Reproductive System

PHYSIOLOGY OF THE REPRODUCTIVE SYSTEM

Male Reproductive System
A. External genitalia.
B. Internal genitalia.
1. Testes (gonads): spermatogenesis occurs in seminiferous tubules, and testosterone is produced by the interstitial cells.
2. Epididymis: a tubular, coiled segment of the spermatic duct that stores spermatozoa until they are mature and then transports sperm from the testis to the vas deferens.
C. Accessory glands.
1. Seminal vesicles: sac-like structures posterior to the prostate that secrete nearly one-third of the volume of semen; also produces prostaglandin.
2. Prostate gland: produces a slightly alkalotic substance that contains high levels of acid phosphatase and serves as the vehicle for spermatozoa.
D. Semen.
1. Male ejaculate composed of spermatozoa (2% to 5%) and seminal plasma.
2. Alkaline pH: 7.2 to 7.4.
3. Average volume of ejaculate: 2.5 to 4 mL; may vary from 1 to 10 mL; repeated ejaculation leads to increased volume.
4. Sterility: sperm count less than 20 million per milliliter (normal sperm count = 100 million per milliliter).
5. Storage of sperm: varies from a period of several hours to 40 days, depending primarily on the frequency of ejaculation.

Female Reproductive System
A. External genitalia.
1. Labia majora: contain an extensive venous blood supply, which leads frequently to edema and varicosities in pregnancy.
2. Periurethral (Skene) glands: often the site of gonorrheal infection.
B. Internal genitalia.
1. Vagina: a thin-walled, muscular membranous canal that connects the external genitalia with the center of the pelvis.
2. Cervix: protrudes into the vagina.
3. Uterus: a hollow, pear-shaped, muscular pelvic organ; located between the bladder and the rectum.
4. Fallopian tubes: attached to the upper, outer section of the uterus.
5. Ovaries: located behind and below the fallopian tubes, produce ova, estrogen, and progesterone.
C. Breasts: divided into lobes and lobules arranged in a radial pattern, separated by fibrous tissue called Cooper's ligaments.
D. Menstrual cycle (Figure 22-1).
1. The cyclical hormonal changes occurring from menarche to menopause.
2. Variation in menstrual cycle length is always due to variation in the proliferation phase—once ovulation occurs, the secretory phase is 14 days in length.
3. Fertilization: generally occurs in the outer third of the fallopian tube; a single ejaculation deposits 2.5 to 4.0 mL of semen, containing approximately 200 to 400 million spermatozoa.
4. Implantation: The zygote (fertilized ovum) is propelled by ciliary action of the fallopian tube into the uterus.

a. The pH is acidic and is maintained by a relationship between lactic acid-producing Döderlein's bacilli (lactobacilli) and the vaginal content.
b. Bacilli break down vaginal epithelial cells; disruption of this cycle (antibiotic therapy, douching, vaginal sprays, etc.) may destroy the normal self-cleansing action of the vagina.

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uterine cavity; implants in the endometrium about 7 to 10 days after fertilization.

**System Assessment**

A. External assessment.
1. Assess vulvar area for discharge, erythema, swelling, or growths.
2. Assess penis for growths, masses, erosions, ulcers, or vesicles.
3. Inspect breasts for nipple inversion, retraction, secretions, nodules, lumps, color changes, erythema or masses.
4. Determine whether there is any abdominal pain or tenderness on palpation.

B. Internal assessment.
1. Pelvic examination.
   a. Collection of cells from the cervix for a Papanicolaou (Pap) smear.
   b. Bimanual examination.
2. Digital rectal examination.
   a. To evaluate prostate for size, shape, pain, or tenderness.
   b. Useful in female prostate exams for assessing fistulas, masses and anatomy.

C. History.
1. Menstrual history.
   a. Age at onset.
   b. Last menstrual period.
   c. Duration of cycle, amount of flow, number of cycles per year, and use of birth control methods.
2. Obstetrical history.

3. Urinary system.
   a. Pattern of voiding: dysuria, urgency, nocturia, frequency.
   b. Difficulty starting stream, stopping stream, or changing the force of stream; a feeling of incomplete emptying of bladder.
   c. Hematuria, incontinence, color, odor.

4. Sexual function.
   a. Ability to achieve erection and ejaculation.
   b. Problems with intercourse.
   c. Bleeding after intercourse.
   d. Exposure to sexually transmitted diseases (STDs).
   e. Change in sex drive, libido.
   f. Adequate lubrication for sexual activity.

**Disorders of the Reproductive System**

A. Benign prostatic hypertrophy (BPH) or hyperplasia: enlargement of prostate gland tissue.
B. Cancer of the prostate: a malignancy of the prostate gland, which is a hormone-dependent adenocarcinoma; growth of the tumor is usually related to the presence of androgen hormone.

**Assessment**

A. Risk factors/etiology.
1. BPH: very common in men older than 50 years.
2. Prostatic carcinoma: rarely found in men younger than 60 years; usually found in the posterior lobe of the prostate gland.

B. Clinical manifestations.

**Alert** Relate client’s symptoms to adverse reactions of medication. Carefully assess the client with BPH in regard to anticholinergic medications (atropine) that cause urinary retention as a side effect.

1. Common to both disorders.
   a. Bladder outlet obstruction.
      (1) Urinary hesitancy, frequency, urgency, and dribbling.
      (2) Nocturia, hematuria, urinary retention, and a sensation of incomplete emptying of the bladder.
      (3) Urinary retention may cause overflow urinary incontinence and dribbling after voiding.
   b. Acute retention may cause hydroureter and pressure in the kidney.
   c. Increased incidence of urinary tract infection due to residual urine.

2. Prostatic cancer.
   a. Tumor grows slowly and is confined to capsule; therefore prostate may appear normal, thus delaying the diagnosis.
   b. On digital rectal exam, unilateral prostatic enlargement; prostate is described as “stony hard” and fixed.
c. Obstruction is rare unless BPH is also present.
d. Pain in the hip or back may be presenting symptom as a result of metastasis.

C. Diagnostics.
1. Digital rectal examination.
2. Cystoscopy and bladder scan.
3. Urinalysis with culture and sensitivity.
4. Transrectal and/or transabdominal ultrasound.
5. Rule out or diagnose cancer.
   a. Prostate-specific antigen (normal PSA 0-4 mcg/L) for cancer.
   b. Tumor markers for diagnosis, staging, and monitoring progress.
   c. Needle biopsy of prostate.

Treatment
A. Medical.
   1. BPH: finasteride (Proscar) and alpha adrenergic blockers to shrink prostatic tissue.
   2. Radiation, hormonal therapy, and chemotherapy for malignancy.
B. Surgical: size of prostate and general health dictate the type of surgery.
   1. Transurethral resection of the prostate (TURP): removal of prostatic tissue via a resectoscope, which is passed through the urethra (Figure 22-2).
   2. Transurethral incision of the prostate (TUIG): making transurethral slits or incisions into prostate to relieve obstruction; effective with minimally enlarged prostate (BPH).
   3. Prostatectomy: removal of the prostate via suprapubic, retropubic, or perineal approach; may be done by incision or laproscopically; most often for removal of malignancy.
   4. Transurethral microwave therapy (TUMT) and transurethral needle ablation (TUNA): microwaves are delivered directly to the prostate; heat causes necrosis of tissue; both procedures are done on an outpatient basis.
5. Internal radiation therapy (brachytherapy) involves the placement of tiny radioactive “seeds” into the prostate for treatment of cancer.
6. Hormone therapy (anti-androgen medications—Lupron): depriving the cancer cells of testosterone may help slow the growth of prostatic cancer.
7. Cryotherapy (cryoablation): liquid nitrogen is applied to the prostate via a transrectal ultrasound probe; dead cells are absorbed by the body.

