CHAPTER 50 Nursing Care of Men with Reproductive System and Breast Disorders

LEARNING OUTCOMES

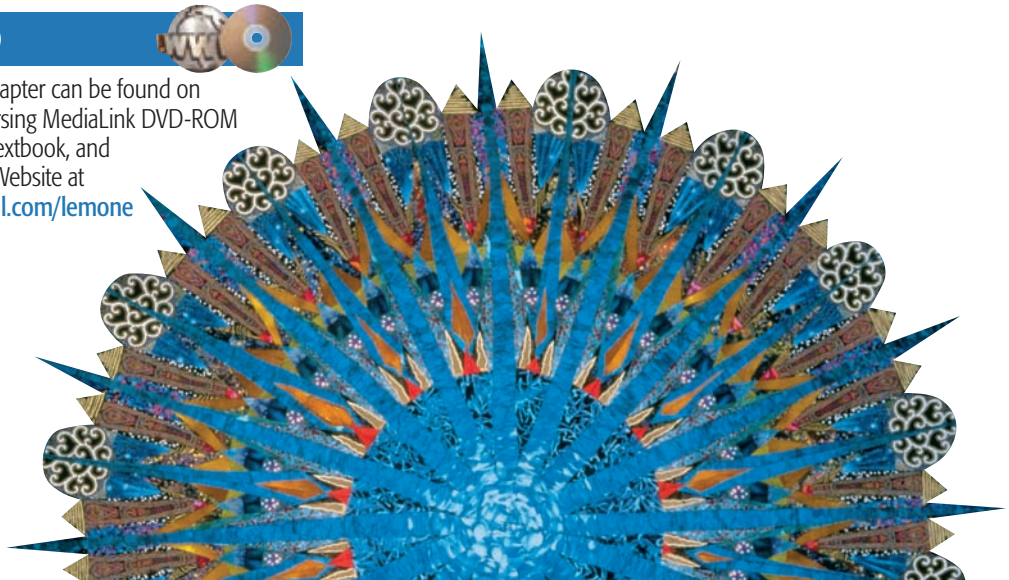
- Explain the pathophysiology, manifestations, complications, interdisciplinary care, and nursing care of disorders of the male reproductive system, including disorders of sexual function, the penis, the testes and scrotum, the prostate gland, and the breast.
- Compare and contrast the risk factors for cancer of the penis, testes, and prostate gland.
- Discuss the purposes, nursing implications, and health education for medications and treatments used to treat disorders of sexual function, the penis, the testes and scrotum, the prostate gland, and the breast.
- Describe the various surgical procedures used to treat disorders of the male reproductive system.

CLINICAL COMPETENCIES

- Assess functional health status of men with reproductive system and breast disorders and monitor, document, and report abnormal manifestations.
- Use evidence-based research to provide appropriate discharge teaching to men having a radical prostatectomy.
- Determine priority nursing diagnoses, based on assessed data, to select and implement individualized nursing interventions for men with disorders of the reproductive system and breast.
- Administer, or teach clients how to administer, topical, oral, and injectable medications used to treat disorders of the male reproductive system knowledgeably and safely.
- Provide skilled care to men having prostate surgery.
- Revise plan of care as needed to provide effective interventions to promote, maintain, or restore functional health status to men with disorders of the reproductive system and breast.

MEDIALINK

Resources for this chapter can be found on the Prentice Hall Nursing MediaLink DVD-ROM accompanying this textbook, and on the Companion Website at http://www.prenhall.com/lemone



KEY TERMS

benign prostatic hyperplasia (BPH), *1777*
epididymitis, *1773*
erectile dysfunction (ED), *1768*
gynecomastia, *1789*
hydrocele, *1772*
impotence, *1768*
libido, *1768*
orchitis, *1774*
phimosis, *1771*
priapism, *1771*
prostatitis, *1776*
retrograde ejaculation, *1771*
spermatocele, *1773*
testicular torsion, *1774*
varicocele, *1773*

Men are subject to disorders of the penis, scrotum and testes, prostate gland, and breast. These disorders may be inflammatory, structural, benign, or malignant. Young men are at increased risk for testicular cancer. As men age, both benign and malignant conditions of the prostate gland become common. Many of the disorders pose significant risk to the man's fertility and sexual and urinary function, and some are life threatening. This chapter discusses disorders of the male reproductive system, including disorders of sexual expression and the male breast. Because many of the treatments and disorders of the male reproductive system have the potential to affect erection and ejaculation, these problems are discussed first.

DISORDERS OF MALE SEXUAL FUNCTION

THE MAN WITH ERECTILE DYSFUNCTION

Erectile dysfunction (ED) is the inability of the male to attain and maintain an erection sufficient to permit satisfactory sexual intercourse. **Impotence**, a term often used synonymously with erectile dysfunction, may involve a total inability to achieve erection, an inconsistent ability to achieve erection, or the ability to sustain only brief erections. ED has many possible causes (Table 50–1), and may or may not be associated with a loss of **libido** (sexual desire).

The incidence of ED is difficult to estimate because many affected men may not report the disorder. An estimated 15 to 30 million men in the United States have ED, and most are older

TABLE 50–1 **Causes of Erectile Dysfunction**

MAJOR PATHOLOGIC CAUSES		MAJOR LATROGENIC CAUSES	
		Medications	**Procedures and Infections**
Neurogenic	*Arterial*	*Antihypertensives*	*Surgery*
Spinal cord injury	Atherosclerosis	Hydrochlorothiazide	Coronary artery bypass
Stroke	Hypertension	Spironolactone	Pelvic lymphadenectomy
Parkinson's disease	Aortic aneurysm	Methyldopa	Radical prostatectomy
Multiple sclerosis	Sickle cell anemia	Clonidine	Radical cystectomy
Endocrinologic	*Mechanical*	Prazosin	Abdominal perineal resection
Diabetes mellitus	Decreased penile distensibility	Propranolol	Sympathectomy
Hypogonadism	Congenital disorders	Reserpine	Aortic aneurysm repair
Hypothyroidism	Morbid obesity	*Psychotropic Agents*	Transplant surgeries
Inflammatory	Hydrocele	Phenothiazines	*Other*
Prostatitis	Hip or pelvic fractures	Butyrophenones	Severe nosocomial infection
Cystitis	*Psychogenic*	Tricyclic antidepressants	Radiation therapy to pelvis
Activity Intolerance	Depression	MAO inhibitors	
Pulmonary problems	Stress	Diazepum	
Anemias	Fatigue	Chlorodiazepoxide	
Myocardial infarction	Fear of failure	*Endocrinologic Agents*	
Congestive heart failure	*Compulsive Food Disorders*	LHRH agonists	
Hepatic diseases	Compulsive overeating	Estrogen compounds	
Renal failure	Anorexia nervosa	Progesterone	
Substance Dependency	Bulimia	*Other*	
Alcohol		Antiparkinsonian agents	
Marijuana		Anticholinergic agents	
Narcotics		Immunosuppressive agents	
Sedatives		Antihistamines	
Tobacco			

than age 65 (National Kidney and Urologic Disease Information Clearinghouse [NKUDIC], 2003a). The incidence of the problem increases with age. Most problems with erection are the result of a disease, injury, or chemical substance (such as prescribed medications, alcohol, nicotine, cocaine, or marijuana) that decreases blood flow in the penis (Cleveland Clinic, 2004). Because this is a problem primarily of aging men, the discussion of pathophysiology focuses on this age group.

Pathophysiology

Age-related changes in sexual function involve cellular and tissue changes in the penis, decreased sensory activity, hypogonadism, and the effects of chronic illness. In the penis, a change from elastic collagen to a more rigid collagen results in decreased distensibility (a less rigid erection). This, in turn, interferes with the veno-occlusive mechanism, which prevents blood from "leaking" out of the penis into the general vasculature prematurely. Problems with this mechanism result in incomplete erections. Vibrotactile sensation over the skin of the penis declines with age. This decline may explain why some older men require longer stimulation to achieve an erection. Hypogonadism, common in aging men, results in decreased testosterone levels. There may be a relationship between lower androgen levels and erectile function.

Many illnesses affect erectile function. Damage to arteries, smooth muscles, and fibrous tissues are the most common causes of impotence. Diseases such as diabetes, kidney disease, chronic alcoholism, atherosclerosis, and vascular disease are responsible for organic ED. Innervation and blood flow to the penis may be damaged during surgery, prostate surgery in particular. Given the effects of aging on the vasculature of the penis, the increased incidence of chronic illness, and the multiple medications and treatments required to manage those illnesses, it is not surprising that many older men have problems with ED.

INTERDISCIPLINARY CARE

The management of men with ED is growing in importance and scale, because the population as a whole is aging, so the incidence is increasing proportionately. Another factor is the gradual change in the willingness of men and their partners to discuss sexual concerns. Although sexuality is still a very sensitive and private area for most people, the knowledge that help is available is causing men to seek answers. Many older men are coming to believe that loss of erectile function is not an inevitable part of aging.

Diagnosis

The diagnostic tests that may be ordered include blood studies, penile monitoring, and penile blood flow.

Blood chemistry, testosterone, prolactin, thyroxin, and prostate specific antigen (PSA) levels are measured to identify metabolic and endocrine problems that may be causing the dysfunction. Nocturnal penile tumescence and rigidity (NPTR) monitoring helps differentiate between psychogenic and organic causes. These tests can be performed in a sleep laboratory, although home testing with portable devices is an alternative. The number and quality of erections occurring during REM sleep can be determined. Cavernosometry and cavernosography of the corpora are used to evaluate arterial inflow and venous outflow of blood in the penis.

Medications

ED can be treated with medications taken orally, injected directly into the penis, or inserted into the urethra at the tip of the penis.

- *Oral medications:* The oral medications used to treat ED include sildenafil citrate (Viagra), vardenafil hydrochloride (Levitra), or tadalafil (Cialis). Viagra and Levitra are taken an hour before sexual activity and enhance the effects of nitrous oxide to facilitate relaxation of the smooth muscle in the penis during sexual stimulation to increase blood flow. Both drugs should be taken no more than once a day, and should not be taken by men who are also taking nitrate-based drugs (for health problems) or alpha-blockers (used to treat hypertension and prostate enlargement). Cialis is a selective phosphodiesterase type 5 inhibitor that allows smooth muscle relaxation to facilitate inflow of blood into the penis. Its action lasts for 36 hours, but an erection only occurs with sexual stimulation. Cialis should not be taken if the man is also taking nitrates, alpha-blockers, erythromycin or rifampicin (antibiotics), ketoconazole or itraconazole (antifungals), or protease inhibitors (for HIV).
- *Injectable medications:* Hormone replacement therapy with testosterone injections (200 mg IM every 3 weeks) or topical patches may be used for men with documented androgen deficiency and who do not have prostate cancer. Injectable medications, including papaverine and prostaglandin E injections, may be used. When injected directly into the penis, papaverine relaxes the arterioles and smooth muscles of the cavernosum, thus inducing tumescence (swelling). An erection usually develops that lasts from 30 minutes to 4 hours. Prostaglandin E functions much as papaverine does, but has fewer side effects. One problem with this treatment is its mode of delivery. There is a high attrition rate, and clients report dissatisfaction with lack of spontaneity, loss of interest in sex, physical limitations, cost, and, occasionally, pain. Alprostadil (Caverject) is another injectable medication that may be used to treat ED. It may be injected into the penis or placed in the urethra as a minisuppository.

Mechanical Devices

A frequently prescribed mechanical device for ED is the vacuum constriction device (VCD). The VCD draws blood into the penis with a vacuum, trapping it there with a constricting band at the base of the penis. After the device is removed for intercourse, a single small band, often called an O-ring, is left at the base of the penis to maintain the erection. If the man can attain an erection but cannot maintain it, then an O-ring alone can be used.

Surgery

Surgical treatment for ED involves either revascularization procedures or implantation of prosthetic devices. Venous or arterial procedures are generally not successful. The result is often

temporary, because the underlying cause of the vascular insufficiency is usually not corrected. Implantation of penile prostheses is now common (Figure 50–1 ■). Men are generally satisfied with their prostheses, and they rank the inflatable type highest. Partners are also more likely to report satisfaction with the penile implant, although not to the same degree as clients. Some partners report that the implanted penis is harder than a normal erect penis and therefore causes pain. Also, the man can have intercourse for a prolonged period of time, and some partners do not find prolonged penetration enjoyable. Client and partner teaching is mandatory. Counseling by a sex therapist may be needed to facilitate adaptation to the implant.

NURSING CARE

Nurses in any healthcare setting may encounter men with ED, either through routine examinations or through careful assessment of clients' conditions and treatments that may incidentally cause ED. Nurses employed in clinics, operating rooms, and surgical units with urologic services commonly encounter men being treated for ED. Nurses in a variety of settings, including long-term care, encounter men who have had surgical interventions, such as penile implants.

Nursing Diagnoses and Interventions

Because nurses often complete a client's health history, they are most likely to discover problems of ED (see the Functional Health Pattern Interview guide in Chapter 49 ∞ for appropriate questions to elicit information). Once a problem is known, nurses are involved in giving information, providing emotional support, and referring clients to physicians or counselors. Although there are many possible nursing diagnoses, this section focuses on nursing care related to sexual dysfunction and self-esteem.

