cysts tend to recur when opening of the duct re-obstructs ➔ removal of gland in older females

TOXIC SHOCK SYNDROME-TSS

- Infection leading to shock
- Etiology/Incidence
  * Toxin secreted by staph aureus into bloodstream
  * Males & females
  * ↑ females 15-24 yrs who use tampons
- Risk factors
  * Menstruation
  – Super tampons
  – Inserted with dirty fingers
  – Chronic vaginal infections
  – Herpes
  – Not utilizing tampons as regulated by manufacturer

- Pathophysiology
  * Toxin introduced via injury to capillary endothelium
  * Capillary permeability altered – allows fluid to leak out of capillary – decreased blood return to heart
  * Impaired tissue perfusion – tissue hypoxia, renal & CNS abnormalities
  * Toxins damage organs & interfere with clotting cascade
  – Blood- growth medium for staph/strept
  – Cross vaginal mucosa to bloodstream via micro-abrasions from tampon

- Signs & symptoms
  * Fever > 102° F or 38.9° C
  * HA, flu-;ole symptoms
  * Rash – red flat, macular, palmar, or diffuse; followed by desquamation on hands and feet (1-2 weeks after illness onset)
  * Vomiting & diarrhea
  * Hypotension SBP < 90, fainting/weakness

- Diagnosis- involvement of 3 or more organ systems: GI, muscular, mucous membranes, renal, hepatic, hematologic, CNS

- Test serum or CSF fluid- r/o Rocky Mountain spotted fever and measles
- Possible cultures – staph

- Treatment:
  * Symptomatic and supportive
  * Fluid replacement
  * Antibiotics – staph, strept

- Prevention:
* Education – safe use of tampons
  - Do not use superabsorbent
  - Change regularly
  - Wash hands
  - After having TSS, do not use tampons until cultures are negative

PELVIC INFLAMMATORY DISEASE- PID

- Inflammatory condition of pelvic cavity involving repro organs
- Ascending pelvic infections
  - Frequent organisms:
    * E. coli, **GC**, staph, strept, **chlamydia**, hemophilus
* Ovary & Tubes (*oophoritis, salpingitis)*

- Causes
* Untreated cervicitis
* Organisms: enter by:
  * Intercourse
  * Pelvic surgery, abortion, childbirth
  * Increase risk if IUD use

* Patho:
  * GC & staph ➔ uterine endometrium to fallopian tubes; occluded; drain pus; pelvic peritonitis or ovarian abscess
  * Strep ➔ lymphatic system across perimetrium to tubes and ovaries= pelvic cellulitis; possible thrombophlebitis pelvic veins

- **Acute PID** clinical manifestations
* Malaise, fever, chills, anorexia, N/V, tachycardia
* Lower abdominal pain – sharp, bilateral, aggravated by defecation
* Vaginal discharge – heavy, purulent; GC- thin mucous, Strept- intermenstrual spotting
– ↑ WBC & ESR

- **Chronic PID** clinical manifestations
* Unresolved acute infection
* Persistent pelvic pain, dysmenorrhea
* Chronic dull pain, backache, constipation, malaise, low grade fever, reoccurrence of acute s/sx
* Chronic pain

- Complications:
* Sterility, infertility, ectopic pregnancy (from scarred tissue), peritonitis, septic shock, emboli, abscess

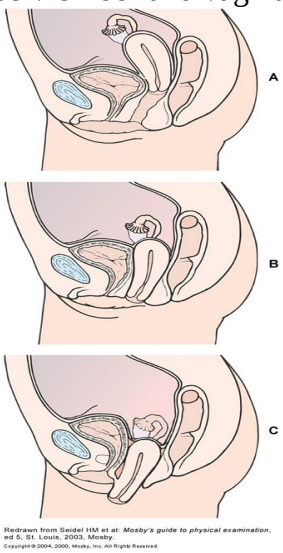
- Diagnosis
* Difficult since similar S/Sx as appendicitis & ectopic pregnancy
* H&P- h/o genital tract infection
* PE- abd tenderness, ↑ pain when moving organs, enlarged tubes/ovaries
* R/O pregnancy, may need vaginal US
* Increased WBC & ESR
* Cultures – drainage