Complications
A. BPH.
   1. Preoperative.
      a. Urinary tract infection (UTI).
      b. Rupture of overstretched blood vessels in the bladder and hematuria.
      c. Hydroureter (distention of the ureter) and hydronephrosis (enlargement of kidney caused by postrenal obstruction) with resultant renal failure.
   2. Postoperative.
      a. Hemorrhage: especially in the first 24 hours.
      b. Urinary incontinence.
      c. Bladder spasms.
      d. Retrograde ejaculation: semen passed into the bladder rather than out through the penis.
      e. Infection.
B. Prostatic cancer.
   1. Preoperative.
      a. Complications are similar to BPH.
      b. Cancer may spread via the perineal lymphatic system to the regional lymph nodes; from the veins of the prostate, it may metastasize to the pelvic bones, bladder, lungs, and liver.
   2. Postoperative.
      a. Increased problems with deep venous thrombosis caused by lithotomy procedure.
      b. Change in sexual functioning: impotence and failure to ejaculate.
      c. Incontinence assessment.

Nursing Interventions
Goal: To promote elimination, to treat UTI, and to provide client education (Box 22-1).
A. Evaluate adequacy of voiding and presence of urinary retention and infection.
B. Teach client to avoid bladder distension, which results in loss of muscle tone.
   1. Do not postpone the urge to void; it is important to prevent overdistention of the bladder, which further complicates the problem.
   2. Avoid drinking a large amount of fluid in a short period of time.
   3. Avoid alcohol because of the diuretic effect.
C. Encourage annual digital rectal examination of the prostate for all men older than 40 years.
D. Examination is recommended every 6 months for clients who have BPH or who have had a prostatectomy.

**NURSING PRIORITY** Assess all male clients older than 50 years for symptoms of BPH. BPH occurs in 80% of men older than 80 years.

**Goal:** To maintain closed irrigation after surgery in the client who has undergone TURP or suprapubic prostatectomy (Figure 22-3).

A. Continuous bladder irrigation (CBI) with sterile, antibacterial, isotonic irrigating solution (Murphy drip, closed bladder irrigation).

1. Closed bladder irrigation is done with a triple-lumen catheter: one lumen for inflating the balloon (30 to 50 mL of water), one for maintaining outflow of urine, and one for the instillation of the continuous irrigating solution.

**Box 22-1 OLDER ADULT CARE FOCUS**

**Benign Prostatic Hypertrophy**

**General**
- All men over 50 years of age should be assessed for urinary retention and adequacy of bladder emptying.
- Increased problem with urinary stasis; increased straining to urinate; increased incidence of infections.

**After Surgery**
- Closely evaluate for presence of infection, especially UTI, respiratory.
- Assess fluid balance; confusion and agitation may be symptoms of fluid overload.
- Help the client ambulate as soon as possible—increased risk for pooling of blood in pelvic cavity and pulmonary emboli from immobility.
- Client is at increased risk for falls.
- Determine psychologic response to physical stress (confusion, disorientation); orient to surroundings frequently.

2. Provides continuous irrigation to prevent infection and to flush the bladder of tissue and clots after TURP.

3. If clots occur, the catheter may be irrigated, or the rate of flow may be increased until the drainage outflow clears.

4. Calculate intake and output carefully; a large amount of bladder irrigation fluid must be subtracted from total output to determine client’s true urinary output.

5. Monitor/titrante CBI so the outflow is light pink without clots; notify surgeon of any increase in bleeding.

6. If catheter is occluded and does not drain properly, turn off the CBI until catheter patency is reestablished.

B. Blood clots and pieces of tissue are normal for the first 24 hours after TURP.

C. If client has excessive bleeding, the physician may increase the size of the balloon on the indwelling catheter and put traction on the catheter to compress the area of bleeding.

D. Client should void within 6 hours of removal of catheter.

**NURSING PRIORITY** Maintain continuous bladder irrigation for the client who has undergone TURP; prevent overdistention of the bladder. If client complains of pain, check the urinary drainage and make sure it is patent. Obstruction most commonly occurs in the first 24 hours as a result of clots in the bladder.

E. Bladder spasms: belladonna and opium suppositories or antispasmodics are administered as needed; spasms often occur because of the presence of clots in the catheter; check the catheter for patency.

F. The sensation of a full bladder is common while the irrigating catheter is in place; explain (repeatedly) about

**FIGURE 22-3** Transurethral resection of the prostate. (From Zenewk J, Claborn J: Memory notebook of nursing, vol 1, ed 4, Ingram, Texas, 2008, Nursing Education Consultants Inc.)
the urinary catheter and advise the client to avoid bearing down in an attempt to void.

**Goal:** To provide postoperative care.
A. After client is ambulatory, encourage walking, rather than sitting for prolonged periods.
B. Teach client exercises to control urinary stream and maintain continence.
   1. Have client contract perineal muscles (Kegel exercises) by squeezing buttocks together.
   2. Instruct client to practice starting and stopping the stream several times while voiding.
C. Assure client that TURP does not usually cause problems relating to sexual functioning; provide an opportunity for open discussion of sexual concerns.
D. Dribbling after voiding is a common problem, which often subsides within a few weeks.
E. Teach client to avoid straining during bowel movement; encourage diet high in fiber, and administer stool softeners as needed.
F. Discuss with the client the importance of maintaining a high fluid intake to prevent UTIs.
G. Encourage client to minimize use of caffeine-containing products, which may cause bladder spasms.

**Goal:** To provide postoperative care for a client after radical open prostatectomy.
A. Maintain adequate pain control, frequently with patient-controlled analgesia.
B. As a result of the surgical position and postoperative immobility, client is at high risk for deep venous thrombosis.
   1. Monitor sequential compression devices.
   2. Apply antiembolism stockings.

**ALERT** Identify symptoms of deep venous thrombosis.
C. Perineal prostatectomy and total prostatectomy for cancer frequently result in erectile dysfunction caused by damage to the pudendal nerves and urinary incontinence.
D. Record output from drains.
E. Emphasize importance of not straining against catheter to relieve bladder pressure.
F. Evaluate for urinary retention.

**ALERT** Explain procedure to client and family. It is important to clarify for the client the information the doctor gives him; however, it is the doctor’s responsibility to advise the client regarding any complications he may experience with sexual functioning.

**Inflammatory Disorders**
A. Prostatitis: inflammation of the prostate, usually caused by bacteria *Escherichia coli, Proteus spp.*, or by a sudden decrease in sexual activity.
B. Epididymitis: inflammation of epididymis, often associated with prostatitis or a UTI; often develops as a complication of gonorrhea; in men younger than 35 years, the primary cause is infection with *Chlamydia trachomatis*.

**Assessment**
A. Clinical manifestations.
   1. Prostatitis.
      a. Fever and chills.
      b. Perineal, rectal, and/or back pain.
      c. Dysuria, urethral discharge.
      d. Prostate is enlarged, firm, and tender when palpated.
      e. May be acute or chronic with exacerbations.
      f. Increased risk with catheterizations, bladder infection, or alternative sexual activity.
   2. Epididymitis.
      a. Pain and tenderness in the inguinal canal.
      b. Painful swelling in the scrotum and groin.
      c. Fever and chills.
      d. Pyuria and bacteriuria.
      e. Feeling of “heaviness” in the testicle(s).
B. Diagnostics.
   1. Rectal examination.
   2. Complete blood count.
   3. Urine and semen culture and sensitivity.
   4. Screen for STDs.
   5. Doppler ultrasonography or nuclear medicine scan for testicular torsion.

**Treatment**
A. Prostatitis.
   1. Antibiotics.
   2. Analgesics, stool softeners, and sitz baths.
B. Epididymitis.
   1. Bed rest with elevation of the scrotum (scrotal support or scrotal bridge).
   2. Antibiotics, if indicated.
   3. Treatment of client’s sexual partners (or gonorrhea infection).
   4. Cold compresses; NSAIDs.

**Complications**
A. Chronic prostatitis can lead to recurrent UTIs and epididymitis.
B. May cause chronic reoccurring incapacitating infections.
Nursing Interventions

Goal: To assist client to understand measures to maintain health.
A. Encourage early treatment to prevent complications.
B. For chronic prostatitis, encourage activities that drain the prostate, including intercourse, masturbation, and prostatic massage.
C. Antibiotics may not be effective because it is difficult to obtain therapeutic levels in prostatic secretion.
D. Encourage treatment of sexual partners when epididymitis is caused by chlamydia or gonorrhea.