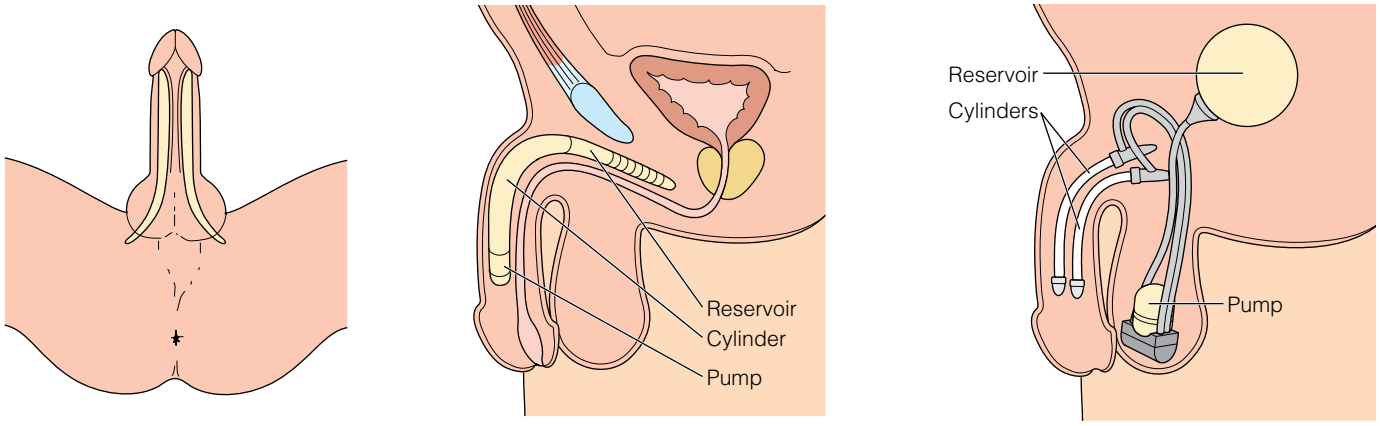
Sexual Dysfunction

Many men who lose erectile function are not aware of the cause. Often the man blames the loss on unrelated factors, such as age, a medication for an illness, a dangerous illness, or his sexual partner. Not knowing causes anxiety, which may disrupt the relationship with his partner or lead him to discontinue an important medication.

- Assess for risk factors for ED. Be especially alert to men who have recently begun medications or had recent surgeries that could cause ED. *Awareness of risk factors helps the nurse to prioritize care, although nurses must remember that almost all aging clients have at least one risk factor for ED.*
- Assess for sexual dysfunction. Men have shown increasing willingness to discuss sexual concerns and expect nurses to be aware of the physiologic effects of their disease and side effects of treatment on all aspects of their health. *If a problem exists, information obtained in a sexual assessment guides the nurse in deciding if the next step should be client teaching, referral, or both.*
- Perform a detailed assessment of current sexual practices. *It is essential for healthcare providers to understand the client and partner's sexual pattern in order to provide appropriate, individualized care.*
- Discuss previous methods of coping with ED. *Awareness of coping strategies can provide insight for the nurse and guide teaching.*
- Provide information about treatment options. *The man needs to know the details of the intervention, the chances for success, and the possible complications.*

PRACTICE ALERT

Many men will not volunteer information about sexual function unless asked, but then are open about concerns and appreciate being asked.



A Semirigid **B** Self-contained **C** Inflatable

Figure 50–1 ■ Types of penile implants. *A,* With semirigid rods implanted in the corpora cavernosa, the penis is always in a state of semi-erection, which may not be acceptable to the man. *B,* With a self-contained penile implant, the penis remains flaccid until the man compresses a pump at the head of the penis, which transfers fluid from a reservoir to a cylinder within the penis to achieve an erection. The man presses a release valve to return the fluid to the reservoir. *C,* With an inflatable penile implant, the penis remains flaccid until the man compresses a pump in the scrotum, which transfers fluid from an abdominal reservoir to cylinders in the corpora cavernosa to achieve an erection. Pressing a release valve returns the fluid to the reservoir.

Situational Low Self-Esteem

The man with ED often believes himself to be "less than a man." In addition, the insertion of a penile implant with a semirigid prosthesis may result in disturbances in body image related to changes in sexual activity as well as the appearance and embarrassment of a permanent semi-erection.

- Collect data during the health history, in a nonjudgmental manner, about physiologic function, other chronic illnesses, and feelings about sexual inadequacy. *This information is necessary to establish the database for individualized interventions.*
- If the man has had a penile implant, teach him and his partner how to use the pump, including how to inflate and deflate the device. Suggest he practice inflation and deflation during the postoperative period. Suggest wearing snug-fitting underwear with the penis placed in an upright position on the abdomen and loose trousers. Provide information about length of healing, and that sexual activity may resume within 6 to 8 weeks following surgery. *Practice using the pump will maintain the pump position and promote tissue growth around the implant. The type of clothing worn can improve the ability to conceal a semirigid prosthesis and decrease embarrassment. Recovery from surgery is necessary before resuming sexual activity.*

Community-Based Care

Many nurses find that men with ED and their partners have lived in isolation with the problem for many years. The partner may even be unaware of the problem. The partner may believe that the man is seeing someone else or that the man has lost his attraction to the partner. The man may have kept his problem a secret because an intense feeling of shame makes him unable to admit that he cannot perform sexually. Many men greet the information about the high incidence of ED with a sense of relief that they are not alone in having this problem. All men and their partners need to be aware of support services available to them. Referral sources include:

- Sexual Function Health Council
- American Urological Association
- American Association of Sex Educators, Counselors, and Therapists.

THE MAN WITH EJACULATORY DYSFUNCTION

There are many types of ejaculatory dysfunction. **Retrograde ejaculation** (seminal fluid discharged into the bladder) may develop in aging men but is usually related to treatment of prostate conditions or testicular cancer. *Premature ejaculation* is usually psychogenic in origin, although diabetes can cause the problem as well. *Delayed ejaculation* can be related to aging changes, such as decreased vibrotactile sensation over the penis or decreased libido secondary to hypogonadism. Delayed ejaculation and inability to ejaculate at all may be caused by certain medications, such as antihypertensives, antidepressants, anxiolytics, and narcotics.

Among these problems, premature ejaculation has proved most responsive to medical management. The man can experiment with ways (such as wearing condoms) to decrease sensitivity. Using relaxation and guided imagery can delay orgasm. Mechanical devices, such as constrictive rings around the base of the penis, can help the man delay ejaculation and sustain an erection.

Nursing care focuses on assessment of the problem and teaching for all types of ejaculatory dysfunction. The man's partner can be taught how to avoid excessive stimulation that would result in premature ejaculation. If the problem persists, the man should be referred to a specialist.

DISORDERS OF THE PENIS

THE MAN WITH PHIMOSIS OR PRIAPISM

Two less common disorders of the penis are phimosis and priapism. Although uncommon, these disorders can cause problems with urination and sexual activity. In some cases, they are considered a medical emergency, because decreased blood flow to the penis may result in tissue ischemia and necrosis.

Pathophysiology

Phimosis is constriction of the foreskin in uncircumcised men so that it cannot be retracted over the glans penis. Phimosis may be congenital, or it may be related to chronic infections under the foreskin, which lead to adhesions. The major problem with this condition is that it prevents adequate hygiene, which may lead to malignant changes of the penis. It also may interfere with urinary elimination and intercourse. In a related disorder, called *paraphimosis,* the foreskin is tight and constricted, and is not able to cover the glans penis. The glans becomes engorged and edematous, and is painful. Paraphimosis may result from long-term retraction of the foreskin, such as occurs in placement of an indwelling catheter in the uncircumcised male (Porth, 2005). The tight foreskin can result in ischemia of the glans.

Priapism is an involuntary, sustained, painful erection that is not associated with sexual arousal. The prolonged erection may result in ischemia and fibrosis of the erectile tissue with high risk of subsequent impotence (Porth, 2005). The disorder, classified as either primary or secondary, is caused by impaired blood flow in the corpora cavernosa. Primary priapism results from conditions such as tumors, infection, or trauma. Secondary priapism is caused by blood disorders (e.g., leukemia, sickle cell anemia, and thrombocytopenia), neurologic disorders (e.g., spinal cord injury or stroke), renal failure, and some medications (Box 50–1). Men who use intracavernous injection therapy or Cialis for ED are at risk for priapism.

INTERDISCIPLINARY CARE

Severe phimosis or paraphimosis may require surgical circumcision. If infection is present, the appropriate antibiotic is administered.

BOX 50–1 Factors Implicated in the Etiology of Priapism

Illnesses/Conditions

- Sickle cell disease
- Leukemia
- Metastatic cancer
- Spinal cord trauma

Drugs

- Papaverine
- Psychotropic drugs
- Alcohol
- Marijuana

Treatment of priapism includes iced saline enemas, intravenous ketamine (Ketalar) administration to induce anesthesia, and spinal anesthesia. Blood may be aspirated from the corpus through the dorsal glans, followed by catheterization and pressure dressings to maintain decompression. If necessary, more aggressive surgery to create vascular shunts to maintain blood flow is performed. When priapism is prolonged, it increases the risk of subsequent ED.

NURSING CARE

Nursing care for priapism focuses on assessing the penis, monitoring urinary output, and providing pain control. Assessment of the penis includes inspection for degree of erection and changes in color due to ischemia, and palpation of the penis for firmness and degree of rigidity. Monitor urine output, assessing for oliguria or signs of acute urinary retention. Pain is treated with analgesics.

The man usually has moderate to severe anxiety related to pain, the treatment, and the threat to his sexual function. The treatment may sound bizarre and painful, especially since the area is already extremely sensitive. The man may be acutely embarrassed by the erection and needs reassurance that the nurse understands that the erection is not within his control.

THE MAN WITH CANCER OF THE PENIS

Cancer of the penis is a rare cancer in North America, occurring in approximately 1500 men per year (American Cancer Society [ACS], 2005a). It most commonly affects men between the ages of 45 and 60. The cause is unknown. Penile cancer is rare in Jewish and Muslim men, populations in which routine circumcision is practiced, although the correlation between circumcision and this cancer is unclear. Phimosis and poor genital hygiene are risk factors, as are human papillomavirus HPV and HIV infections. Ultraviolet light exposure (such as that used to treat psoriasis) also may play a role (Porth, 2005).

Pathophysiology

Squamous cell carcinoma accounts for 95% of all penile cancers (Porth, 2005). The tumor usually develops as a nodular or wartlike growth or a red velvety lesion on the glans or foreskin. The tumors tend to grow slowly. Penile cancer spreads to the superficial or deep inguinal nodes, and very late in the disease may spread to the bone, liver, or lungs. If the lesion is treated before inguinal node involvement, chances for a cure are good. Most of these lesions are painless but there may be significant ulceration and bleeding. Purulent, foul-smelling discharge may be evident under the foreskin. Occasionally, men with penile cancer may present with enlarged inguinal lymph nodes.

INTERDISCIPLINARY CARE

Cancer of the penis is diagnosed by a biopsy of the lesion, including any suspicious inguinal lymph nodes. The cancer is staged according to the size of the tumor, extent of invasion, status of inguinal lymph nodes, and presence or absence of distant metastasis. Small, localized lesions may be treated with fluorouracil cream, external-beam radiation, laser therapy, or surgical excision. Larger lesions with superficial or deep infiltration of penile structures require partial or total amputation of the penis. Chemotherapy (discussed in Chapter 14 ∞) may be administered to men with distant metastasis.

NURSING CARE

Education can help prevent this disease or provide early detection and cure. Teach men about genital hygiene (including retraction of the foreskin if uncircumcised, and washing the glans penis while bathing or showering) and the risks of unprotected sex, and encourage condom use. Encourage men to shield their genitals when having ultraviolet light therapy or using tanning salons. Discuss the importance of seeking prompt treatment for any lesion or abnormal drainage noted on the penis.

If the man has a penile amputation *(penectomy),* nurses help cope with the problems of a shortened or absent penis, including the potentially devastating effect on body image and self-concept. If a total penectomy is performed, the surgeon creates a perineal urethrostomy, preserving urinary continence. However, the man must void in the sitting position, reinforcing the feeling of loss. Dribbling of urine after voiding may be a problem for a few weeks. The man should be taught to perform careful perineal hygiene following surgery, using mild soap and water. Sitz baths may be helpful to relieve pain and to promote healing. If an inguinal lymph node dissection is performed, the man may experience persistent lymphedema of the lower extremities.

DISORDERS OF THE TESTIS AND SCROTUM

THE MAN WITH A BENIGN SCROTAL MASS

Most scrotal masses are benign and can be managed in a manner that is satisfactory to the client. The most common are hydroceles, spermatoceles, and varicoceles (Figure 50–2 ■).

Pathophysiology

A **hydrocele**, the most common cause of scrotal swelling, is a collection of fluid within the tunica vaginalis. The swelling ranges from slightly larger than the testicle to larger than a grapefruit. The cause of chronic hydrocele in men over the age of 40 years is

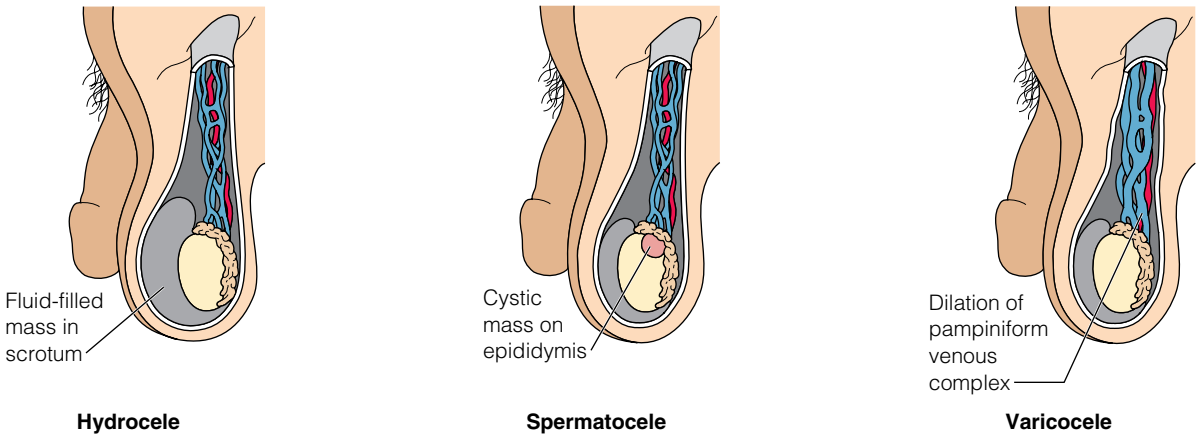


Figure 50–2 ■ Common disorders of the scrotum. Hydroceles and spermatoceles do not usually require treatment unless they become large and cause pain. Varicoceles are usually treated to prevent infertility.

an imbalance between production and reabsorption of fluid within the layers of the scrotum. Hydroceles also may occur secondary to trauma, infection, or a tumor. A hydrocele may be differentiated from a solid mass by transillumination or ultrasound of the scrotum. If the hydrocele becomes large enough to cause embarrassment or significant pain, the fluid is aspirated and an agent is injected into the scrotal sac to sclerose the tunica vaginalis. Hydroceles are not associated with infertility.