- Treatment
* Antibiotics- doxycycline
* Rest – semi-fowler's for drainage, avoid sexual activity x 3 weeks, no douching
* Heat – abd
* Sitz baths
* Analgesics, steroids
* Increase fluids
* Treat partner
* Surgery - I&D; hysterectomy if extreme
– F/U within 48-72hrs
– Possible hospitalization

*Nsg interventions: education (s/sx, treating partner, F/U, ways to decrease STI, prevent spread to others)

CONDITIONS OF THE PELVIC MUSCLES

Uterine Prolapse – decent of uterus below its normal position; downward placement through pelvic floor and vaginal outlet



Redrawn from Seidel HM et al: *Mosby's guide to physical examination*, ed 5, St. Louis, 2003, Mosby.

– First degree- cervix @ lower part of the vagina
– Second degree- cervix @ vaginal opening

– Third degree (procidentia)- entire uterus protrudes through the vaginal opening
  - Ulcerations from irritation; often accompanied by cystocele, rectocele, &/or enterocele

- Clinical Manifestations
  * "dragging, pulling" sensation
  * Urinary incontinence
  * Backache
  * Dyspareunia
  * Vaginal discharge & bleeding

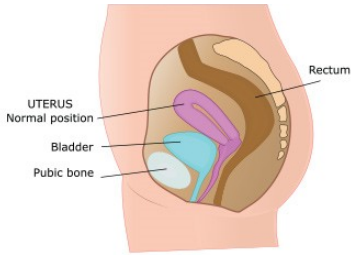
- Treatment (depends on degree of prolapse)
* Conservative treatment (pessary, knee-chest exercises, Kegel exercises)

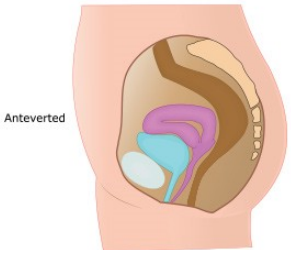
* Surgery (vaginal hysterectomy) with repair of vagina

Uterine Displacement

- Normal A&P
  * Uterus lies between the bladder & rectum; flexes forward 45 degrees;

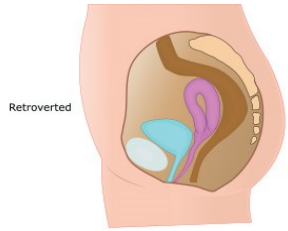
- Causes of displacements:
* Strain
* Adhesions
* Weak muscles
* Injuries during childbirth or surgery

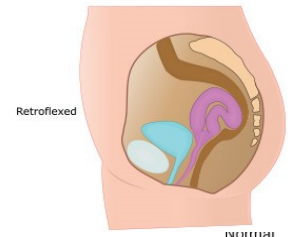


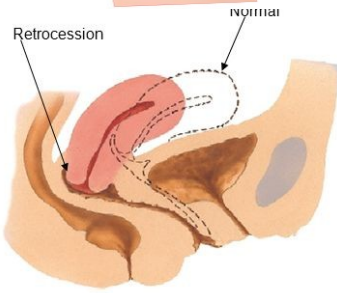


Anteflexion/Anteversion

- Forward bending
- Small, underdeveloped uterus
- No s/sx, possibly urinary
- Unable to conceive - due to size of uterus rather than position







<u>Retrodisplacement</u>

- Posterior displacement; Uterus falls backward toward the rectum; pregnancy & delivery
- 3 Types of retrodisplacement:

* <u>Retroversion</u>: backward rotation of uterus with forward rotation of cervix; can occur in degrees

* <u>Retroflexion:</u> when uterus bends backward; cervix remains in normal positions

* <u>Retrocession:</u> no rotation or bending, just further back placement

- Causes
  - * Congenital; supporting structures – damage, relaxation; misshaped pelvis

- Clinical Manifestations
  - * Low back pain, pelvic pain
  - * Dysmenorrhea, menorrhagia
  - – Fatigue, bladder irritation
  - * Dyspareunia, infertility

- Treatment
  - * Conservative: Kegels, pelvic exercises, knee-chest exercises, pessary
  - * Surgery- uterine suspension