Undescended Testes (Cryptorchidism)
Cryptorchidism is a condition of failure of one or both testes to descend into the scrotal sac.

Assessment
A. Inability to palpate the testes in the scrotal sac.
B. Cremerastic reflex is normal retraction of the testes when stimulated by stroking the thigh on affected side downward; may present a problem in attempting to determine whether there is an undescended testicle or if a testicle is retractable.
C. Testicle may be absent or small or may be located in the abdomen.

Treatment
A. Condition may be observed for 1 year; most cases descend spontaneously; if undescended after 1 year, surgery may be required.
B. Surgical intervention-orchiopexy: testis is brought into the scrotal sac and secured.
   1. Prevents damage to the undescended testicle by body heat.
   2. Decreases the incidence of tumor formation.
   3. Usually done between the ages of 6 and 24 months; fewer complications are encountered if repair is done before 5 years of age.
   4. Men with a history of cryptorchidism are at increased risk for fertility problems and development of testicular cancer in adulthood.

Nursing Interventions

Home Care
A. Long-term follow-up regarding fertility.
B. Prevent infection by careful cleansing after defecation and urination because of the close proximity of the scrotum.
C. Teach parents to show the child how to do testicular self-examinations when he is old enough.

Testicular Tumors (Cancer)
Tumors of the testicles are often malignant and tend to metastasize quickly.

Assessment
A. Most common cancer in men ages 15 to 35 years.
B. More common in clients who have had cryptorchidism and infections.
C. A painless lump (typically, pea-sized) is palpated in the scrotum.
D. Most men experience “heaviness” in the scrotum.
E. For clients ages 40 to 60 years old, if possible, determine if mother was given diethylstilbestrol (DES) during pregnancy. There is a significant increase in the risk for testicular cancer among these clients.
F. A significant enlargement of or shrinking of one testicle.
G. Diagnostics.
   1. Levels of alpha-fetoprotein (AFP) and human chorionic gonadotropin (hCG) are increased.
   2. Computed tomography (CT) and magnetic resonance imaging (MRI).
   3. Ultrasound.
   4. Biopsy is not possible because of the risk for spreading cancer locally.

Treatment
A. Surgical intervention: orchiectomy (removal of the testicle) is performed as soon as possible to remove the tumor and make a definite diagnosis. If there is lymph node involvement, a retroperitoneal lymph node dissection, which is extensive radical abdominal surgery, is performed.
B. Medical.
   1. Postoperative irradiation to the lymphatic drainage pathways.
   2. Multiple chemotherapy medications.

Nursing Interventions

Goal: To detect any abnormality of the testes through self-examination by client (Box 22-2).

Box 22-2 TESTICULAR SELF-EXAMINATION

- Examine the testicles at same time every month, to help you remember to do it.
- Visually inspect scrotum in front of a mirror observing for swellings.
- Perform the examination after a bath or shower because this is when the scrotal sac is relaxed.
- Examine each testicle individually by placing index and middle fingers of both hands under one testicle at a time with thumbs on top of testicle. Roll the testicle between the thumbs and fingers. This should NOT cause pain. The tissue should feel smooth.
- Locate the epididymis which is a tubular sac behind the testicle. This sac should not be confused with a lump.
- Also assess for any “heaviness” or dull ache in the groin or abdomen or significant increase or decrease in size of either testicle.
- If there is any lump or irregularity on either testicle, report it to the doctor as soon as possible.
A. Teach clients, especially those between the ages 15 and 35 years, to self-examine monthly while showering or bathing to detect any abnormality of the testes.
B. Emphasize importance of follow-up for clients with a history of undescended testes or a previous testicular tumor.

**Goal:** To assist the client to understand the implications of surgery.

\[ \text{Hydrocele and Varicocele} \]

A. Hydrocele: a collection of fluid around the testicle or along the spermatic cord. Client usually does not experience any pain. If circulation becomes impaired, then client experiences more discomfort.
B. Varicocele: a cluster of dilated veins in the scrotal sac, often just above the testes; occurs most often in young adults.
1. Does not experience severe pain, but a chronic dull ache in the scrotal area.
2. May contribute to infertility because sperm temperatures may be too high which affects sperm formation and motility.
C. Treatment.
1. Hydrocele: needle aspiration or surgical aspiration and drainage.
2. Varicocele: surgical intervention only if there are complications with fertility; otherwise, a scrotal support is used.
D. Nursing intervention: provide preoperative and postoperative care (see Chapter 3).

\[ \text{Erectile Dysfunction (ED)} \]

**Inability to attain or maintain an erect penis.**

**Assessment**

A. Risk factors/etiology.
B. Clinical manifestations.
1. Inability to attain or maintain an erection.
2. Gradual onset with physiologic ED and abrupt onset with psychologic ED.

**Treatment**

A. Medical: ED medications (Figure 22-4 and Appendix 22-1).
B. Vacuum constriction devices (VCD): applying a suction device to the penis to pull blood up into the corporeal bodies, then placing a penile ring or constrictive band to trap the engorgement.
C. Intraurethral devices: mediated urethral system for erection (MUSE)—administration of medications as a topical gel, injection into penis, or insertion of medication pellet into urethra.
D. Penile implants: surgical insertion of an implant.

**Nursing Interventions**

**Goal:** To help the client understand the implications of the medications or devices used to treat ED and assist to obtain counseling.

A. Teach client about how ED medications can potentiate hypotensive effects of nitrates and should not be taken at the same time.
B. Client should abstain from alcohol if taking ED medications.

\[ \text{Cystocele and Rectocele} \]

Cystocele is a weakened support between the vagina and bladder allowing the bladder to bulge into the vagina. Rectocele is a weakened support between the vagina and rectum allowing the rectum to bulge into the vagina.

**Assessment**

A. Risk factors/etiology.
1. Obesity and childbearing.
2. Genital atrophy caused by aging.
B. Clinical manifestations.
1. Cystocele: protrusion of the bladder into the vagina.
   a. Stress incontinence: occurs during coughing, lifting, or sneezing.
b. Frequency and urgency.
c. Difficulty emptying bladder.

2. Rectocele: protrusion of the rectum through the vaginal wall.
   a. Constipation.
   b. Incontinence of gas or liquid feces.

C. Diagnostics: bimanual pelvic examination.

Treatment
A. Medical: Kegel exercises for mild stress incontinence (tighten and release perineal muscles several times during the day); client can also practice stopping urination in midstream and holding it for a few seconds.
B. Surgical.
   2. Rectocele: posterior colporrhaphy.
   3. Procedure is usually called “A and P repair.”

Nursing Interventions
Goal: To help the client understand the implications of, and be prepared for, surgery.
A. Preoperative teaching.
B. Postoperative period.
   1. Prevent wound infection.
   2. Warm compresses to abdomen may relieve discomfort.
   3. Assess for urinary retention and excessive vaginal bleeding.
C. Frequent perineal care as well as after each voiding or defecation.

Home Care
A. Encourage the use of mild laxatives to prevent straining at stool.
B. Prevent constipation
C. Certain activities are restricted until area has healed: lifting objects heavier than 5 pounds; intercourse; prolonged standing, walking, and sitting.
D. Call the doctor if there is persistent pain or purulent, foul-smelling vaginal discharge.

Vaginal Inflammatory Conditions
Common Predisposing Factors
A. Excessive douching.
B. Oral contraceptives, steroids.
C. Antibiotics: especially broad-spectrum, which wipe out normal vaginal flora (vagina is protected by an acidic pH and the presence of Döderlein’s bacilli).
D. Improper cleaning after voiding and defecating.
E. Assess for recurrent chronic infection; there may be an underlying condition (prediabetic state, HIV infection) that should be further evaluated.