A **spermatocele** is a mobile, usually painless mass that forms when efferent ducts in the epididymis dilate and form a cyst. It is thought to result from leakage of sperm due to trauma or infection. Treatment is usually not necessary. Spermatoceles are not associated with infertility.

A **varicocele** is an abnormal dilation of a vein within the spermatic cord. It is caused by incompetent or congenitally missing valves that allow blood to pool in the spermatic cord veins. The dilated vein forms a soft mass that may be painful. Most varicoceles occur after puberty on the left side. A major concern with this condition is that it can decrease blood flow through the testis, interfere with spermatogenesis, and cause infertility. Varicoceles can be felt by scrotal palpation. Sonography is also frequently used for diagnosis. If infertility is a concern, the spermatic vein may be ligated or occluded with a sclerosing agent or balloon catheter. If the varicocele is small and infertility is not a concern, a scrotal support is recommended.

NURSING CARE

Nursing care focuses on reducing anxiety and teaching about comfort measures. Almost all men are aware of the possible pain associated with scrotal manipulation. They need information and reassurance about pain management if surgical treatment is necessary. External bleeding is minimal after surgery; however, some men do develop scrotal hematomas, manifested by scrotal edema and a purple discoloration.

THE MAN WITH EPIDIDYMITIS

Epididymitis is an infection or inflammation of the epididymis, the structure that lies along the posterior border of the testis. This disorder is more often seen in sexually active men who are less than 35 years of age.

Sexually transmitted urethritis caused by *C. trachomatis* or *N. gonorrhoeae* is the usual precipitating factor for epididymitis in younger men. Men who practice unprotected anal intercourse may acquire sexually transmitted epididymitis from *E. coli, H. influenzae, Cryptococcus,* or tuberculosis. In men older than age 35, epididymitis usually is associated with a urinary tract infection or prostatitis. Chemical epididymitis is associated with an inflammatory response to the reflux of urine into the ejaculatory ducts from urethral strictures, congenital structural anomalies, or increased abdominal pressure from excessive heavy lifting. This type is usually self-limiting and does not require treatment.

Infectious epididymis spreads by ascending the vas deferens from an already infected urethra or bladder. Early manifestations include pain and local edema, which can progress to erythema and edema of the entire scrotum, especially on the side of the involved epididymis. Complications of the disorder include abscess formation, infarction of the testis, and infertility.

INTERDISCIPLINARY CARE

The infection is diagnosed with a specimen culture from a urethral swab or epididymal aspiration. Severe epididymitis may be treated with intravenous antibiotics and hospitalization. Less acute forms of the disease are treated with outpatient antibiotic therapy. The man's sexual partner should be treated with antibiotics if the causative organism is sexually transmitted.

NURSING CARE

Nursing care involves symptomatic relief and teaching. Ice packs and a scrotal support may be applied to the scrotum to relieve pain. Ensure the man knows that complete resolution of the infection may take weeks to months, and that treatment should continue until the infection is gone. Provide information about the possibility of infertility, because the man may wish to seek evaluation for this problem at a later date.

THE MAN WITH ORCHITIS

Orchitis is an acute inflammation or infection of the testes. It most commonly occurs as a complication of a systemic illness or as an extension of epididymitis. Infection may reach the testes through the vas deferens and the lymphatic and vascular channels. Trauma, including vasectomy and other scrotal surgeries, may cause inflammation of the testes.

The most common infectious cause of orchitis in postpubertal men is mumps. Other causes include scarlet fever or pneumonia. The manifestations have a sudden onset, usually within 3 to 4 days after the swelling of the parotid glands. Manifestations include a high fever, increased WBCs, and unilateral or bilateral scrotal redness, swelling, and pain. If both testes are involved, permanent sterility may result, but this is rare (Porth, 2005).

INTERDISCIPLINARY CARE

Treatment is supportive and symptomatic, including antibiotic therapy if urine cultures are positive. Bed rest, scrotal support and elevation, hot or cold compresses, and analgesics for pain are prescribed. If a hydrocele occurs, it is aspirated. Nursing care is similar to that of the client with epididymitis and other scrotal disorders.

THE MAN WITH TESTICULAR TORSION

Testicular torsion, twisting of the spermatic cord with scrotal swelling and pain, is a potential medical emergency. The condition occurs most often between birth and age 20, but can occur at any age. Testicular torsion may occur spontaneously, or it may follow trauma or physical exertion. The torsion of the arteries and veins decreases or stops testicular circulation with resultant vascular engorgement and ischemia.

Testicular torsion is usually diagnosed by history and physical examination. Testicular scanning may be used to determine if blood flow to the testicle is reduced, or a prostate ultrasound may be done to identify masses or torsion. Surgical treatment, which involves detorsion of the testicle and fixation to the scrotum, must begin as quickly as possible. If the testicle is necrotic or has sustained significant damage, an *orchiectomy* (surgical removal of a testes) is performed.

THE MAN WITH TESTICULAR CANCER

Testicular cancer accounts for only 1% of all cancers in men; however, it is the most common cancer in men between the ages of 15 and 40. Annually, an estimated 8000 young men in the United States are diagnosed with this cancer. Although the cause is unknown, white American men are 5 to 10 times more likely to develop testicular cancer than are African American men (ACS, 2005a) (see the Focus on Cultural Diversity box). Survival from testicular cancer has improved dramatically as a result of treatment with effective combination chemotherapy.

The cause of testicular cancer is unknown, but both congenital and acquired factors have been associated with tumor development. About 5% develop in a man with a history of undescended testicle (*cryptorchidism*). Testicular cancer is more common on the right side, which parallels the incidence of cryptorchidism (Tierney et al., 2004).

FOCUS ON CULTURAL DIVERSITY
Risk for Testicular Cancer

- Caucasian American men have 5 to 10 times the risk of African American men.
- Caucasian American men have more than twice the risk of Asian American men.
- Hispanic men have a risk between that of Asians and non-Hispanic Caucasians.

Risk Factors

Risk factors for testicular cancer are listed below:

- Age
- Cryptorchidism
- Genetic predisposition, especially in identical twins and brothers
- Cancer of the other testicle
- Other risk factors under investigation include occupational risks, presence of multiple atypical nevi, HIV infection, cancer *in situ,* body size, and maternal hormone use (ACS, 2004).

Pathophysiology

Approximately 95% of testicular malignancies are germ cell tumors (Porth, 2005). Germ cell tumors are classified, depending on their origin and ability to differentiate, as seminomas and nonseminomas. Seminomas are the most common type, and are believed to arise from the seminiferous epithelium of the testes. Nonseminomas contain more than one cell type; they include embryonal carcinoma, teratoma, choriocarcinoma, and yolk cell carcinoma. The most common type in men ages 20 to 30 is embryonal carcinomas. Testicular cancer may also arise from specialized cells of the gonadal stroma. These tumors are named for the cells from which they originate: Leydig cell, Sertoli cell, granulosa cell, and theca cell tumors.

Manifestations

The first sign of testicular cancer may be a slight enlargement of one testicle with some discomfort. The man may also have an abdominal ache and a feeling of heaviness in the scrotum. Local spread of the cancer to the epididymis or spermatic cord is inhibited by the outer covering of the testicles, the tunica albuginea. Therefore, spread by lymphatic and vascular channels to other organs often causes distant disease before large masses develop in the scrotum. Lymphatic dissemination usually leads to disease in retroperitoneal lymph nodes, whereas vascular dissemination can lead to metastasis in the lungs, bone, or liver. Bilateral presentation of testicular cancer is unusual. Manifestations of testicular cancer are summarized in the box on the next page. Manifestations of metastasis include lower extremity edema, back pain, cough, hemoptysis, or dizziness. HCG-producing tumors may cause breast enlargement (*gynecomastia*).

MANIFESTATIONS of Testicular Cancer

Common
- Painless swelling on one testicle

Metastatic symptoms
- Neck mass
- Respiratory symptoms
- Gastrointestinal disturbance
- Lumbar back pain

Occasional
- Dull ache in pelvis or scrotum
- Painless nodule on one testicle

Uncommon
- Acute pain in scrotum

Rare
- Infertility
- Gynecomastia

INTERDISCIPLINARY CARE

Care focuses on diagnosis, elimination of the cancer, and prevention or treatment of metastasis. Once testicular cancer is suspected, the man undergoes a number of screening tests to help identify the disease and its stage. If the disease is confined to the testicle, it is classified as stage I. Stage II disease is limited to the testicle and regional lymph nodes. Stage III disease involves metastasis above the diaphragm or extensive visceral involvement. Often, the man does not undergo biopsy before the beginning of treatment, but instead receives a definitive diagnosis after orchiectomy. Most men treated for testicular cancer will live a normal life span.

Diagnosis

Diagnosis may be made by various laboratory tests. Serum studies are done to identify tumor markers. Germ cell tumors produce biochemical markers such as human chorionic gonadotropin (hCG) and alpha-fetoprotein (AFP) that can be measured using radioimmunoassay techniques. Elevated levels provide strong evidence of testicular cancer. These markers are also measured after surgery to help determine the presence of residual disease that remains undetected by other means. Persistent elevation may indicate the need for further therapy. Serum lactic acid dehydrogenase (LDH) levels are elevated in testicular cancer, and may be significantly elevated when metastatic disease is present. The LDH is a less specific indicator of testicular cancer than the hCG and AFP.

Medications

Progress in chemotherapy to treat testicular cancer is one of the chief reasons why most men survive the disease. The client with advanced disease receives platinum-based combination chemotherapy. Two frequently used combinations are (1) cisplatin, bleomycin, and etoposide (BEP), and (2) etoposide plus cisplatin (EP). Toxicity from the BEP regimen can be significant, with nausea, vomiting, hair loss, bone marrow suppression, nephrotoxicity, ototoxicity, and peripheral neuropathy. Decreasing the number of BEP cycles to three (rather than four) or using the EP regimen reduces both the mortality and morbidity associated with chemotherapy. Chemotherapy is discussed in Chapter 14.

Surgery

Radical orchiectomy is the treatment used in all forms and stages of testicular cancer. A modified retroperitoneal lymph node dissection that preserves the nerves necessary for ejaculation often is performed at the same time.

Radiation Therapy

Radiation therapy is used for stage I seminoma to treat cancer in the retroperitoneal lymph nodes, the most frequent site for distant metastasis. The man may experience temporary diarrhea, nausea, or a decline in bone marrow function, such as thrombocytopenia or leukopenia. These problems are usually mild and respond well to symptomatic treatment or time. Damage to the contralateral testicle is minimized by careful shielding. Pretreatment and posttreatment analysis of sperm number and function is necessary. The most common long-term complication is dyspepsia or ulcer disease. Radiation therapy is discussed in Chapter 14.

NURSING CARE

Health Promotion

Unfortunately, most men who develop testicular cancer do not have overt risk factors. Therefore, beginning at the age of 15, all men should perform monthly testicular self-examination, as described in Box 50–2.

Nursing Diagnoses and Interventions

Nursing care of the man with testicular cancer is complex. The nurse must consider the reactions to the diagnosis, the change in body image accompanying treatment, and sexual

BOX 50–2 Testicular Self-Examination

- Examine your testicles when you are taking a warm shower or bath, or just after if you prefer to use a mirror to compare size.
- The scrotum, testicles, and hands should be soapy to allow easy manipulation of the tissue.
- Gently roll each testicle between the thumb and fingers of each hand. If one testicle is substantially larger than the other, or if you feel any hard lumps, consult your physician immediately.

- Normal scrotal contents may be confusing. Just above and behind the testicle is the epididymis. It feels soft and tender overall, although parts of it may be rather firm. This is normal. The spermatic cord, a small, round, movable tube, extends up from the epididymis. It feels firm and smooth. Of greatest concern is any hard lump felt directly on the testicle, even if it is painless.
- Choose a day out of each month on which to examine yourself. Most men choose an easy day to remember, such as the first or last day of the month. Star this day on your calendar to help you remember.

MEDIALINK TSE Animation

and reproductive issues. Although chances of a cure are excellent, the long-term effect on quality of life may be extensive, requiring a change in life goals.

Deficient Knowledge

The nurse often initiates and reinforces teaching about what to expect after radical orchiectomy. The man's knowledge about surgery is assessed, and postoperative routines such as early ambulation are explained (see Chapter 4 ∞).