Cystocele

- Hernia of vaginal supports allowing the bladder to bulge into the upper vagina.
- If advanced: seen on inspection; if less severe: seen when straining
- Causes
  * Childbirth, decreased hormones with menopause

- Clinical Manifestations
  - Vaginal pressure, dragging pain, "sitting on a ball"
  - Bearing down sensation
  - Urinary retention & cystitis
  - Urge & stress incontinence, frequency, urgency

- Treatment
  - Early stages:
  - Surgery - *Anterior Colporrhaphy* (tightens vaginal wall; sutures)
    - Post-op care: foley catheter; perineal care; ice packs; sitz baths

Rectocele

- Hernia of vaginal supports allowing the rectum to bulge into the lower third of the vagina.
- Causes
  - Childbirth, decreased hormones
- Clinical Manifestations
  - Vaginal pressure, rectal fullness, incomplete fecal evacuation
  - Severe: may need to reduce hernia to defecate
  - Constipation, hemorrhoids, incontinence
- Treatment
  - Early stages:
  - Surgery – *Posterior Colporrhaphy*
- Post-op care:
  - Avoid straining:
  - Perineal care, ice pack, sitz baths later

Urethrocele

- Urethra bulges into the vagina
- Can develop during pregnancy; clears up spontaneously; reoccurrence with menopause
- Stress incontinence
- Treatment
  - Can treat with *Marshall Marchetti* – bladder suspension

Enterocele

- Hernial weakness between the uterosacral ligaments just posterior to the cervix – small bowel
- Congenital or from birth trauma

- Often misinterpreted as a rectocele (found after repair)
- Clinical manifestations
  - Discomfort, vaginal pressure, GI obstruction
- Treatment: pessary, weight loss, surgery

Nursing Care for "cele" Repairs

- Preoperative
- Patient teaching – expectations and preparation
- Post-op expectations: catheter, packing, bleeding, pain/pressure

- Postoperative
- Prevent pressure- suture line
  - Prevent infection
- Perineal care
- Sitz baths
- Ice packs
- Foley catheters – suprapubic or urethral
- Discharge instructions: douches, laxatives, restrictions: activity

Stress Incontinence

- This is involuntary leakage of urine upon coughing, sneezing, laughing- causing sudden increase of intra-abdominal pressure
- Pathophysiology: Loss of normal muscle support to base of bladder and urethra which leads to sinking of these organs to dependent position and places them in direct line of impact from increase of intra-abdominal pressure
- Causes: Childbirth, muscle tone loss, decrease estrogen, chronic cough, heavy lifting, obesity, tight girdles

- S/Sx-

- Dx-
  - H&P;
  - UA;
  - urethrocystography– can show the permanent changes in the urethrovesical region;
  - vesical neck elevation test – in lithotomy position, have cough/strain with full bladder, MD will elevate and support the bladder neck- if it prevents descent and incontinence = good candidate for surgery

- Tx- Kegel's, surgery- vaginal / abdominal
  - *Marshall Marchetti* – bladder suspension , sutured into place
  - Urethral sling – supports urethra and bladder neck, sutured into place

Fistula

- Is an abnormal opening between internal organs (vagina) or between an organ & the exterior of the body, for example:
    - Vagina and the bladder = vesicovaginal
    - Vagina and the urethra/ureter = urethrovaginal
    - Vagina and rectum = rectovaginal
- Causes: gynecological procedures, childbirth, radiation, cancer, IBS
- s/sx- excoriation, irritation ➔ infections, wetness, odor
- tx- small fistulas – spontaneously heal; if not, surgery (may need temp. ileal conduit or colostomy)
- Pre & Post-Op care:
    - Good hygiene
    - Perineal cleanse, warm sitz baths
    - Encourage po fluids

BENIGN TUMORS OF THE FEMALE REPRODUCTIVE SYSTEM

Leiomyoma (myoma, fibromyoma, fibroid, fibroma)

- Uterine Fibroids
- Most common benign tumor of female reproductive tract
- Hormone dependent for growth ***
- Characteristics-
    - well circumscribed,
    - nonencapsulated;
    - can be single or multiple,
    - size varies;
    - most found in the body of uterus; intramural- within myometrium, submucous- beneath endometrium in the cavity of uterus