Bacterial Vaginosis
A. Characteristics.
   2. Profuse yellowish discharge, “fishy smell.”
   3. Itching, redness, burning, and edema, which are exacerbated by voiding and defecation.
B. Treatment: antibacterial/antiprotozoal medication.
C. Complications: bacterial vaginosis may increase susceptibility to STDs and HIV infection if woman is exposed to either.
D. Factors associated with bacterial vaginosis include multiple sex partners, douching, smoking but may occur in non-sexually active women.

Candidiasis
A. Characteristics.
   2. Internal itching, beefy red irritation, inflammation of vaginal epithelium.
   3. White, cheese-like, odorless discharge that clings to the vaginal mucosa.
   4. Occurs frequently and is difficult to cure.
   5. Increased risk in women with diabetes and women taking birth control pills, during pregnancy, and after treatment with antibiotics.
B. Treatment.
   1. Antifungal vaginal medication.
   2. Oral antifungals.

Trichomoniasis
A. Characteristics.
   1. Organism: Trichomonas vaginalis (protozoan).
   2. May be asymptomatic.
   3. Itching, burning, dyspareunia (painful intercourse).
   4. Frothy, green-yellow, copious, malodorous vaginal discharge; strawberry spot on cervix.
   5. Sexual partners must be treated also because of cross-infection; men are usually asymptomatic.
B. Treatment: antibacterial/antiprotozoal medication.
C. Prevention: avoid extended time in synthetic or tight-fitting undergarments; use of condoms may reduce incidence of STDs.

Postmenopausal Vaginitis (Atrophic Vaginitis)
A. Characteristics.
   1. Lack of estrogen (this is also the cause).
   2. Itching and burning.
   3. Loss of vaginal tissue folds and epithelial covering.
B. Treatment: estrogen vaginal cream.

Nursing Interventions
Goal: To teach client to prevent infection by performing appropriate personal hygiene, to decrease inflammation, and to promote comfort.
A. Appropriate cleansing from front of vulva to back of perineal area.
B. Frequently a postmenopausal problem.
C. Client should not douche; douching removes normal protective bacteria from vaginal cavity, and other bacteria are introduced.
D. If infection is chronic, it may be necessary to have sexual partner tested; partner may be reinfecting the woman.
E. Discourage use of feminine hygiene sprays because they cause increased irritation.
F. Discourage client from wearing constricting clothing and synthetic underwear (encourage use of cotton underwear).

**Goal:** To educate the woman regarding correct use of medication.
A. Vaginal suppositories, ointments, and creams are often used.
   1. Handwashing before and after insertion of suppository or application of cream.
   2. Remain recumbent for 30 minutes after application to promote absorption and prevent loss of the medication from the vaginal area.
   3. Wear a perineal pad to prevent soiling of clothing with vaginal drainage.

**Nursing Interventions**
A. Help determine most likely cause of problem.
B. Report excessive bleeding, abdominal pain, fever.
C. Treatment.
   1. Dilation and curettage (D&C) for diagnostic purposes in older women.
   2. Endometrial ablation.
      a. Often done on outpatient basis with either general regional or local anesthesia.
      b. Spotting and vaginal drainage are common for several days; if amount is more than a normal period or if it lasts longer than 2 weeks, client should call the doctor.
      c. Client should report any signs of infection: fever; foul, purulent discharge; increasing abdominal pain.
      d. Nonsteroidal antiinflammatory drugs are often used for pain control.
      e. Client should avoid sexual intercourse and use of tampons for about 2 weeks.
D. Assess and treat for anemia.
   1. Encourage diet high in iron.
   2. Administer iron preparations, if required.

**Endometriosis**
Endometriosis is the presence of endometrial tissue outside of the uterus. The tissue responds to hormonal stimulation by bleeding into areas within the pelvis, causing pain and adhesions.

**Assessment**
A. Risk factors/etiology.
   1. Small pieces of endometrial tissue back up through the fallopian tubes into the abdomen during menstruation.
   2. Most common in women in their late 20s and early 30s who have never been pregnant.
B. Clinical manifestations.
   1. Dysmenorrhea: deep-seated aching pain in the lower abdomen, vagina, posterior pelvis, and back occurring 1 to 2 days before menses.
   2. Abnormal excessive uterine bleeding and dyspareunia; painful defecation.
C. Diagnostics.
   1. Laparoscopy.
   2. Ultrasonography.

**Treatment**
A. Medical: androgenic agents may be given over a 6- to 8-month period; or oral contraceptives may be prescribed; if a woman desires more children, she is encouraged to get pregnant, because the condition recedes during pregnancy.
B. Surgical intervention.
   1. Laser treatment of endometrial tissue in the extrauterine sites.
2. Hysterectomy (usually carried out in women close to menopause).

Nursing Interventions

Goal: To help client minimize the pain and discomfort associated with endometriosis.
A. Warm baths or moist heat packs may reduce discomfort.
B. Encourage client to explore alternative sexual positions that may minimize discomfort during intercourse.
C. Encourage client to discuss abstinence with partner if intercourse is painful.

Goal: To assist client to understand measures to maintain health.
A. Teach client about disease process; clarify any false ideas.
B. Provide emotional reassurance; discuss potential for infertility.
C. Initiate preoperative and postoperative teaching if surgery is elected.

Pelvic Inflammatory Disease

Pelvic inflammatory disease (PID) is an infectious condition of the pelvic cavity that involves the fallopian tubes, the ovaries, and/or the peritoneum.

Assessment

A. Risk factors/etiology.
   1. Complication of gonorrhea and Chlamydia trachomatis.
   2. IUDs are correlated with an increased incidence of PID.
   3. Increased number of sexual partners increases incidence of PID.
   4. Increases risk for repeat cases after previous episode of PID.
B. Clinical manifestations.
   1. General malaise, fever, chills, nausea, and vomiting.
   2. Leukocytosis and pain on urinating.
   3. Dull tenderness or bilateral lower abdominal pain.
   4. Vaginal discharge that is heavy and purulent.
   5. Painful intercourse.
C. Complications.
   1. Sterility caused by adhesions and strictures within the fallopian tubes.
   2. Ectopic pregnancy.
   3. Pelvic abscess or generalized peritonitis.
   4. Septic shock.
D. Diagnostics.
   1. Abdominal pain on palpation.
   2. Culture and sensitivity of drainage from the vagina, cervix, or cul-de-sac of Douglas.
   3. Ultrasonography, laparoscopy, culdocentesis.

Treatment

A. Medical: broad-spectrum antibiotics, analgesics.
B. Surgical: incision and drainage of abscesses with or without a laparotomy.

Nursing Interventions

Goal: To prevent the spread and extension of the infection.
A. Maintain semi-Fowler's position to promote drainage of the pelvic cavity by gravity.
B. Strict medical asepsis when in contact with discharge; wound and skin precautions.
C. Encourage oral fluids and maintain adequate nutrition.
D. Client should avoid sexual activity and douching.
E. Strongly encourage sexual partner(s) to seek medical treatment.

Goal: To provide psychologic support.
A. Encourage expression of feelings related to guilt and possibility of sterility.
B. Explain factors relating to the long-term management of PID and the importance of medical supervision.

Sexually Transmitted Diseases

Infectious diseases transmitted most commonly through sexual contact.
A. Characteristics.
   1. Transmitted by sexual activity, including oral and rectal activities between people of the same or opposite sex.
   2. One person can have more than one STD at a time.
   3. All sexual partners need to be evaluated.
B. Nursing role is to recognize and provide factual information.
   1. Mode of transmission.
   2. Prevention of transmission.
   3. Importance of contacts being identified and treated.
   4. Information provided in accepting, nonjudgmental manner.
   5. Oral contraceptives do not provide any protection.
C. Incidence.
   1. Nearly two thirds of STDs occur in people younger than 25 years.
   2. The number of STDs continues to rise.
D. Clients with STDs should be tested for HIV.
E. Hepatitis B and HPV are considered STDs (see Chapter 19).

Nursing Priority Consider all oral, genital, and rectal lesions to contain pathologic organisms until documented otherwise.