- Explain pain control methods. In addition to the usual analgesics used to control postoperative incisional pain, ice bags may be applied to the scrotum. A scrotal support provides relief, especially when the client ambulates. *Surgery results in incisional pain, and the scrotum is tender and slightly swollen.*
- Teach the manifestations of complications. The incision is closed with Steri-Strips or staples, and, although rare, wound dehiscence is possible. If the incision gapes open, or if there is bleeding beyond slight oozing after 24 hours, the man should call the surgeon. Another rare complication is a hematoma in the scrotum caused by bleeding from the spermatic cord stump. Rapid onset of scrotal edema is a sign of this problem. *Because the man is usually discharged early, complications may not become apparent until he is at home.*

Ineffective Sexuality Patterns

The effect of testicular cancer and its treatment on sexual and reproductive function is varied. If the man has a retroperitoneal lymph node dissection, severing of the sympathetic plexus may result in retrograde ejaculation or failure to ejaculate. Infertility may be caused by ejaculation disorders, surgery, chemotherapy, or radiation therapy.

- Assess the man's prediagnosis sexual function. To assess this area, the nurse must establish an atmosphere of openness and permission to discuss sexual concerns. After the initial shock of the diagnosis, men report intense concern about sexual and reproductive issues, which can be relieved only by information. *Knowledge of the man's usual sexual function can guide teaching.*
- Discuss the possibility of preserving sperm in a bank prior to treatment. *This option may help relieve the man's fears about his ability to father children in the future, but must be completed prior to initiating treatment with surgery, chemotherapy, or radiation therapy.*
- Help coping with feelings about altered sexual function and appearance. Explain that testicular implants can be inserted to preserve appearance. *Many clients, regardless of whether they are in a significant relationship, deeply grieve the loss of the ability to father children. It is important to maintain body image despite disfiguring surgery.*

Community-Based Care

Families need to be included in teaching for a variety of reasons. If the man is of reproductive age, his partner will have significant anxiety and will require information. For the teenager, parents need information about the effect on sexual function and are often very involved in postoperative care. The man needs the support of the people he loves, and knowledgeable loved ones can give effective support.

Provide teaching and reinforcement of the need for follow-up, especially if the retroperitoneal lymph nodes were not surgically explored. For men with a risk for recurrence, surveillance with periodic physical examinations, chest x-ray films, tumor markers, and CT scans of the retroperitoneal nodes could continue for a minimum of 5 years and possibly 10 years after orchiectomy.

DISORDERS OF THE PROSTATE GLAND

THE MAN WITH PROSTATITIS

Prostatitis is a term used to refer to different types of inflammatory disorders of the prostate gland. *Prostatodynia* is a condition in which the client experiences the symptoms of prostatitis but shows no evidence of inflammation or infection. Manifestations of prostatitis and prostatodynia are summarized in the box on the next page.

Pathophysiology and Manifestations

The National Institutes of Health have defined four types of prostatitis: acute bacterial prostatitis, chronic bacterial prostatitis, chronic prostatitis/pelvic pain syndrome, and asymptomatic inflammatory prostatitis. Men with asymptomatic inflammatory prostatitis have no subjective symptoms, but are diagnosed when a biopsy or prostatic fluid examination is conducted.

Acute Bacterial Prostatitis

Acute bacterial prostatitis is most often caused by an ascending infection from the urethra or reflux of infected urine into the ducts of the prostate gland. The organism most often responsible for the infection is *E. coli;* other causative organisms include *Pseudomonas, Klebsiella,* and *Chlamydia.*

Manifestations of acute bacterial prostatitis include increased temperature, malaise, muscle and joint pain, urinary frequency and urgency, dysuria, and urethral discharge. The man often experiences dull, aching pain in the perineum, rectum, or lower back. On rectal examination, the prostate is enlarged and painful.

Chronic Bacterial Prostatitis

Men with chronic bacterial prostatitis often present with a history of recurrent urinary tract infections. The causative organisms are most often *E. coli, Proteus,* or *Klebsiella.* Calculi may form in the prostate and contribute to the chronicity of the problem.

The manifestations of chronic bacterial prostatitis include urinary frequency and urgency, dysuria, low back pain, and perineal discomfort. Epididymitis may be associated with the prostatitis.

Chronic Prostatitis/Chronic Pelvic Pain Syndrome

This type of prostatitis is both the most common and the least understood of the syndromes (NKUDIC, 2003b). The two

MANIFESTATIONS of Prostatitis and Prostatodynia

Acute Bacterial Prostatitis
- Onset (may be abrupt): obstruction, irritation, or pain upon voiding; frequency; and urgency
- Positive cultures of infectious organism
- Nonurinary symptoms: chills, fever, low back and pelvic floor pain

Chronic Bacterial Prostatitis
- Urinary symptoms sometimes similar to those of the acute form, except less sudden, less dramatic, or even absent
- Positive cultures of causative organism not always obtainable

Chronic Prostatitis
- Perineal, suprapubic, low back, or genital pain
- Irritation upon voiding
- Postejaculatory pain
- Negative cultures of organisms

Prostatodynia
- Pelvic, low back, or perineal pain
- Irritation or obstruction upon voiding
- No evidence of inflammation in the prostate
- No urinary tract infection
- Normal prostatic secretions

types (inflammatory and noninflammatory) are based on the presence of white blood cells in the prostatic fluid.

- *Inflammatory prostatitis* is believed to be an autoimmune disorder, but the actual cause is unknown. Men with this type of prostatitis have low back pain; urinary manifestations; pain in the penis, testicles, scrotum, lower back, and rectum; decreased libido; and painful ejaculations. They do not have bacteria in their urine, but do have abnormal inflammatory cells in prostatic secretions.
- *Noninflammatory prostatitis* (prostatodynia) has manifestations similar to those of inflammatory prostatitis, but no evidence of urinary or prostatic infection or inflammation can be found. The cause is not known, but is believed to be the result of a problem outside the prostate gland, such as obstruction of the bladder neck.

INTERDISCIPLINARY CARE

Diagnosis

It is often difficult to diagnose prostatitis. Urine and prostatic secretion examination and cultures are obtained to determine the presence and type of blood cells and bacteria. X-ray studies and ultrasound to visualize pelvic structures also may be useful.

Medications

Bacterial prostatitis is treated with appropriate antibiotics. Men with the chronic form must take antibiotics for a much longer period, often up to 4 months, and may still relapse as soon as the antibiotic is discontinued. Nonbacterial prostatitis does not usually respond satisfactorily to drug therapy, although relief from symptoms is possible. Nonsteroidal anti-inflammatory drugs are useful for pain, and anticholinergics may reduce voiding symptoms. Prostatodynia is treated symptomatically to relieve muscle tension, usually with alpha-adrenergic blocking agents or muscle relaxants.

NURSING CARE

Teaching for the man with prostatitis focuses on symptom management. Men with acute and chronic bacterial prostatitis should be taught to increase fluid intake to around 3 L daily and to void often. These measures help decrease irritation when voiding. Regular bowel movements help ease the pain associated with defecation. Local heat, such as sitz baths, may be helpful to relieve pain and irritation. It is important to teach the man to finish the course of antibiotic therapy. Men with chronic prostatitis/chronic pelvic pain syndrome need to know that the condition is not contagious and does not cause cancer (Porth, 2005). Referral sources for information include the National Kidney and Urologic Diseases Information Clearinghouse, the American Foundation for Urologic Disease, and the Prostatitis Foundation.

THE MAN WITH BENIGN PROSTATIC HYPERPLASIA

Benign prostatic hyperplasia (BPH), an age-related, nonmalignant enlargement of the prostate gland, is a common disorder of the aging male. The prostate, very small at birth, grows at puberty, and reaches adult size around age 20. Benign hyperplasia (increased number of cells) begins at 40 to 45 years of age, and continues slowly through the rest of life. It is estimated that more than one-half of all men over age 60 have BPH (Porth, 2005). The problem that brings men to a healthcare provider is the associated urinary dysfunction.

Risk Factors

Although the exact cause of BPH is unknown, risk factors include:

- Age
- Family history
- Race (highest in African Americans and lowest in native Japanese)
- Diet high in meat and fats.

Pathophysiology

The two necessary preconditions for BPH are age of 50 or greater and the presence of testes. Men who are castrated before puberty do not develop BPH. The androgen that mediates prostatic growth at all ages is dihydrotestosterone (DHT), which is formed in the prostate from testosterone. Although androgen levels decrease in aging men, the aging prostate appears to become more sensitive to available DHT. Estrogen, produced in small amounts in men, appears to sensitize the prostate gland to the effects of DHT. Increasing estrogen levels associated with aging or a relative increase in estrogen related to testosterone levels may contribute to prostatic hyperplasia.

BPH begins as small nodules in the periurethral glands, which are the inner layers of the prostate. The prostate enlarges through formation and growth of nodules (hyperplasia) and enlargement of glandular cells (hypertrophy). These changes occur over a long period of time. The pathophysiologic effects result from a combination of factors, including urethral resistance to the effects of BPH, intravesical pressure during voiding, detrusor muscle strength, neurologic functioning, and general physical health.

Manifestations

The expanding prostatic tissue compresses the urethra (Figure 50–3 ■) and causes partial or complete obstruction of the outflow of urine from the urinary bladder. The detrusor muscles hypertrophy to compensate for increased resistance to urinary flow; however, eventually decreased bladder compliance and bladder instability result. As a result, the man with BPH has manifestations from obstruction (weak urinary stream, increased time to void, hesitancy, incomplete bladder emptying, and postvoid dribbling) and irritation (frequency, urgency, incontinence, nocturia, dysuria, and bladder pain). Urinary retention may become chronic, resulting in overflow incontinence with any increase in intra-abdominal pressure. There is little correlation between the size of the prostate gland and the urinary manifestations. Manifestations of BPH are summarized in the box on this page.

FAST FACTS

Urinary Problems with BPH

- A hesitant, interrupted weak stream.
- Urgency with leaking or dribbling of urine.
- More frequent urination in small amounts, especially at night (nocturia).

Complications

Unless the enlarging mass is reduced, multiple complications may occur. As urine is retained in the bladder, increasing bladder distention occurs. Diverticula (outpouchings) on the bladder wall result from the distention. The distention may also obstruct the ureters. Infection, more common in retained urine and in diverticula, may ascend from the bladder to the kidneys. Hydroureter, hydronephrosis, and renal insufficiency are possible complications.

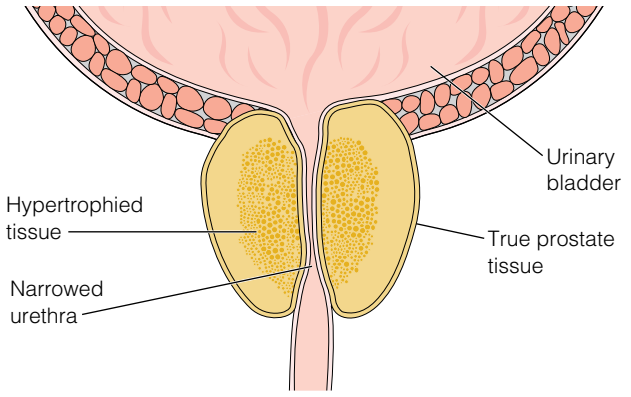


Figure 50–3 ■ Benign prostatic hyperplasia.

MANIFESTATIONS of Benign Prostatic Hyperplasia

- Diminished force of urinary stream
- Hesitancy in initiating voiding
- Postvoid dribbling
- Sensation of incomplete emptying
- Urinary retention
- Nocturia
- Frequency
- Urgency
- Urge incontinence
- Dysuria

INTERDISCIPLINARY CARE

Care of men with BPH focuses on diagnosing the disorder, correcting or minimizing the urinary obstruction, and preventing or treating complications. There is no way to reverse BPH. Treatment is often determined by the severity of the manifestations and the presence of complications. Mild cases are often monitored over time, and may remain stable or improve.

Diagnosis

A diagnosis of BPH involves both physical examination and laboratory tests to not only diagnose the disease but also to differentiate it from prostate cancer. A digital rectal examination (DRE) is done to examine the external surface of the prostate; in BPH it is asymmetrical and enlarged. Examination of the creatinine levels of the blood is conducted to assess for kidney damage.

The urine is examined for WBCs, RBCs, and bacteria. Urinary function is assessed by measuring residual urine (amount of urine remaining in the bladder after voiding) with ultrasonography or postvoiding catheterization (more than 100 mL is considered high), and through uroflowmetry, which measures urine flow rate; normal is greater than 14 mL/sec. A finding of less than 10 mL/sec indicates obstruction.

Prostate-specific antigen (PSA) levels are obtained to rule out prostate cancer. PSA is a glycoprotein produced only in the cytoplasm of benign and malignant prostate cells; the serum level corresponds with the volume of both benign and malignant prostate tissue. Further information is provided in the next section under diagnosis of prostate cancer.

In addition, the man's own subjective experiences with BPH are included in the diagnosis and treatment. For example, the International Prostate Symptom Score uses a scale of 0 (not at all) to 5 (almost always) to collect data about areas such as feeling as though the bladder did not empty with urinating, need to urinate within 2 hours after urinating, starting and stopping the stream several times while urinating, and straining to urinate. This questionnaire also asks how many times during the night the man gets up to urinate and how the man feels about having the disorder.

Medications

Treatment with medications is based on two considerations: The hyperplastic tissue is androgen dependent, and smooth muscle contraction within the prostate can exacerbate urinary obstruction. The first consideration is usually addressed by treatment for mild prostate enlargement with finasteride (Proscar) or du-

MEDIALINK Case Study: BPH

tasteride (Avodart), antiandrogen agents that inhibit the conversion of testosterone to DHT and cause the enlarged prostate to shrink in size. They may cause impotence, decreased libido, and decreased volume of ejaculate. Client and family education includes the information that crushed tablets should not be handled by pregnant women, because the drug may be absorbed through the skin and be harmful to a male fetus.