- Diagnosis
    - PE & H&P; abdominal palpation- if tumor is large or if uterus is displaced
    - Pelvic sono, transvaginal, saline sono
    - Hysteroscopy
    - MRI- benign vs. malignant lesions

- Clinical Manifestations
    - Uterine enlargement
    - Menorrhagia, dysmenorrhea
- Infertility
    - Pelvic pressure (bladder-frequency and urgency, rectum- constipation, pelvic vessels- edema and varicosities)

- Treatment
  - Hormone therapy – BCP (bleeding)
  - Myomectomy- retain fertility or hysterectomy – vaginally if tumors not too large
- Desires children: NSAIDs, BCP, GnRH agonists, TCRE (see below)

- Uterine artery embolization: polyvinyl alcohol pellets into uterine artery ➔ starves tumor = shrink (does not preserve fertility)

- Transcervical endometrial resection (TCRE) via hysteroscopy- destroyed by heat or ablation

Cervical Polyps

- Benign, pedunculated lesions (pedicle or stalk), protrude from cervical os
- Single, clusters
- Soft, bright red, fragile - < 3 cm
- Asymptomatic - except bleeding post intercourse
- Tx: Excision of polyp

Ovarian Tumors

- Benign or malignant; small or large
- 2 types: Fluid filled or solid mass; frequently bilateral; asymptomatic until large enough to cause pressure; simple cysts are surrounded by thin capsule, usually in reproductive years
- Symptoms- Constipation, urinary frequency, abdominal fullness, pelvic pain, increase abdominal girth, irregular menses

- Diagnosis-
  - Pelvic exam
  - Laparoscopy
  - US

- Treatment- may need to remove one or both ovaries if > 8 cm/solid
- Ovarian torsion – remove

- **Polycystic ovary (PCOS = Polycystic Ovary Syndrome)**
  - Presents as: benign cysts form on the ovaries
  - Caused by ↑ LH & ↓ FSH (too much estrogen and testosterone and not enough progesterone)
  - Present with: *irregular periods, amenorrhea, or oligomenorrhea, DUB, infertility, hirsutism (abnormal hair growth) obesity, and acne*
  - If left untreated: develop CV disease, abnormal insulin metabolism DM II, and ovarian and endometrial cancer.
  - Dx: Pelvic US
  - Tx:

- BCP- control menstrual cycles;
- hyperandrogenism – GnRH agonist: leuprolide/Lupron and Eulexin;
- glucaphage/Metformin – reduces hyperinsulinemia, improves hyperandrogenism and ovulation;
- Clomiphene/Clomid – fertility meds for those that desire pregnancy
- Hyster with bilat salpingectomy and oophorectomy - if all other tx fail

- Patient teaching: weight management; f/u for effectiveness of treatment & detect any complications
- Extra: Most are following a special diet: low carb, high fiber, low salt, etc…

Endometriosis

- Endometrial tissue found outside of the uterus
- Tissue responds to cyclic changes
- Common in nulliparous women ages 25-40 with infertility in 30-60%
- Infertility often occurs (bloackage)
- <u>Etiology / Theories</u>
  - Theory of Regurgitation:
    endometrial tissue regurgitates through the fallopian tubes and deposits particles of endometrium outside the uterine cavity
  - Genetics
  - Altered immune function:
    immune system does not respond properly therefore allowing cells to implant outside the uterus
  - Undifferentiated embryonic peritoneal cavity cells:
    remain dormant in pelvic tissue until ovaries produce sufficient hormones to stimulate their growth

- <u>Clinical Manifestations</u>
  - Asymptomatic (most until 30-40 yrs of age)
  - Relate to **<u>location of tissue more than degree of disease present</u>**
  - Pain – crampy to sharp; **secondary dysmenorrhea**
  - Menstrual irregularities, dyspareunia, full feeling in lower abd
  - Infertility
  - Cysts on ovaries- painful

- Diagnosis
  - H&P, pelvic exam, laparoscopy
- Exam with lap + biopsy = most definitive
- MRI

- Treatment
  - Mild symptoms – analgesics, support, diuretics
  - Severe symptoms:
    - Pregnancy / Menopause:
      - Oral contraceptives (estrogen & progesterone = pseudopregnancy)
      - Antigonadotropics- Danazol & GnRH agonists- leuprolide = (pseudomenopause)