Syphilis

Characteristics

A. Causative agent: spirochete Treponema pallidum.
B. Incubation period: 10 to 90 days; average is 20 to 30 days.
C. Transmission: direct contact with primary chancre lesion, body secretions (saliva, blood, vaginal discharge, semen); also transmitted transplacentally to the fetus.
D. Communicability: highly infectious during the primary stage; blood contains the spirochete during the secondary stage; usually noninfectious after 1 year during the latent stage; and noninfectious in the late (tertiary) stage.

Assessment
A. Primary stage.
1. Chancre: small, hard, painless lesion found on the penis, vulva, lips, vagina, or rectum.
2. Usually heals spontaneously within 2 to 3 weeks, with or without treatment.
3. Regional lymphadenopathy.
B. Secondary stage.
1. Client may be asymptomatic; secondary stage usually begins anywhere from 2 weeks to 6 months after the chancre has healed.
2. Maculopapular rash on the palms of the hands and soles of the feet, sore throat, and headache.
3. Lymphadenopathy; gray mucous patches in the mouth.
4. Condylomata lata: flat lesions that may appear in moist areas; are most infectious of any syphilitic lesion (not to be confused with condylomata acuminate in genital warts).
5. Symptoms will disappear within 2 to 6 weeks.
C. Latent stage.
1. Absence of clinical symptoms.
2. Results of serologic tests for syphilis remain positive.
3. Transmission can occur through blood contact.
4. The majority of clients remain in this stage without further symptoms.
D. Congenital syphilis.
1. Maculopapular rash over face, genital region, palms, and soles.
2. Snuffles: a mucopurulent nasal discharge indicative of some degree of respiratory obstruction.
3. After the age of 2 years: Hutchinson’s teeth (notched central incisors with deformed molars and cusps).
E. Diagnostics.
2. Rapid plasma reagin test (PRP and RPR): may produce false-negative results in early stages.
3. Fluorescent treponemal antibody absorption (FTA-ABS) test.
4. VDRL and fluorescent treponemal antibody absorption tests are based on presence of antibodies, and results are not positive until about 4 weeks after the appearance of the chancre.
F. Complications: development of late (tertiary) syphilis and the resultant systemic involvement of the cardiovascular and central nervous systems.

Nursing Interventions
A. Administration of parenteral penicillin is treatment of choice. Tetracycline or doxycycline is administered if client is allergic to penicillin.
B. If pregnant mother is treated before the 18 weeks’ gestation, the fetus will usually be born unaffected.
C. Preventive education regarding sexual exposure, adequate case finding, and treatment of contacts.
D. All cases are reported to local public health authorities.

Gonorrhea
Characteristics
A. Most common venereal disease; an infection of the genitourinary tract; however, gonorrhea may also affect the rectum, pharynx, and eyes; caused by the bacteria Neisseria gonorrhoeae.
B. Incubation period: 3 to 4 days.
C. Transmission: direct contact with exudate via sexual contact or transmission to the neonate during passage through the birth canal.
D. Communicability: contagious as long as organisms are present.

Assessment
A. Men.
1. Urethritis, epididymitis, dysuria, and purulent urethral discharge.
2. Increased evidence of asymptomatic disease or a chronic carrier state in males.
B. Women.
1. Initial urethritis or cervicitis that is often mild enough to remain undetected by client.
2. Vulvovaginitis, vaginal discharge, dysuria.
3. If untreated, may result in PID.
C. Both men and women; arthralgias, joint pain from disseminated gonococcus.
D. Neonate: ophthalmia neonatorum.
E. Diagnostics.
1. Positive Gram stain smear of discharge or secretion.
2. Positive culture.
F. Complications.
1. Men: prostatitis, urethral strictures, urethritis, and sterility.
2. Women: PID, Bartholin’s abscess, ectopic pregnancy, infertility.

Nursing Interventions
A. Prophylactic antibiotic treatment for gonorrhea eye infection in the neonate (ophthalmia neonatorum).
B. Encourage follow-up cultures in 4 to 7 days after treatment and again at 6 months.
C. Teach importance of abstinence from sexual intercourse until cultures are negative.
D. Urge client to inform sexual partner so that he or she may be treated for infection.
E. Important to take the full course of antibiotics.
Herpes Genitalis

Characteristics

A. Infection caused primarily by herpes simplex virus 2 (HSV-2), which is characterized by painful vesicles surrounded by an erythematous area; progresses to shallow ulcers, pustules, and crusts; healing occurs spontaneously in about 2 to 4 weeks during the initial infection.

B. HSV-1 causes infection above the waist, involving the gingiva, dermis, and upper respiratory tract.

C. HSV-2 lesions characteristically occur below the waist, generally in the genital area and perineum; however, it is possible for HSV-2 to cause oral lesions and HSV-1 can cause genital lesions.

D. Virus enters a latent phase and may be harbored by the individual for an indefinite period of time; virus may be reactivated by stress, sunburn, sexual activity, and fever.

E. Recurrent outbreaks are usually less severe than the original outbreak of lesions.

F. Incubation period: unknown.

G. Transmission: by direct contact with the vesicles; asymptomatic shedding and transmission of virus are well documented.

H. Communicability: highly contagious.

Assessment

A. Initial sensation of tingling and itching before rupture of the lesion.

B. Signs of primary infection usually consist of local inflammation, pain, lymphadenopathy, and systemic symptoms.

C. Initial systemic malaise, fever, headache, and muscle aches.

D. Irritation of the genitals.

E. Genitals may become reddened with painful blisters, which burst into lesions that gradually heal.

F. Diagnostics: confirmed by using a tissue culture technique that identifies herpes type 2 virus; also by viral culture, serologic blood tests for antibodies for HSV-2, both IgG and IgA.

G. Complications.

1. Increased incidence of cervical cancer in women possibly due to co-infection with human papilloma virus (HPV).

2. Lesions or a positive viral tissue culture in a pregnant woman would be cause for concern. Client should be closely monitored to determine whether a problem with delivery is anticipated; cesarean delivery may be necessary.

Nursing Interventions

A. Teach importance of genital hygiene and avoidance of unprotected sexual contact.

B. Teach good hygiene practices. Explain that the fluid inside the lesions contains the virus. If a lesion breaks open, the virus can be spread by contact with the fluid and cause a lesion in any area of the body.

NURSING PRIORITY Always wear gloves when cleaning the perineal area of a client with HSV-2 to prevent herpetic whitlow, a herpes lesion around the nail bed. Nurses are at risk for developing this because of local contact with the HSV on broken skin areas around the nails.

C. If administration of oral antiviral agent is started at the first sign of a lesion, the duration of the outbreak may be decreased.

D. Symptomatic treatment: sitz baths, wet compresses, and analgesics for relief of pain.

Cytomegalovirus

Characteristics

A. Cytomegalovirus is a virus belonging to the herpes family, which leads to very mild illnesses but can cause a wide range of serious congenital deformities in the fetus or newborn (known as congenital cytomegalovirus).

B. Transmission: human contact.

C. Communicability: about four of five people older than 35 years have been infected with cytomegalovirus, usually sometime during childhood or young adulthood; symptoms are so mild that the diagnosis is frequently overlooked.

Assessment

A. The mother is usually asymptomatic or has mononucleosis-type symptoms.

B. Effect on the neonate: serious hematologic and central nervous system consequences; high mortality rate in severely affected neonates.

C. Diagnostics.

1. TORCH screening: Toxoplasmosis, Other (hepatitis), Rubella, Cytomegalovirus infection, Herpes simplex.

2. Increased lymphocyte count and abnormal liver function test results.

Nursing Interventions

A. Prevention is the primary goal. Pregnant women should avoid being around affected individuals and congenitally infected infants.

B. Prevention of exposure is almost impossible, because the primary infection is asymptomatic.

Chlamydia Infection

Characteristics

A. An infectious disease caused by Chlamydia trachomatis (most common STD).

B. Incubation period: 1-3 weeks.

C. Transmission: direct contact; sexual contact.
Assessment
A. Males.
   1. Urethritis, epididymitis, proctitis.
   2. Primary reservoir is the male urethra.
B. Females.
   1. Mucopurulent cervicitis, postpartal endometritis, salpingitis, vaginitis.
   2. Primary reservoir is the cervix.
C. Newborns.
   1. Inclusion conjunctivitis.
   2. Pneumonia.
   3. Hepatomegaly and splenomegaly.
D. Both males and females are frequently asymptomatic and often do not seek medical attention until a complication arises (PID, epididymitis).
E. Diagnostics: isolation of the organism in a tissue culture or serologic complement fixation testing.
F. Complication: reactive arthritis (can also be a primary symptom).