Excessive smooth muscle contraction in BPH may be blocked with the alpha-adrenergic antagonists such as terazosin (Hytrin), doxazosin (Cardura), tamsulosin (Flomax), and alfuzosin (Uroxatral). These medications relieve obstruction and increase the flow of urine. They may cause orthostatic hypotension. Client and family teaching includes advice about making position changes slowly to avoid dizziness and accidental falls, how to take and record blood pressure, and to check with the healthcare provider before taking any medication for coughs, colds, or allergies (because these over-the-counter medications may contain an adrenergic agent).

Federal research found that using finasteride and doxazosin together is more effective than using each alone to relieve manifestations and prevent the progression of BPH (NKUDIC, 2004).

Surgery

Men who have urinary retention, recurrent urinary tract infection, hematuria, bladder stones, or renal insufficiency secondary to BPH are candidates for surgical intervention. Surgical treatment may be performed by minimally invasive surgery or through transurethral surgery, open surgery, or by laser surgery.

MINIMALLY INVASIVE SURGERY Because medications are not effective for all men, a number of procedures have been developed to relieve the manifestations of BPH that are less invasive than traditional surgery.

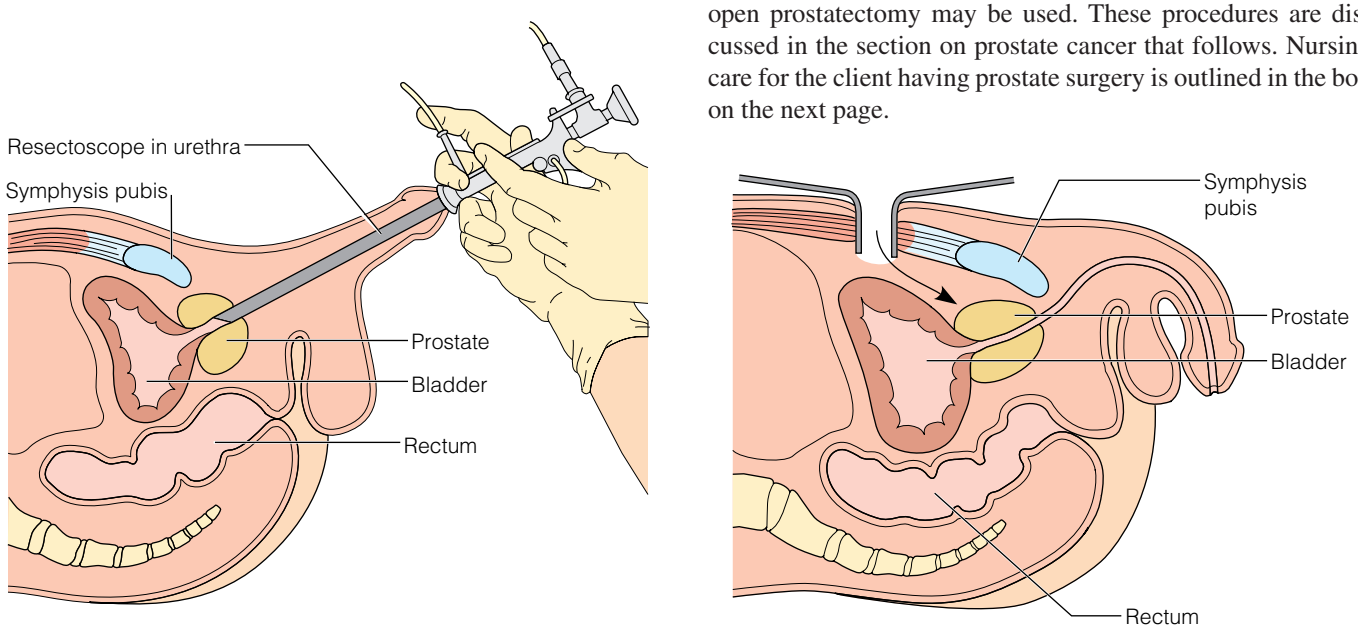
Microwaves are used to heat and destroy excess prostate tissue in a procedure called *transurethral microwave thermotherapy*. During the procedure, a cooling system protects the urinary tract. The procedure takes about an hour and can be performed on an outpatient basis. Although microwave procedures do not cure BPH, they do reduce urinary manifestations. The procedures do not cause impotence or incontinence.

The *transurethral needle ablation (TUNA)* system uses low-level radio frequency through twin needles to burn away a region of the enlarged prostate. Shields protect the urethra. TUNA improves the flow of urine through the urethra. It does not cause impotence or incontinence.

TRANSURETHRAL SURGERY A *transurethral resection of the prostate (TURP)* is the surgical procedure used most often. Obstructing prostate tissue is removed using the wire loop of a resectoscope and electrocautery, inserted through the urethra (Figure 50–4 ■). No external incision is necessary. During the procedure the surgeon uses the resectoscope to remove obstructing tissue one piece at a time. The tissue is flushed into the bladder with fluid and then flushed out at the end of the operation. This surgery has potential risks, however, including postoperative hemorrhage or clot retention, inability to void, and urinary tract infection. Other possible complications are incontinence, impotence, and retrograde ejaculation.

In the *transurethral incision of the prostate (TUIP)* procedure, small incisions are made in the smooth muscle where the prostate is attached to the bladder. The gland is split to reduce pressure on the urethra. No tissue is removed, so this procedure is most appropriate for men with smaller prostate glands. TUIP can be done on an outpatient basis, and has the additional advantage of less risk of postoperative retrograde ejaculation than is associated with TURP or other prostatectomy procedures.

OPEN SURGERY When the prostate gland is very large, an open prostatectomy may be used. These procedures are discussed in the section on prostate cancer that follows. Nursing care for the client having prostate surgery is outlined in the box on the next page.



A Transurethral resection of the prostate

B Retropubic prostatectomy

Figure 50–4 ■ *A,* In a transurethral resection of the prostate, a resectoscope inserted through the urethra is used to remove excess prostate tissue. *B,* In a retropubic prostatectomy, prostate tissue is removed through an abdominal incision.

NURSING CARE OF THE MAN HAVING A **Prostatectomy**

PREOPERATIVE CARE

- Assess the man's and family's knowledge about the surgery *Some men are confused about the surgical approach because there are several, quite different methods.*
- Inform the man that he will have a urinary catheter when he returns from surgery, and he may have a drain(s) in his incision. He also will be wearing sequential pneumatic compression stockings. *This knowledge can reduce anxiety postoperatively and increase cooperation with postoperative care.*
- Ensure that a signed consent from is in the chart and that all other preoperative tasks outlined in Chapter 4 ∞ are done.
- Bowel preparation with a 2% neomycin enema may be ordered. *This cleanses the bowel if a perineal approach will be used.*
- Communicate willingness to address any concerns of anxiety *Men may be anxious about the outcome of their surgery and potential long-term effects of the surgery of their sexuality. When a prostatectomy is performed for prostate cancer, additional fears include the extent of the cancer and surgery, chances for cure, and possible end-of-life issues.*

POSTOPERATIVE CARE

- Maintain the usual postoperative assessments (see Chapter 4 ∞ and follow aseptic techniques in urinary drainage and irrigation care. Monitor vital signs closely for the first 24 hours and regularly thereafter. *The man who has had prostate surgery is at risk for hemorrhage and infection. Vital sign changes may be early manifestations.*
- Maintain accurate intake and output records, including amounts of irrigating solution used. Frequently assess patency of any catheters and drains. Monitor color and character of urine. *Catheters may become occluded by blood clots or kinks, interfering with urinary drainage and increasing the risk of hemorrhage.*
- Assess and manage the man's pain. *The man may have at least three types of pain: incisional pain, bladder spasms, and abdominal cramps due to intestinal gas. Analgesics and nonsteroidal anti-inflammatory drugs (NSAIDs) are administered on a routine and prn basis to control incisional pain. Bladder spasms may be accompanied by strong urges to void and urine leakage around the catheter. Belladonna and opium (B & O) suppositories may be used to relieve bladder spasms.*
- Maintain antiembolic stockings and pneumatic compression devices as ordered. Assist with leg exercises and ambulation as ordered. *The man who has had prostate surgery is at risk for developing thromboemboli; these are important preventive measures.*
- Encourage the man to maintain a liberal fluid intake of 2 to 3 L a day. *Increased fluids reduce burning on urination after catheter removal and the risk of urinary tract infection.*

THE MAN WITH A TRANSURETHRAL RESECTION OF THE PROSTATE (TURP)

- For the first 24 to 48 hours, monitor for hemorrhage, evidenced by frankly bloody urinary output, presence of large blood clots, decreased urinary output, increasing bladder spasms, decreased hemoglobin and hematocrit, tachycardia, and hypotension. Notify the physician if any of these manifestations occur. *Postoperative hemorrhage may be either arterial or venous, and may be precipitated by movement, bladder spasms, or an obstructed urinary drainage system.*
- Instruct the man with a three-way indwelling catheter with traction to keep the leg straight while the traction is applied. *A No. 18- to 22-Fr three-way catheter with a 30- to 45-mL balloon usually is inserted following a TURP. The inflated balloon is pulled down into the prostatic fossa and the catheter tubing is pulled down and taped to the man's leg to apply pressure against the operative site, preventing bleeding.*
- Explain that the presence of a urinary catheter will cause the sensation of needing to void, but it is important not to strain to try to void around the catheter or when having a bowel movement. Explain that bladder spasms; experienced as lower abdominal pressure or pain and a desire to urinate, may occur. Ensure that the man understands that this is an expected sensation, and that medications can help alleviate this discomfort. *Pressure on the urethra by the large catheter and on the internal sphincter by the catheter's balloon stimulate the micturition reflex. Straining to void or to have a bowel movement may stimulate bladder spasms and increase pain; it also may increase the risk for bleeding. Administer pain medications at regular intervals.*
- If the man has a continuous bladder irrigation (CBI), assess the catheter and the drainage tubing at regular intervals. Maintain the rate of flow of irrigating fluid to keep the output light pink or colorless. Assess the urinary output every 1 to 2 hours for color, consistency amount, and presence of blood clots; assess for bladder spasms. *CBI is used to prevent the formation of blood clots which could obstruct urinary output. Bladder distention resulting from output obstruction increases the risk of bleeding. Irrigating fluids are continuously infused and drained at a rate to keep urine light pink or colorless. Urine that is frankly bloody, contains many blood clots, or is decreased in amount, as well as bladder spasms, are indicators of obstruction and bleeding.*
- Assess for fluid volume excess and hyponatremia, called TURP syndrome, which is manifested by hyponatremia, decreased hematocrit, hypertension, bradycardia, nausea, and confusion. If these manifestations occur, notify the physician. *TURP syndrome results from the absorption of irrigating fluids during and after surgery. Untreated, it may result in dysrhythmias, seizures, or both.*
- If the man does not have CBI, follow agency procedure and physician orders for irrigating the indwelling catheter (usually when the urine is frankly bloody or has numerous larger blood clots, or when bladder spasms increase). In most instances, using sterile technique, the catheter is gently irrigated with 50 mL of irrigating solution at a time, until the obstruction is relieved or the urine is clear. Ensure equal input and output of irrigating fluid. *Intermittent irrigation may be used to prevent obstruction of urinary drainage.*
- Following catheter removal, assess the amount, color, and consistency of urine. Explain that the man may experience burning on urination, that dribbling after urination is a common experience, and that the urine may contain small blood clots after catheter removal. *The CBI and catheter usually are removed in*

NURSING CARE OF THE MAN HAVING A Prostatectomy (continued)

the 24 to 48 hours following surgery. Urinary control may be improved by teaching the man to start and stop the urine stream several times during each voiding and by practicing Kegel exercises. Regaining full control may take up to 1 year.

THE MAN WITH A RETROPUBIC PROSTATECTOMY

- Assess the abdominal incision for the presence of urine. *Because the bladder is not entered during a retropubic prostatectomy, no urine should be found on the dressing.*
- Assess the abdominal incision for increased or purulent drainage, and the man for an increased temperature and pain. *These manifestations indicate the presence of infection.*

THE MAN WITH A SUPRAPUBIC PROSTATECTOMY

- Assess urinary output from both the suprapubic and the urethral catheters. *The man with a suprapubic prostatectomy often has two separate closed drainage systems: one from the suprapubic incision and one from a urethral catheter.*
- Assess the abdominal dressing for urinary drainage, and change saturated dressings frequently. Consult with a skin care specialist if necessary. *Urine is highly irritating to the skin.*
- Following removal of the urethral catheter (usually 2 to 4 days after surgery) and based on physician orders, clamp the suprapubic catheter and encourage the man to void. Assess residual urine by unclamping the suprapubic catheter and measuring urinary output after voiding. *If residual urine is 75 mL or less with several voidings, the suprapubic catheter is removed.*

THE MAN WITH A PERINEAL PROSTATECTOMY

- Assess perineal incision for drainage and manifestations of infection. *Location of the incision in the perineum increases the risk of infection.*
- Do not take rectal temperatures or administer enemas. *Insertion of a thermometer or enema tubing into the rectum may precipitate bleeding.*
- Use a T-binder or padded scrotal support to hold the dressing in place. Following removal of the dressing and perineal sutures, heat lamps or sitz baths may be used. *The location of the dressing makes application difficult: Heat lamps or sitz baths provide heat and promote healing.*
- Teach the man to perform perineal irrigations with sterile normal saline as ordered and after each bowel movement. *Because of the proximity of the incision to the anus, special wound care is necessary to prevent infection.*

LASER SURGERY In laser surgery, the surgeon uses a cystoscope to pass the YAG laser fiber through the urethra into the prostate and then vaporizes obstructing prostate tissue with several short bursts of energy. An advantage of laser surgery is decreased blood loss and a more rapid recovery time. However, this method may not be as effective for larger prostates.