    - Surgery:
      - Conservative: LOA
      - Radical: removal of uterus, tubes, & ovaries (along with as many implants as possible) may leave ovaries

- Antigonadotropics – decrease ovarian function
  - Androgen hormonal therapy – danazol (Danocrine)
    - Create pseudomenopause
    - Inhibits anterior pituitary's output of FSH & LH – suppresses the ovaries – decreases estrogen & progesterone secretion – anovulation; ovulation returns when med stopped
    - Side effects: (nay not be reversible) hirsutism, hot flashes, & other menopause like s/sx
    - Typical dose: 600-800mg x3-4 per day x3-6 months
    - Take with BCP

- GnRH agonists – leuprolide (Lupron)- IM injection monthly, nafarelin acetate (Synarel)- intranasal
  - Superstimulates the pituitary – menopausal state created – amenorrhea
  - Side effects: menopause like with loss of bone density
  - On for about 6 months; take with BCP

- Meds to help with PMS/PMDD/DUB: *iron supplements, SSRI's, diuretics, NSAID's*

- Teaching: early pregnancy if possible; explain diagnosis & treatment modalities- side effects; follow-up care

Adenomyosis

- Benign invasive growth through myometrium
- "internal endometriosis"
- Incidence: 40-60 yrs of age
- Signs / Symptoms-
  - Bleeding is: prolonged & persistent
  - Uterus may be: large, tender, firm
  - Help with diagnosis*

- Treatment

Surgery - hyster, try to keep ovaries, radiation used only when surgery is absolutely contraindicated

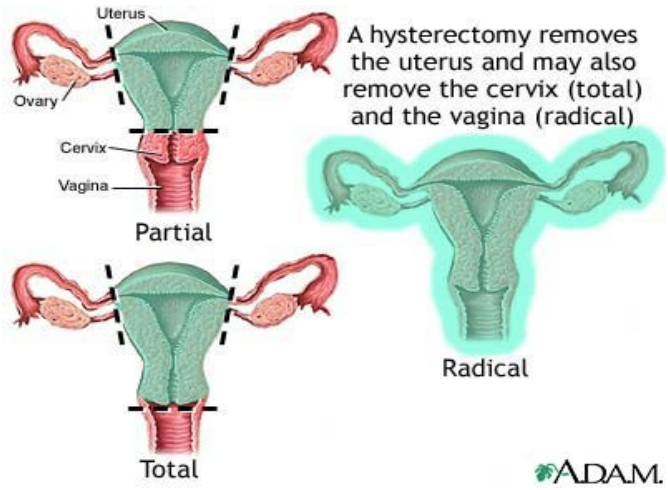
Hysterectomy

- Surgical removal of the uterus
  - Vaginal or abdominal

- Indications
  - Cancer
  - Cervical dysplasia
  - Uterine fibroids
  - Endometriosis
  - Chronic PID
  - Uterine prolapse
  - Uterine rupture
  - Sterilization

Approaches

- Vaginal : vaginal repair in addition to removal of uterus
- Abdominal : done for large tumors, removal of tubes/ovaries, increase risk of complications
- Lap-assisted Vaginal Hysterectomy – LAVH : visualize organs and remove uterus vaginally



- Types of Surgical Procedures
- Total hysterectomy: removal of cervix with uterus

- Panhysterectomy (TAH BSO): uterus, cervix, tubes, ovaries

- Radical hysterectomy: panhyster with partial vaginectomy & dissection of pelvic lymph nodes

- Pelvic exenteration: radical with total vaginectomy, bladder removal, bowel resection

Anterior- no bowel resection
Posterior- no bladder removal

- LAVH: uterus removed from vagina

- Preoperative care:

- Emotional disturbance in self-concept: loss of sexuality need support and understanding, include spouse and or companion in discussion

- Deficient knowledge: no longer menstruate.
  If ovaries are left intact, they will not have immediate menopause.

  Altered sexual response- uterus has important role in orgasmic response and also pressure against the cervix is pleasurable for some these sensations will be absent

  Also need to make sure pt has **stopped taking bcp 3-4 weeks preop**

- Postoperative care

  - Complications