Nursing Interventions
A. Urge client to have sexual partner treated.
B. Emphasize the importance of long-term drug therapy because of the pathogen’s unique life cycle, which makes it difficult to eliminate.
   1. Antibiotics: doxycycline and azithromycin are primary antibiotics for treatment.
   2. Penicillin and its derivatives are not effective against these organisms; consequently, this usually explains the persistence of infection in clients who are treated for gonorrhea and do not respond.

Genital Warts
Characteristics
A. Characterized by cluster of warts caused by the human papilloma virus (HPV): condylomata acuminata.
B. HPV is continually shed from the surface, and reinfection may occur.

Assessment
A. Warts are found in areas subject to trauma during sexual activity: penis, urethra, perianal area, anal canal, vulva, cervix, vaginal canal.
B. Diagnosed by observation and biopsy of lesions.
C. The cervix and anal canal may be involved if there are lesions on the vaginal or anal area.
D. Lesions are raised, skin-toned, damp, cauliflower-like growths.
E. Genital itching.
F. May cause nonmenstrual bleeding after intercourse.

Nursing Interventions
A. Education regarding transmission.
B. Close follow-up with Pap smears in women; genital warts are associated with an increased incidence of cervical cancer.
C. Increased incidence of squamous cell cancer of penis in men.
D. Podophyllin, applied topically once or twice a week, and antimitotic preparations are the most common treatments.
E. Transmission is by direct contact with a person who has lesions present.
F. Vaccination with Gardasil may reduce or prevent genital warts.

Cervical Cancer
Assessment
A. Risk factors/etiologic.
   1. Multiple sex partners.
   2. First intercourse at early age.
   3. History of STDs, HSV-2.
   4. Genital warts (HPV-positive), abnormal Pap smears.
B. Clinical manifestations.
   1. Clients are asymptomatic until late in disease state.
   2. Thin and watery drainage that becomes dark and foul smelling as the disease progresses.
   3. Abnormal vaginal bleeding or discharge.
   4. Low back pain.
   5. Painful sexual intercourse.
C. Diagnostics.
   1. Pap smear.
      a. Initial Pap smear at age 21 or after first sexual intercourse.
      b. Pap smears are continued after menopause and hysterectomy.
   2. Classification of Pap test results: Bethesda Classification System (2001) replaced older system, which had 5 classes.
      a. The adequacy is assessed as satisfactory or unsatisfactory.
      b. The findings are described as negative or having epithelial cell abnormalities (either squamous cell or glandular cell).

Nursing Priority
If cancer of the cervix is identified before it becomes invasive (or in the in situ stage), there is virtually a 100% cure rate.

3. Cervical biopsy (office procedure)—after the test, the client should:
   a. Avoid strenuous activity for 24 hours.
   b. Leave vaginal packing in for about 24 hours.
   c. Abstain from sexual intercourse for approximately 24 hours.
   d. Avoid using tampons and douching.

Treatment
A. Surgical intervention.
   2. As treatment for cervical cancer, the following procedures may be done:
a. Vaginal hysterectomy: removal of the uterus; fallopian tubes and ovaries remain intact.
b. Hysterectomy: total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH-BSO); includes removal of fallopian tubes and ovaries.
c. Radical hysterectomy: a panhysterectomy plus a partial vaginectomy and removal of lymph nodes.

3. Radiation therapy, either internal (radium implant) or external for invasive cancer.

Nursing Interventions

Goal: To provide health teaching to help clients detect premalignant cervical dysplasia.
A. Warning signs of cancer.
B. Importance of yearly Pap smears.
C. Encourage verbalization of feelings related to the surgery and diagnosis of cancer.

Goal: To provide preoperative and postoperative teaching in preparation for a total abdominal hysterectomy.
A. General preoperative care.
B. After surgery, assess for complications, such as backache or decreased urine output, because these symptoms can indicate accidental ligation of the ureter.
C. Urinary retention may occur as a result of bladder atony and edema; explain to client the necessity for a urinary retention catheter.
D. Early ambulation is encouraged to prevent postoperative thrombophlebitis.
E. Determine whether hormone replacement therapy will be used and provide appropriate teaching.
F. If dyspareunia occurs, client should contact her doctor.

Goal: To provide psychologic support.
A. Encourage verbalization of concerns related to body image.
B. Teach that sexual activity should be avoided until checkup to determine wound healing (about 4 to 6 weeks).
C. Client should avoid heavy lifting.
D. Client who has had a pelvic exoneration will have many concerns regarding sexual function, because the vagina will be lost. Menopause will occur, and there may be a urinary or bowel diversion to the abdominal wall (an ileal conduit or colostomy).

Breast Carcinoma

Assessment
A. Risk factors/etiology.
   1. Leading cause of cancer death in women ages 14 to 54 years.
   2. Family history of breast cancer; however, 85% of women with breast cancer have a negative family history.
   3. Nulliparity or parity after the age of 30 years.
   4. Early menses, late menopause; removal of the ovaries before the age of 35 years significantly decreases the risk for breast cancer.
   5. The incidence of recurrence of breast cancer is significant.

B. Clinical manifestations.
   1. Asymmetry of the breasts.
   2. Skin dimpling, flattening, and nipple deviation are suggestive of a lesion.
   3. Skin coloring and thickening, large pores, sometimes called peau d’orange (orange peel appearance).
   4. Changes in the nipple; discharge from the nipple.
   5. Mass is painless, nontender, hard, irregular in shape, and nonmobile.
   6. Majority of malignant lesions are found in the upper outer quadrant of the breast (tail of Spence).

C. Diagnostics.
   1. Mammography; ultrasound.
   2. Breast biopsy.

D. Complications:
   1. Metastases via the lymphatic system to bone, lungs, brain, and liver.
   2. Postmastectomy pain syndrome: pain persisting past 3 months.
   3. Sentinel lymph node dissection (SLND).

Treatment
A. Surgical.
   1. Modified radical mastectomy (most common): removal of all breast tissue and axillary lymph nodes; the pectoralis major muscle remains intact; preservation of the muscle helps to prevent the arm edema frequently associated with mastectomy.
   2. Local excision (lumpectomy): may be done to stage the malignancy and determine appropriate chemotherapy/radiation therapy, but the breast is preserved.
   3. Radical mastectomy (less common): removal of all of the breast tissue, the pectoral muscles, and the axillary lymph nodes of the surrounding tissue.
   4. Breast reconstruction: may be delayed until after radiation therapy is completed or may be done at the time of the mastectomy.

B. Radiation: combined with surgery and chemotherapy.
C. Hormonal therapy: breast cancers that are classified as “estrogen receptors” are less invasive tumors and respond to changes in estrogens; hormone therapy is being used in conjunction with surgical intervention to prevent/decrease recurrence.

D. Chemotherapy: a combination of drugs will be used to treat the malignancy.
Nursing Interventions

Goal: To promote early detection of breast cancer through mammography, clinical breast exam, and breast self-examination (BSE).
A. Screening mammography should begin at age 40.
B. Teach client how to perform breast self-examination. (see Box 22-3).
C. Clinical breast exam should begin with clients in their 20s and 30s, and every year for asymptomatic woman age 40 or older.
D. American Cancer Society recommends a yearly MRI and a mammography for women age 30 or older who have a family history of breast cancer.

Goal: To prepare the client physiologically and psychologically for surgery (normal preoperative and postoperative care; see Chapter 3).
A. Assist woman to decrease emotional stress and anxiety; encourage use of spiritual and social resources.
B. Provide emotional support; encourage verbalization.
C. Anticipate concerns related to sexuality and fear of rejection by husband or sex partner after the mastectomy (see the section on Body Image in Chapter 9).