New Treatments

Newer treatments for BPH include minimally invasive procedures such as balloon urethroplasty and placement of intraurethral stents to maintain patency of the urethra. Balloon urethroplasty is a simple procedure in which a balloon-tipped catheter is inserted into the narrowed portion of the urethra and inflated. Inflation of the balloon widens the urethra, relieving obstruction. These procedures can be done as outpatient surgery.

Alternative and Complementary Therapies

Phytotherapy is the use of plants or plant extracts for medical treatment. Several plant extracts have been used for years in Europe to treat BPH and are being used more often in the United States. The phytotherapy used includes saw palmetto berry, the bark of *Pygeum africanum,* the roots of *Echinacea, purpurea,* and *Hypoxis rooperi,* and the leaves of the trembling poplar. The mechanisms of action of these extracts is unknown, but men report they are effective in relieving manifestations (Tierney et al., 2004).

NURSING CARE

Most men are unsure of the function of the prostate gland and even the prostate's exact location, though its relationship to sexual and urinary function is at least generally known. This lack of knowledge, coupled with the growing number of treatment options, is confusing to many men. There are many similarities between the nursing care of men with BPH and that of men with prostate cancer (see the section that follows).

Nursing Diagnoses and Interventions

This section provides interventions related to deficient knowledge, urinary retention, risk for infection, and risk for imbalanced fluid volume.

Deficient Knowledge

- Explain the anatomy and physiology of the prostate gland, as well as normal changes that occur with aging. *Men must know about their bodies in order to make accurate decisions about treatment.*
- Discuss treatment options, including information about effects on erectile function, ejaculation, and fertility. Counsel the man to discuss specific concerns with his urologist. *Many different treatment options are available; the choice should be a mutual decision between the man, his partner, and the urologist.*
- Discuss effects of prostate surgery, including urinary retention and urinary incontinence. *These common transient postoperative effects are related to the surgical procedure and the postoperative indwelling catheter.*
- Explain to the man having a TURP that a catheter will be placed into the bladder, with the tubing taped to his inner thigh, and that irrigation fluid will be infusing into and out of the catheter for the first 36 to 72 hours following surgery. *The catheter and irrigation are necessary to remove blood clots from the bladder and allow drainage of urine. Gentle traction is applied to the catheter to apply pressure to the operative site (prostatic fossa) and prevent excessive bleeding.*

- Explain that, following removal of the catheter, he will most likely have urinary frequency and urgency. He may also experience dribbling of urine after voiding. Stress the importance of increasing oral fluid intake and regular Kegel exercises. *Urinary manifestations are related to the surgical procedure and the indwelling catheter. Increased fluid intake helps decrease dysuria. Kegel exercises strengthen periurethral muscles and decrease postvoiding urine leakage.*

Urinary Retention

- Teach the manifestations of acute urinary retention: dysuria, overflow incontinence, bladder pain and distention, no urine output. *Acute urinary retention is a potential complication of BPH, requiring immediate medical attention.*
- Teach that the risk of developing urinary retention increases when the man with BPH takes over-the-counter (OTC) decongestant medications, or prescription medications such as antidepressants, anticholinergics, calcium channel blockers, antipsychotics, and medications to treat Parkinson's disease. *OTC decongestants may contain alpha-adrenergic agonists that increase smooth muscle tone of the prostate, bladder neck, and proximal urethra. The prescribed medications may relax detrusor muscle contractions. Both actions may increase the risk of urinary retention (Gray & Brown, 2002).*
- Suggest avoiding intake of large volumes of liquid at any one time. *A single intake of a large volume of liquid results in rapid bladder filling and increases the risk of urinary retention.*
- Teach how to use the double-voiding technique: Urinate, then sit on the toilet for 3 to 5 minutes, then urinate again. *This technique may relieve mild to moderate urinary retention.*

PRACTICE ALERT

In addition to avoiding a large amount of fluids at one time, it is also important to teach the man to limit liquids that stimulate voiding, such as coffee and alcoholic beverages.

RISK FOR INFECTION

- Monitor WBC and vital signs. *Infection is indicated by an increase in WBCs, body temperature, and pulse rate.*
- Maintain sterile procedures when changing irrigation fluids and emptying Foley catheter draining bag. *Sterile procedures are necessary to prevent infection.*

RISK FOR IMBALANCED FLUID VOLUME

A prostatectomy brings increased risk of imbalanced fluid volume as a result of excessive bleeding from the operative site (prostatic fossa) as well as absorption of irrigating fluid. Report manifestations indicating hypovolemic shock, excess bleeding, and/or TURP syndrome immediately.

- Monitor pulse and blood pressure. *Manifestations of hypovolemic shock include an increasing pulse and a decreasing blood pressure.*
- Monitor color of drainage in urinary drainage bag (Table 50–2). *The appearance of urine and irrigation fluid in the urinary drainage bag is an excellent indicator of bleeding after a prostatectomy.*
- Monitor for manifestations of transurethral resection (TURP) syndrome: nausea and vomiting, confusion, hypertension, bradycardia, and visual disturbances. *The absorption of isotonic bladder irrigating fluids during and after surgery may cause this hypervolemic, hyponatremic state. Treatment includes diuresis and, in severe cases, hypertonic saline administration (Tierney et al., 2004).*

TABLE 50–2 Significance of Character of Urine After Prostatectomy and Related Nursing Care

URINE COLOR	NURSING IMPLICATIONS
Light red to red	Normal day of surgery and first postoperative day
Very dark red	May indicate increased venous bleeding or inadequate dilution. Catheter at risk for occlusion. Increase flow rate of irrigant. If urine does not clear, notify physician.
Bright red	May indicate arterial bleeding. Increase flow rate of irrigant, monitor vital signs, and notify physician.
Contains blood clots	Occasional blood clot normal. If clots are frequent, catheter may become obstructed. Increase flow rate of irrigant.
Clear to light pink	Normal throughout hospitalization.

Community-Based Care

Depending on the man's choice of treatment, the procedure may be performed on an outpatient basis. The man having a TURP, although hospitalized for the surgery, may be discharged within 2 days after surgery if there are no complications. Discharge instructions after prostate surgery are provided in the Meeting Individualized Needs box on the next page. Home care often involves care of an indwelling urinary catheter. Teaching how to care for the catheter and drainage bag includes the following information:

- Change from the daytime leg drainage bag to a larger night drainage bag. A larger bag suspended from the bed frame at night permits gravity drainage of urine and prevents reflux of urine back into the bladder.
- Avoid strapping the leg bag on too tightly, which can decrease venous return and increase risk for thrombophlebitis and embolic complications such as pulmonary emboli.
- Place a soft cloth between the leg bag and thigh to decrease friction and absorb dampness under the bag, reducing the risk of skin irritation.
- Empty the leg bag every 3 to 4 hours during waking hours to prevent overfilling.
- Promptly report any unexpected changes in urine color, consistency, or odor, hematuria, evidence of frank bleeding, or large blood clots, as well as a lack of or significant decrease in urine output to the urologist.

THE MAN WITH PROSTATE CANCER

Cancer of the prostate is the most common type of cancer among men and the second leading cause of death in North America (ACS, 2006). It is primarily a disease of older men, in-

MEETING INDIVIDUALIZED NEEDS

Discharge Instructions for Men After Prostate Surgery

ACTIVITY
The healing period lasts from 4 to 8 weeks. Avoid strenuous activity and heavy lifting. Do not drive for 2 weeks, except for short rides. Do take long walks; take stairs slowly and carefully. Continue exercises that you did in the hospital to prevent blood clots in the legs. You can take showers; avoid tub baths while the catheter is in place.

BLEEDING
Bleeding can occur any time after surgery. It is fairly common after a bowel movement, coughing, or increased exercise. If you notice blood in the urine, increase fluids and rest until the urine is clear. If heavy bleeding plugs the channel, call the care provider immediately. Avoid aspirin and NSAIDs for at least 2 weeks.

BOWEL MOVEMENTS
Keep bowel movements regular and soft to avoid pressure on the prostate area. Drink fruit juices and take mild laxatives or stool softeners as ordered.

DIET
Resume your normal diet. Increase fluids to 10 glasses (8 oz) daily. Avoid alcohol unless otherwise advised by your physician.

SEXUAL INTERCOURSE
Do not have sex for 6 weeks after surgery to avoid bleeding. You may still have erections even with the catheter in place. When you resume sex, ejaculate flows back into the bladder, so you will express little or no semen.

URINATION
After your catheter is removed, you may experience some burning, stinging, or leakage for several weeks, and you may pass small blood clots occasionally. These symptoms will disappear as the area heals. It is best to use pads to control leakage.

WORK
If work is not strenuous you may return in 4 weeks; otherwise, wait 6 to 8 weeks.

PLEASE CALL IMMEDIATELY IF:
- You are unable to urinate.
- Bleeding is not controlled by fluids and rest, or is excessive.
- You have chills and fever or severe abdominal pain.
- Your scrotum becomes swollen and tender.
- You have pain in one calf, chest pain, or difficulty breathing.

creasing in incidence with age, with the majority of cases diagnosed in men older than 65 years. It is estimated that each year, more than 234,000 men will be diagnosed with prostate cancer, approximately 27,000 will die of it. Prostate cancer is a major health problem for older men, but the death rate is decreasing due to advances in diagnosis and treatment.

When diagnosed early, prostate cancer is curable. When the cancer is confined to the prostate at diagnosis, the 5-year survival rate is 100%. Even when the cancer has spread regionally, approximately 95% of clients are alive after 5 years. More than 75% of prostate cancer diagnoses are made at one of these stages (ACS, 2005b). Many men are found to have prostate cancer on autopsy; usually the cancer has produced no manifestations or complications.

Risk Factors

In addition to age, race is a significant risk factor for prostate cancer (see the Focus on Cultural Diversity box on this page). Other risk factors being investigated are as follows:
- Genetic and hereditary factors, with risk increased in men who have a family history of the disease
- Having a vasectomy, believed to increase the levels of circulating free testosterone
- Dietary factors, including a diet high in animal fat and excessive supplemental vitamin A.

Pathophysiology

The prostate gland consists primarily of glandular epithelial cells. The exact etiology of prostate cancer is unknown, although androgens are believed to have a role in its development. Almost all primary prostate cancers are adenocarcinomas, and they develop in the peripheral zones of the prostate gland. This location increases the risk of local spread to the prostatic capsule. Despite its proximity to the rectum, metastasis to the bowel is uncommon because a tough sheet of tissue, Denonvilliers' fascia, acts as an effective physical barrier.

As the tumor enlarges, it may compress the urethra, obstructing urinary flow. The tumor may metastasize and involve the seminal vesicles or bladder by direct extension. Metastasis by lymph and venous channels is common.

FOCUS ON CULTURAL DIVERSITY

Risk and Incidence of Prostate Cancer

- African Americans have the highest incidence of prostate cancer in the United States and the world, with rates more than twice as high as those of Caucasians.
- African Americans are more likely to be diagnosed later and to die of prostate cancer, with a mortality rate more than double that of other racial and ethnic groups.
- Asians and Native Americans have the lowest incidence of prostate cancer.

Manifestations

Men with early-stage prostate cancer are often asymptomatic. Pain from metastasis to bones is often the initial manifestation noted. Urinary manifestations depend on the size and location of the tumor and the stage of the malignancy. They are often much like manifestations of BPH: urgency, frequency, hesitancy, dysuria, and nocturia. The man may also notice hematuria or blood in the ejaculate (Porth, 2005). Manifestations of prostate cancer are summarized in the box on the next page.

MANIFESTATIONS of Prostate Cancer

Genitourinary
- Dysuria
- Frequency of urination
- Reduction in urinary stream
- Nocturia
- Hematuria
- Abnormal prostate on digital rectal examination

Musculoskeletal
- Bone or joint pain
- Migratory bone pain
- Back pain

Neurologic
- Nerve pain
- Bilateral lower extremity weakness
- Bowel or bladder dysfunction
- Muscle spasms

Systemic
- Weight loss
- Fatigue

Complications

Death usually occurs secondary to debility caused by multiple sites of skeletal metastasis, especially to the vertebrae. Compression fractures of the spine are common, resulting in the possible loss of mobility and bowel and bladder function. Tumors may eventually involve bone marrow, resulting in severe anemias and impaired immune function.

INTERDISCIPLINARY CARE

Care of the man with prostate cancer focuses on diagnosis, elimination or containment of the cancer, and prevention or treatment of complications. There are currently no clinical strategies to prevent the development of prostate cancer. Therefore, early detection remains the major emphasis for control of this disease.

Diagnosis

Although an increasing number of clients are now diagnosed with asymptomatic prostate cancer, many clients with prostate cancer have either locally advanced cancer or distant metastasis at the time of diagnosis. The definitive diagnosis can be made only by biopsy (prostate biopsy is discussed in Chapter 49 ∞); however, other tests may suggest the presence of prostate cancer.

A digital rectal examination (DRE) will find the prostate gland nodular and fixed in prostate cancer. Prostate-specific antigen (PSA) levels are used to diagnose and stage prostate cancer, and to monitor response to treatment. Levels depend on age, and there is no specific normal or abnormal level. An increase over time is more significant than one reading. The PSA test is used with a DRE to help detect prostate cancer in men age 50 or older, and is also used to monitor effects of treatment. Many physicians are using the following ranges (National Cancer Institute, 2004):
- 0 to 2.5 ng/mL is low.
- 2.6 to 10 ng/mL is slightly to moderately elevated.
- 10 to 19.9 ng/mL is moderately elevated.
- 20 ng/mL or more is significantly elevated.

Transrectal ultrasonography (TRUS) may be used when the DRE is abnormal or if the PSA is elevated. In this test, a small probe is inserted in the rectum. The probe gives off sound waves that make a picture of the prostate on a video screen. Guided by this picture, the physician inserts a narrow needle through the rectal wall into the prostate gland, and the needle removes a sample of tissue for examination. Other tests that may be ordered include a urinalysis or cystoscopy. Bone scan, MRI, or CT scans may be performed to determine the presence of tumor metastasis.