ALERT Plan measures to assist client to cope with anxiety; assess client’s response to illness; identify coping mechanisms of client and family.

D. Determine whether any plans for reconstructive surgery have been discussed.

Goal: To recognize and prevent postoperative complications (Figure 22-5).

Box 22-3  BREAST SELF-EXAMINATION

- Evaluate risk factors; educate woman about increased risk factors.
- Woman should perform breast self-examination (BSE) on a regular basis; once a month about a week after her period or at the same time each month if the woman has no periods.
- It is important for the BSE to be done on a regular basis; this makes it easier to detect abnormalities when they occur.
- The BSE should include the following three steps:
  1. Step 1: Inspection before a mirror to determine asymmetry or changes in size. Breast should be evaluated from three positions: with the arms relaxed at the sides; with the arms over the head pressing on the back of the head; with the hands on the hips, palms pressing inward to flex the chest muscles. Look for dimpling, differences in sizes of the breast, ulcerations, nipple retraction, and increased vascularity.
  2. Step 2: Breast should be palpated while lying down; flatten the right breast by placing a pillow under the right shoulder. With the fingers flat, use the sensitive pads of the middle three fingers of the left hand. Feel for lumps or changes using a rubbing motion. Press firmly enough to feel the different breast tissues. Examine the entire breast from the collarbone to area on which the base of your bra rests and the axillary area. Pay particular attention to the upper outer quadrant of each breast. Gently squeeze the nipple to determine presence of any drainage.
  3. Step 3: In the shower or bath examine your breasts; hands glide easier over wet skin.
- Women older than 40 years should have a mammogram every year; women with increased risk factors should maintain regular follow-up with a physician.
- The American Cancer Society provides excellent teaching opportunities for nurses, as well as extensive information for women regarding early detection of breast cancer and rehabilitation after a mastectomy.

ALERT Questions regarding teaching women about breast cancer, risk factors, BSE, and preventive health care are common on the exam.
Home Care

**Goal:** To promote the client’s return to homeostasis and to help her understand implications of modified lifestyle; to identify measures to maintain health.

A. Discuss symptoms of recurrence and importance of making regular visits to the physician to monitor recovery and to detect changes.

B. Promote a positive self-image and reintegration with family and loved ones.

C. Discuss with client plans for obtaining a breast prosthesis.

D. Encourage the woman to participate in the Reach to Recovery program through the American Cancer Society. Check with the physician to see whether representatives may visit with the client before the surgery.

E. Compression arm sleeves used to minimize swelling from lymphedema.

**ALERT** Identify factors interfering with wound healing. The arm on the affected side will be at increased risk for developing problems of edema and infection. The arm should be protected throughout rehabilitation and during activities of daily living for an indefinite period of time.

**FIGURE 22-5** Postmastectomy nursing care. (From Zerwekh J, Claborn J: Memory notebook of nursing, vol 1, ed 4, Ingram, Texas, 2008, Nursing Education Consultants.)
### MEDICATIONS USED IN REPRODUCTIVE SYSTEM DISORDERS

#### Benign prostatic hyperplasia
Medications that decrease the size of the prostate, therefore decreasing pressure on the urinary tract in clients with BPH or by promoting smooth muscle relaxation (alpha adrenergic blockers).

<table>
<thead>
<tr>
<th>Medications</th>
<th>Side Effects</th>
<th>Nursing Implications</th>
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<tr>
<td>Alpha Adrenergic Blocker (Nonselective)</td>
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</table>
| **Doxazosin (Cardura):** PO | Dizziness, fatigue, orthostatic hypotension, dyspnea, headache | 1. Advise client of possible problems of decreased blood pressure and orthostatic hypotension.  
2. Prostatic cancer should be ruled out before medications are started.  
3. Medication should decrease problems of urination associated with BPH.  
4. Monitor blood pressure closely if taking antihypertensive medications. |
| **Tamsulosin (Flomax):** PO |                                           |                                                                                      |
| **Terazosin (Hytrin):** PO |                                           |                                                                                      |
| **Finasteride (Proscar):** PO | Erectile dysfunction, decreased libido | 1. Client should take contraceptive precautions or not have sexual intercourse with women who could become pregnant.  
2. Women who may be or are pregnant should not handle the tablets. |

#### Antifungal/Protozoal Medications
Used to treat vaginal fungal infections.

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<tr>
<th>Medications</th>
<th>Side Effects</th>
<th>Nursing Implications</th>
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</table>
| **Clotrimazole (Gyn-Lotrimin):** intravaginally (OTC) | Nausea, vomiting, headache, vaginal irritation | 1. Creams are not recommended to be used with tampons or diaphragms.  
2. Not recommended for use during pregnancy or lactation.  
3. **Flagyl** is used to treat trichomoniasis; instruct client to avoid alcohol because it can lead to serious side effects of throbber headaches, nausea, excessive vomiting, hyperventilation, and tachycardia.  
4. Suppositories or applicators are used to place medication in the vagina.  
5. If client does not see improvement within 3 days, she should return to her health care provider.  
6. **Diflucan** can be given as a single dose for vaginal candidiasis. |
| **Miconazole (Monistat 3):** intravaginally |                                           |                                                                                      |
| **Fluconazole (Diflucan):** PO |                                           |                                                                                      |
| **Terconazole (Terazol):** intravaginally |                                           |                                                                                      |
| **Metronidazole (Flagyl):** PO |                                           |                                                                                      |

#### Erectile Dysfunction Medications
Promote an increase in arterial pressure and inflow of blood into the penis and reduce the venous outflow causing engorgement and producing an erection.

<table>
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<tr>
<th>Medications</th>
<th>Side Effects</th>
<th>Nursing Implications</th>
</tr>
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</table>
| **Sildenafil (Viagra):** PO | Hypotension can be a serious SE | 1. Should not be taken concurrently with nitrates.  
2. Alpha blockers (used for treatment of BPH) are contraindicated in the client taking tadalafil and vardenafil, should be used with caution in client taking **Viagra**.  
3. Vardenafil can cause prolonged QT interval on ECG, should not be used in combination with antidysrhythmic medications.  
4. Primary differences in the medications are the onset and duration of action.  
5. Priapism, painful erection, or erection lasting over 4 hours may require medical intervention to prevent penile damage. |
| **Vardenafil (Levitra):** PO | Headache, flushing, visual changes |                                                                                      |
| **Tadalafil (Cialis):** PO |                                           |                                                                                      |

*BPH, Benign prostatic hypertrophy; IV, intravenous; OTC, over the counter; PO, by mouth (oral).*
## Appendix 22-2  HORMONE REPLACEMENT

### MEDICATIONS

| Conjugated estrogen (Premarin, Ortho-est, Prempro): | PO, intravaginally |
| Micronized estradiol (Estrace): | PO, IM, intravaginally |
| Estradiol (Estraderm, Ortho Tri-Cyclen Lo): | transdermal patches |
| Medroxyprogesterone acetate (Provera, Depo-Provera): | PO, IM |

### SIDE EFFECTS

| Conjugated estrogen | Nausea, vomiting, breakthrough bleeding, weight gain, swollen tender breasts, increased blood pressure |
| Micronized estradiol | Increased risk for uterine cancer |
| Estradiol | |
| Medroxyprogesterone acetate | Menses may become more irregular |

### NURSING IMPLICATIONS

1. Should not be given unopposed to women who have a uterus. Estrogen compounds should be given with progesterone combinations.
2. Important for menopausal women to continue with 1200 to 1500 mg/day calcium intake and weight-bearing exercises along with estrogen replacement to prevent osteoporosis.
3. Should not be used by women who have known or suspected cancer of the breast, undiagnosed vaginal bleeding, or possible pregnancy.
4. Used with precaution—or not at all—in women with clotting disorders or history of DVT/PE.
5. Report any unusual bleeding to primary care provider.
6. Research data changed the practice of treating perimenopausal women's symptoms with HRT. It is their decision to take it or not, but use should be short-term and lowest effective dose with risks outlined.
7. Use: Replacement hormone to treat symptoms associated with menopause—hot flashes, atopic vaginitis (local vaginal application of low-dose estrogen—Vagifem) prevention of postmenopausal osteoporosis.

1. Use: Provera—for menopausal women who still have a uterus, significantly decreased risk for uterine cancer when used with estrogen therapy. Depo-Provera—birth control injection given every 3 months.
2. Women should continue with increased calcium intake and weight-bearing exercises to prevent osteoporosis; should have yearly Pap smears, mammograms, and cholesterol series.

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IM, Intramuscular; IV, intravenous; PO, by mouth (oral).
Study Questions  Reproductive System

1. A client’s Pap test reveals epithelial cells characteristic of adenocarcinoma of the cervix. The nurse understands that which of the following is a major risk factor for cervical cancer?
   1. Long-term use of oral contraceptives
   2. Recurrent outbreaks of human papilloma virus (HPV)
   3. Grand multiparity with history of preterm labor
   4. Alternative therapy for treatment of menopausal symptoms

2. A client has been diagnosed with genital herpes. The nurse would explain to the client that she is most contagious at what stage?
   1. When vesicles rupture and release transudate
   2. When superficial, painful ulcers appear
   3. When yellow vaginal drainage is present
   4. When pustules become inflamed and erythematous

3. What is important to include in the discharge teaching plan for a 38-year-old client who has had a vaginal hysterectomy?
   1. Do not douche with any type of solution.
   2. Refrain from sexual intercourse for 2 months.
   3. Take hormone replacement therapy.
   4. Anticipate heavy vaginal bleeding.

4. During a well-woman physical examination, a young woman is diagnosed with a primary genital herpes lesion. When completing the client’s history, the nurse would anticipate the client to report:
   1. Anuria
   2. Pruritus
   3. Leukorrhea
   4. Dyspareunia

5. A client had a left modified radical mastectomy 48 hours ago. What would be important for the nurse to include in a discharge teaching plan for this client? Select all that apply.
   _____ 1. Massage wound site with essential oils once incision has healed.
   _____ 2. Avoid needle-sticks in the left arm.
   _____ 3. Begin active exercises, such as pendulum arm swings, immediately.
   _____ 4. Avoid abduction and external rotation of the upper arm.
   _____ 5. Elevate arm on pillows to prevent edema.
   _____ 6. Take blood pressure readings from the right arm.

6. What is an important nursing action when assisting the doctor with a pelvic examination?
   1. Instruct the client to douche before the exam.
   2. Explain to the client that she will not feel any pain.
   3. Have the client empty her bladder before the examination begins.
   4. Lubricate the speculum well before handing it to the doctor.

7. A teenage boy comes to the office complaining of intense burning while urinating and gray-green discharge coming from his penis. The nurse recognizes these as symptoms of what problem?
   1. Herpes (HSV-2) with open lesions
   2. Secondary stage syphilis
   3. Urinary tract infection
   4. Gonorrhea

8. After examining a painless sore on the penile shaft, the doctor asks the nurse to order a fluorescent treponemal antibody absorption (FTA-ABS) test. The nurse knows that the purpose of this test is to diagnose what condition?
   1. Herpes simplex virus type 2 (HSV-2)
   2. Trichomoniasis
   3. Cytomegalovirus
   4. Syphilis

9. The night shift nurse notes at the end of her shift that a client who had a mastectomy has a total of 90 mL of serosanguineous drainage after a 24-hour period. What is the best nursing action?
   1. Report amount of drainage to the physician.
   2. Start frequent blood pressure checks and observe for hemorrhage.
   3. Continue to monitor the drainage.
   4. Reinforce packing at the wound site.

10. The nurse is caring for a client who has had a mastectomy. What is important nursing care regarding the positioning of the affected arm?
    1. Hold the arm close against the side of her body.
    2. Secure the arm below the level of the heart.
    3. Wrap the arm in an Ace bandage and keep it below the heart.
    4. Elevate arm above heart level.

11. A client is admitted because of benign prostatic hyper trophy and is scheduled to have a transurethral prostate resection. What assessment data would indicate to the nurse that a complication is developing?
    1. The client has difficulty emptying his bladder.
    2. Client states he feels like he cannot empty his bladder.
    3. The client complains of frequency and nocturia.
    4. Increasing complaints of flank pain and hematuria.

12. The nurse is discussing the importance of breast self-examination with a client who is being discharged after a vaginal hysterectomy. What is important information for the nurse to give this client?
    1. Perform breast self-examination 1 week after her normal period.
    2. Examine her breasts on a regular basis about the same time every month.
    3. Breasts should be palpated while in the sitting position.
    4. Use the tips of the fingers to palpate deeply into the breast tissue.
13. The nurse is discussing testicular self-examination with a male client. What information is important for the nurse to include in the discussion?
   1. The best time to perform the examination is 24 hours after sexual intercourse.
   2. The examination should be conducted at the same time each month.
   3. The client should perform this self-examination every 3 to 4 months.
   4. When the scrotum is pulled up tight against the body, the testes are easier to palpate.

14. The nurse is assessing a client who had a transurethral resection of the prostate (TURP) 6 hours ago. He has a urinary catheter with continuous bladder irrigation running. What nursing observations would indicate a complication is developing?
   1. Catheter drainage of 50 mL in the past hour and increase in suprapubic pain
   2. Dark, grossly bloody catheter drainage with pieces of tissue
   3. Client states that he feels like he needs to void
   4. Moderate amount of bloody discharge from around the catheter

15. A client is diagnosed with epididymitis related to bladder outlet obstruction. The nurse teaches which intervention to assist the client in recovery?
   1. Walk briskly at least 30 minutes every day.
   2. Limit oral intake to minimize nausea and vomiting.
   3. Apply scrotal support to relieve edema and discomfort.
   4. Use warm baths and compresses during acute inflammation.

16. A sexually active 17-year-old female is diagnosed with trichomoniasis through vaginal discharge analysis. The nurse explains which pharmacologic intervention to minimize symptoms and the risk for recurrence?
   1. Return to clinic each week for intramuscular injection of penicillin.
   2. Perform a daily vaginal douche with a weak iodine solution.
   3. Oral administration of metronidazole three times a day to client and partner.
   4. Application of trichloroacetic acid to lesions daily for 6 to 8 weeks.

17. A client is scheduled for an abdominal hysterectomy. Preoperative teaching includes which of the following?
   1. A nasogastric tube will be left in to control vomiting after surgery.
   2. A douche and enema may be done the evening before surgery.
   3. There will be a moderate amount of bloody vaginal drainage after surgery.
   4. Ambulation will be delayed for 48 hours because of the extensive nature of the procedure.

18. A woman has experienced an incomplete abortion. She is scheduled for a dilation and curettage (D&C). What is the purpose of this procedure?
   1. To protect the uterus and the ovaries for future pregnancies
   2. To provide a healthier uterine environment for future pregnancies
   3. To provide reinforcement for an incompetent cervix
   4. To scrape the uterine walls and remove the uterine contents

19. The nurse is teaching a client with a pelvic inflammatory disease. The nurse instructs the client to sleep with her head elevated about 45 degrees. What is the rationale behind instructing the client to sleep in this position?
   1. Assists to localize drainage in the lower abdomen
   2. Decreases abdominal muscle tension
   3. Makes coughing and deep breathing more effective
   4. Prevents scarring of the fallopian tubes

20. A young woman comes into the emergency department with menorrhagia. What is the priority concern for the nurse caring for this client?
   1. The chronic bleeding will cause anemia.
   2. The client is at a high risk for development of an infection.
   3. The woman may be pregnant and is aborting the fetus.
   4. The increased bleeding will promote later problems with infertility.

21. What is the immediate posthysterectomy priority nursing action?
   1. Assist with sitz baths three times daily.
   2. Provide a high-protein diet.
   3. Teach the client exercises to strengthen the abdomen.
   4. Observe the client for decreased urine output.

Answers and rationales to these questions are in the section at the end of the book titled Chapter Study Questions: Answers and Rationales.