Grade and stage help to determine prognosis and guide treatment decisions. Grade (cancer cell differentiation) is determined by the pathologist. Prostate cancer is staged with a variety of tests. Table 50–3 outlines treatment options according to the stage of the cancer.

TABLE 50–3 **Prostate Cancer Staging and Treatment**

STAGE	DESCRIPTION	TREATMENT
I	Confined to prostate, nonpalpable, focal involvement; well differentiated	Observation and follow-up Interstitial or external-beam radiation therapy Prostatectomy
II	Confined to prostate, palpable, involves one or both lobes; poorly differentiated	Careful observation in selected clients Prostatectomy Interstitial or external-beam radiation therapy Ultrasound-guided percutaneous cryosurgery
III	Extension of the tumor outside the prostate capsule, possible seminal vesicle involvement	External-beam radiation therapy Interstitial radiation Radical prostatectomy Adjunctive hormone therapy Palliative surgery (TURP)
IV	Extension of the tumor into surrounding tissues; lymph node involvement or distant metastasis	Hormone therapy External-beam radiation therapy Palliative treatment with radiation therapy and/or TURP Radical prostatectomy with orchiectomy Chemotherapy

Research for Prevention

As reported by the American Society of Clinical Oncology (2005), findings from a study using toremifene (Acapodene) to treat men with abnormal prostate growth might help prevent the growths from becoming malignant. The drug, which blocks some of the effects of estrogen, had previously been used to treat advanced breast cancer in women. Men who have prostate intraepithelial neoplasia (PIN) have about a 30% chance of developing prostate cancer in 1 year and about a 65% chance within 2 years. A larger study is now in progress. In addition, other studies reported that men who took statins (to treat high cholesterol) were less likely to have prostate cancer.

Treatments

The treatment of prostate cancer is complex and depends on the grade and stage of the cancer as well as the age, general health, and preference of the client. In some cases, for example, when the client with a slow-growing tumor is elderly or has a limited life expectancy, watchful waiting is the treatment of choice. Treatments for prostate cancer include surgery, radiation therapy, and hormone manipulation.

SURGERY Surgery for prostate cancer includes several types of prostatectomies. For very early disease in older men, cure may be achieved with a simple prostatectomy (such as TURP), discussed in the section on benign prostate hyperplasia.

- *Radical prostatectomy* involves removal of the prostate, prostate capsule, seminal vesicles, and a portion of the bladder neck. Many clients experience varying degrees of urinary incontinence and ED. Refer to Table 50–4. A fairly new treatment is laparoscopic radical prostatectomy (LRP), in which small incisions are make in the abdomen and a laparoscope is inserted and used to remove the prostate. Some surgeons do this from an area other than the operating room by using a robotic interface. Nursing research reporting client satisfaction with a discharge program following a radical prostatectomy is discussed in the evidence-based practice feature on this page.
- *Retropubic prostatectomy* may be performed because it allows adequate control of bleeding, visualization of the prostate bed and bladder neck, and access to pelvic lymph nodes.
- *Perineal prostatectomy* is often preferred for older men or those who are poor surgical risks. This approach requires less time, and involves less bleeding.
- *Suprapubic prostatectomy* is rarely used, usually when problems with the bladder are expected. Control of bleeding is more difficult because the surgical approach is through the bladder.

TABLE 50–4 Potential Complications Related to Radical Prostatectomy and Radiation Therapy

RADICAL PROSTATECTOMY	RADIATION THERAPY
Erectile dysfunction	Erectile dysfunction*
Urethral stricture	Urethral stricture
Fistula/rectal injury	Rectal/anal stricture*
Urinary incontinence	Cystitis
Surgical/anesthetic risk	Diarrhea
	Proctitis
	Rectal ulcer
	Bowel obstruction*
	Urinary incontinence

**Delayed complications; may appear months or years after completion of therapy.*

NURSING RESEARCH **Evidence-Based Practice: Improve Discharge Teaching**

The period immediately after hospital discharge for a radical prostatectomy is one that is often a difficult time for men and their families as they cope with the emotional and physical demands of cancer surgery. Deficient knowledge about how long it will take to recover and how to provide care at home can have a major effect on healthy recovery from surgery. Nurses recognize the need to provide discharge teaching prior to hospital discharge, but this need is often not a part of actual practice. A study was conducted by Davison and colleagues (2004) to evaluate a revised program for discharge teaching after a radical prostatectomy for prostate cancer.

IMPLICATIONS FOR NURSING

The discharge teaching program being evaluated was developed based on a review of the literature. It consisted of a printed booklet of information about preoperative and postoperative radical prostate surgery, a patient education checklist, and a discharge bag containing a urinary leg bag, urinary collection bag, wound supplies, incontinence product samples, and a community resources brochure. The patients indicated that they read the entire booklet about surgery and that it helped prepare them for hospital care. Of the patients, almost half indicated catheter care as the most valuable type of information provided, but several of the patients felt even more information would have been useful. This type of information is extremely important as the number of patients having radical prostatectomy increases and hospital stays continue to be shortened. Nurses are now, and will continue to be, challenged to provide the type and amount of information needed for self-care at home.

CRITICAL THINKING IN CLIENT CARE

1. You are caring for a 75-year-old man who has had a radical prostatectomy for prostate cancer. His wife tells you they have always had an active sex life and she hopes this surgery will not change that. What would you say to her?
2. Why would the nursing diagnosis *Risk for Infection* be appropriate for a man providing self-care at home following a radical prostatectomy? What type of interventions would you suggest during discharge teaching to reduce this risk?
3. If you were developing a list of community resources for men following prostate surgery, what would you include? How would your list vary for the following situations?
   - A 64-year-old man with a wife and four married children who all live close
   - A 77-year-old man who lives alone and has no family
   - A 90-year-old man who will go to an assisted living facility after discharge from the hospital.

For clients with stage III, locally advanced (beyond the prostatic capsule) cancer, surgery is controversial because of the likelihood of hidden lymph node metastasis and relapse. TURP is not performed as curative therapy but may be used to relieve urinary obstruction for men with advanced disease (stage III or IV).

Surgical intervention is now available for men with urinary sphincter insufficiency, which is the major cause of incontinence after prostatectomy. An artificial urinary sphincter is surgically implanted (Figure 50–5 ■). To be eligible, the man must be able to manipulate the pump placed in the scrotum and have adequate cognitive function to know when a problem with the appliance occurs.

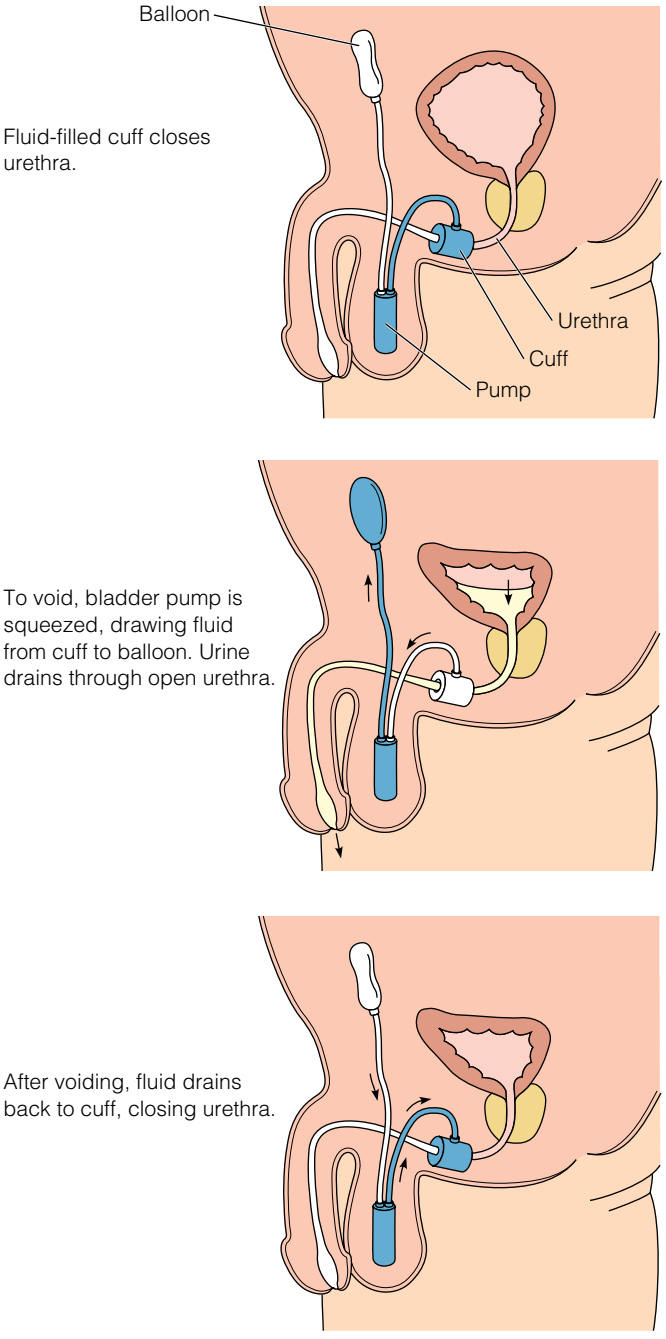


Figure 50–5 ■ Method of operation of an artificial urinary sphincter.

RADIATION THERAPY Radiation therapy may be used as a primary treatment for prostate cancer. Long-term problems of impotence and urinary incontinence may be avoided, and survival rates often are comparable. Radiation may be delivered either by external beam or interstitial implants of radioactive seeds of iodine, gold, palladium, or iridium (*brachytherapy*). Interstitial radiation has a lower risk of impotence and rectal damage than external-beam radiation. See Chapter 14 ∞ for nursing care of the client receiving radiation therapy.

Radiation therapy has a palliative role for clients with metastatic prostate cancer, reducing the size of bone metastasis, controlling pain, and restoring function, such as continence or the ability to ambulate for clients with spinal cord compression.

HORMONAL MANIPULATION Androgen deprivation therapy is used to treat advanced prostate cancer. Many cells in the growing tumor are androgen dependent and either cease to grow or die if deprived of androgens. Unfortunately, other cancer cells thrive without androgen and are unaffected by therapy to reduce circulating androgens. Therefore, the effects of hormone manipulations vary from complete but temporary regression of the tumor to no response at all. Strategies to induce androgen deprivation vary from orchiectomy to oral administration of hormonal agents. Table 50–5 compares surgical and hormone therapies and the advantages and disadvantages of each. In addition, new drugs are being developed that block the effects of male hormones, and research is being conducted to demonstrate what mix of hormones is best and at what time in the perioperative period they are most effective.

NURSING CARE

Nurses plan and provide interventions to help prevent prostate cancer and to facilitate a return to functional health status. Interventions may range from teaching to using knowledge and skill in physical care following a radical prostatectomy. A Nursing Care Plan for a man having a radical prostatectomy is found on page 1788.

Health Promotion

Nurses are in a unique position to increase public awareness about early detection of prostate cancer. Every encounter with men and their families—in clinics, hospital units, or in the home—is an opportunity to provide information about early detection and identify needs. Several studies have shown a positive correlation between increased awareness of and participation in prostate cancer screening procedures. The American Cancer Society has free pamphlets about early detection of prostate cancer, which are useful in educating the public.

One risk factor that can be easily changed is diet. Men should know that they can lower their risk of prostate cancer by eating less red meat and fat. They should include fruits and vegetables as recommended in the new food pyramid; toma-

TABLE 50–5 **Surgical and Hormone* Therapy in the Management of Advanced Prostate Cancer**

TREATMENT	ADVANTAGES	DISADVANTAGES
Orchiectomy	Inexpensive Immediate effect; i.e., men report diminished pain from metastasis in the recovery room	Body image problems due to loss of testicles
Estrogen compounds (diethylstilbestrol)	Inexpensive Effects reversible	Increased risk of cardiovascular problems More likely to cause gynecomastia, hypertrophy of breast tissue
Luteinizing hormone-releasing hormone agonist (LHRH) (leuprolide)	Effects reversible No cardiovascular risk Monthly administration	Very expensive Subcutaneous injection route Slow onset: up to 4 weeks
Steroidal antiandrogens (megestrol [Megace])	Effects reversible No cardiovascular risk Inexpensive	May not drop testosterone levels sufficiently Weight gain
Nonsteroidal antiandrogens (flutamide; often used in conjunction with LHRH)	Does not alter circulating androgens Blocks some side effects of LHRH May be effective if other methods fail	Very expensive

*All hormonal manipulations have the potential disadvantage of loss of libido, erectile dysfunction, hot flashes, and gynecomastia.

toes, pink grapefruit, and watermelon are high in lycopenes that help prevent damage to DNA and may help lower prostate cancer risk. Other substances that may help lower the risk are vitamin E and selenium.

All men should be given information about the limitations and benefits of testing for early detection and of treatment so they can make an informed decision. The American Cancer Society (2005a) recommends that the PSA test and DRE should be offered each year, beginning at age 50, to all men with a life expectancy of at least 10 years. Men at high risk (men of African descent and those with a first-degree relative diagnosed at a younger age) should begin testing at age 45.

Assessment

Collect the following data through the health history and physical examination (see Chapter 49 ∞). Note that a digital rectal examination is an advanced nursing assessment.

- *Health history:* Risk factors, urinary elimination patterns and manifestations, hematuria, pain.
- *Physical assessment:* DRE to assess prostate size, symmetry, firmness, and nodules.

Nursing Diagnoses and Interventions

The nursing care of men with prostate cancer must be holistic, sensitive, and individualized. The nursing diagnoses discussed for the man with BPH may also be appropriate. This section focuses on problems with urinary incontinence, sexual function, and pain.

Urinary Incontinence (Reflex, Stress, Total)

Urinary incontinence is a disturbing complication following treatment for prostate cancer. Both radical prostatectomy and external-beam radiation therapy can cause incontinence, ranging from a drop or two when the client lifts a heavy object (*stress incontinence*) to no control at all. Older men may experience *urge incontinence*, the involuntary passage of urine soon after a strong sense of urgency to void. Total and unpredictable loss of urine is classified as total incontinence. The man's reaction to incontinence may be severe even if the incontinence is not great. Many men have significant anxiety at the prospect of an incontinent episode in public, because they feel shame and often guilt about the loss of control.

- Assess the degree of incontinence and its effects on lifestyle. *The nurse needs to determine previous urinary patterns and the type of incontinence currently being experienced to plan appropriate interventions.*
- Teach Kegel exercises to help restore continence. *Pelvic muscle or Kegel exercises can often either eliminate or improve stress incontinence.*
- Teach methods to control dampness and odor from stress incontinence:
  - Do not attempt to prevent accidental voiding by restricting fluids. *Not only will the man continue to have incontinent episodes, but also his urine will become concentrated, exacerbating the problem with odor.*
  - Manage occasional episodes (one to three small-volume accidents per day) with absorbent pads worn inside the underwear and changed as needed. Most pads are made with a polymer gel that controls odor. *Appropriate measures help promote good hygiene, decrease anxiety, and increase comfort.*
- Refer to physical therapy or a continence specialist for additional measures to promote continence. *Special exercises, restricting some types of fluids, and other measures such as bladder training can help the client deal with incontinence.*
- Explore options such as an external collection device (external catheter or Texas catheter) for the man with total incontinence. *This device may improve the man's self-esteem and allow resumption of social activities.*
- Encourage verbalizing feelings about the impact of incontinence on quality of life. *The degree of incontinence does not necessarily correlate with the perceived level of suffering.*

MEDIALINK Care Plan Activity: Radical Prostatectomy

NURSING CARE PLAN A Man with Prostate Cancer

William Turner, a 71-year-old African American, lives with his wife in a small retirement community in Florida. His wife had a stroke 2 years ago, and Mr. Turner does all the cooking and housework. He has been in good health for most of his life, having only "a small touch" of osteoarthritis in his knees and hands. He has noticed a gradual onset of urinary urgency and frequency over the past 2 years, but has never had incontinence. During a routine checkup, the nurse practitioner at the local health clinic performs a digital rectal examination and palpates a hard nodule on the surface of Mr. Turner's prostate. After his PSA is found to be elevated, he is referred to a urologist, who diagnoses prostate cancer. Mr. Turner chooses to have surgery, and a radical retropubic prostatectomy and lymph node dissection are performed. The lymph nodes are negative for metastasis. Following surgery, his recovery is uncomplicated. However, the nurse caring for Mr. Turner is concerned about his ability to care for his indwelling catheter because of his arthritis and his wife's physical disabilities from the stroke. The nurse makes a referral to a home health agency to ensure Mr. Turner can manage his care at home. An initial home health assessment is scheduled for the day after Mr. Turner is discharged from the hospital.

ASSESSMENT

The home health nurse notes that the house is clean and neat. Mr. Turner is dressed, but still wearing his night urinary drainage bag, even though it is 1300. Mr. Turner tells the nurse that his main problem is going to get groceries, because he is embarrassed to be seen with the drainage bag. He says he has not been able to remove the drainage bag and attach the leg bag because of his arthritis. Physical assessment findings include the pelvic incision to be healing without signs of infection. There is no tenderness in his calves, chest pain, or shortness of breath. The urine is yellow, without odor. Mr. Turner does state that he sees no need for the pelvic exercises since he is no longer in the hospital. He also expresses the belief that he is cured of cancer and questions the need for follow-up care.

DIAGNOSES

- *Risk for stress urinary incontinence* related to surgical procedure
- *Ineffective health maintenance* related to inability to care for the urinary drainage system, not understanding need for postoperative exercises, and questions about follow-up care

EXPECTED OUTCOMES

- Regain urinary continence after catheter removal.
- Change the urinary drainage bag with the appropriate assistance.
- Verbalize the rationale for performing postoperative exercise.
- Verbalize the need for continued follow-up care.

PLANNING AND IMPLEMENTATION

- Discuss the possibility of stress incontinence after the catheter is removed.
- Reinforce the need for Kegel exercises while the catheter is still in place.
- Explore Mr. Turner's support system to identify people who could assist him with catheter care and arrange a teaching session with them.
- Teach Mr. Turner the importance of follow-up care, relating the care to the history of the disease.

EVALUATION

Good friends from Mr. Turner's church have assisted him with care of his drainage bag, and have reminded him to do his Kegel exercises several times a day while the catheter is in place. When the catheter is removed, Mr. Turner has only a small amount of leaking of urine after voiding. He understands that it may take several weeks for this to resolve. Efforts to help him understand the need for continued medical care are less successful. Mr. Turner continues to state that he is cured, his wife needs him, and he sees no need to go back to the doctor.

CRITICAL THINKING IN THE NURSING PROCESS

1. Outline a teaching plan for Mr. Turner for the risk for altered skin integrity related to urinary incontinence.
2. As a result of Mr. Turner's refusal to have ongoing medical-care, he might be labeled as noncompliant. Would you make this nursing diagnosis? Why or why not?
3. If you were the home health nurse making a home visit and found that Mr. Turner had no urinary drainage for 16 hours, what assessments would you make? How would you handle this problem?

See Evaluating Your Response in Appendix C.

Listening to these concerns with sensitivity can help the man work through these feelings and may allow him to move toward a healthy adaptation to his disability.

Sexual Dysfunction

Surgical treatment for prostate cancer may cause ED and changes in ejaculatory function. Hormone therapy for advanced prostate cancer lowers libido and may also cause ED. The diagnosis of cancer and body image changes caused by hormone therapy may lower self-esteem, which in turn can diminish sexual desire and willingness to interact sexually with a partner. Most older men are active sexually and fully capable of sustaining an erection. They are likely to fear the effect of treatment on their sexual health. They may allow this concern to guide their decision about the treatment course, or they may refuse all therapy because of this fear. Reactions vary greatly, and the nurse must maintain a nonjudgmental approach to education and support.

- Assess the man's pretreatment sexual function. *Knowledge of previous sexual function is necessary to plan appropriate interventions.*
- Teach the man about the actual or potential effects of therapy on sexual function. *The incidence of ED varies with different therapies for prostate cancer.*
- Provide an opportunity for the man and his partner to discuss implications of and concerns about the diagnosis and treatment of sexual function. *The treatments for prostate cancer often affect the physiology of erection. The man and his partner need support and counseling during the period of adjustment.*

- Discuss medical and surgical treatments for ED (see first section of this chapter). *Many men are as devastated by the loss of erectile function as they are by the diagnosis of cancer. Information about achieving erection and maintaining sexual intimacy is essential to quality of life.*
- Refer for sexual counseling as appropriate. *The man and his partner may require therapy beyond that provided by nurses.*

PRACTICE ALERT

A therapeutic approach to assessing how the man feels is to use an opening statement such as "Some men are very concerned about the effects of (type of treatment) on their ability to have an erection. Tell me how you feel about it."

Acute/Chronic Pain

There are many causes of pain in men with advanced prostate cancer. It is not unusual for a client to have three or four distinct pains simultaneously, all from different sources. The most common cause of pain is metastasis to the spinal column, usually the thoracic spine. Other sources of pain include fractures, lymphedema of the lower extremities, and muscle spasms. Because most men with prostate cancer are over the age of 65, many also have pain associated with preexisting conditions, such as osteoarthritis, unrelated to the cancer.

- Assess the intensity, location, and quality of the pain. *A cardinal rule of successful pain management is the importance of reducing or eliminating the cause of pain. Appropriate interventions are based on a careful assessment of the client's pain.*
- Provide optimal pain relief with prescribed analgesics. *It is important that the man and his family understand that pain medications should be used on a regular basis to maintain comfort and should not be delayed until pain is severe.*
- Teach the man and his family noninvasive methods of pain control. *Various modalities can be successful in alleviating pain or reducing its perception, thus enhancing the comfort of the client (*see Chapter 9*).*

Using NANDA, NIC, and NOC

Chart 50–1 shows links between NANDA nursing diagnoses, NIC, and NOC when caring for the client with surgical treatment for prostate cancer.

Community-Based Care

Depending on the type of treatment, the following topics should be addressed in preparing the client and his family for home care:

- For the man having a surgical procedure: manifestations of infection and excessive bleeding, catheter care, wound care pain management
- For the man receiving radiation therapy:
  - Danger of radiation damage to others (sleep in a room alone for a week, avoid close contact with pregnant women, infants, and children)
  - Condom use during sexual contact (ejaculate may be discolored, distressing sexual partner)
- The importance of keeping appointments with healthcare providers and having yearly PSA and rectal examinations
- If appropriate, community services, such as support groups, home health nurses, and hospice
- Helpful resources:
  - American Cancer Society
  - American Urological Association
  - National Cancer Institute.

NANDA, NIC, AND NOC LINKAGES

CHART 50–1 The Client Having Surgery for Prostate Cancer

NANDA

Impaired Urinary Elimination

↓

NIC

Urinary Elimination Management

Bladder Irrigation

Fluid Management

Pain Management

Tube Care: Urinary

Infection Control

↓

NOC

Urinary Elimination

Pain Level

Risk Control

Data from *NANDA's Nursing Diagnoses: Definitions & classification 2005–2006* by NANDA International (2003), Philadelphia; *Nursing Interventions Classification (NIC)* (4th ed.) by J. M. Dochterman & G. M. Bulecheck (2004), St. Louis, MO: Mosby; and *Nursing Outcomes Classification (NOC)* (3rd ed.) by S. Moorhead, M. Johnson, and M. Maas (2004), St. Louis, MO: Mosby.

MALE BREAST DISORDERS

THE MAN WITH GYNECOMASTIA

Gynecomastia, the abnormal enlargement of the male breast, is thought to result from a high ratio of estradiol to testosterone. It is common during puberty, affecting one breast in as many as 50% of adolescent males, but usually resolves within 1 to 2 years. Any condition that increases estrogen activity or decreases testosterone production can contribute to gynecomastia. Conditions that increase estrogen activity include obesity,

testicular tumors, liver disease, and adrenal carcinoma; conditions that decrease testosterone production include chronic illness such as tuberculosis or Hodgkin's disease, injury, and orchitis. Drugs such as digitalis, opiates, and chemotherapeutic agents are also associated with gynecomastia. Gynecomastia after adolescence is usually bilateral. If it is unilateral, biopsy may be necessary to rule out breast cancer.

No treatment is necessary for the transient gynecomastia of puberty. If the condition becomes chronic, however, creating psychologic discomfort, surgery may be necessary to remove the subcutaneous breast tissue. When related to an underlying disorder, treatment of that disorder is required. In severe cases, tamoxifen is given to decrease estrogen activity.

Nursing care for the client with gynecomastia includes education about the cause and treatment of the condition, and emotional support for the psychosocial implications of this feminizing condition.

THE MAN WITH BREAST CANCER

Although male breast cancer is rare, accounting for about 1% of all breast cancer cases, it is as serious to the men who have it as it is to the women. About 1700 men in the United States are estimated to be diagnosed with breast cancer each year, accounting for more than 400 deaths (ACS, 2005a). The etiology of male breast cancer is unclear; hormonal, genetic, and perhaps environmental factors appear to be important.

Male breast cancer is clinically and histologically similar to female breast cancer, although lobular cancer is rare in males. Most tumors are estrogen-receptor positive. Because many men believe that breast cancer is only a woman's disease, they often delay seeking medical attention for symptoms and thus may present with advanced disease.

Treatment of male breast cancer is much like the treatment of female breast cancer, beginning with modified radical mastectomy, node dissection, and staging to determine the therapeutic options. Radiation, chemotherapy, and hormonal therapy (usually tamoxifen) are the conventional adjuncts to surgery. Castration (surgical removal of the testes) is the most successful palliative measure in men with advanced breast cancer, resulting in tumor regression and prolonging life.

Nursing care for the man with breast cancer is essentially the same as for the woman with breast cancer (see Chapter 51 ∞). The nurse has an opportunity to help the man and his family cope with the psychosocial effects of having breast cancer. He may feel embarrassment or shame about his condition as well as fear about the life-threatening nature of the disease. His family may share those feelings. By listening with understanding and empathy, the nurse can help the client and family resolve their feelings and move toward healing.

EXPLORE MEDIALINK

Prentice Hall Nursing MediaLink DVD-ROM

Audio Glossary
NCLEX-RN® Review

Animation/Video

Testicular Self-Examination

COMPANION WEBSITE www.prenhall.com/lemone

Audio Glossary
NCLEX-RN® Review
Care Plan Activity: Radical Prostatectomy
Case Studies
- *Benign Prostatic Hyperplasia*
- *Prostatitis*

Teaching Plan: ED Medication and Safety
MediaLink Applications
- *Prostate Cancer Prevention*
- *Sleep Apnea and Erectile Dysfunction*

Links to Resources

CHAPTER HIGHLIGHTS

- Disorders of male sexual function include erectile dysfunction (ED) and ejaculatory dysfunction. Many different illnesses, medications, and surgical procedures may affect male sexual function. Treatments include medications, mechanical devices, and surgical procedures. It is important for nurses to initiate a discussion of sexual concerns during assessments and to recognize that many male reproductive treatments and surgeries may result in sexual dysfunction.
- Phimosis and priapism are disorders of the penis that can cause problems with urination and sexual activity and may in some cases

be considered medical emergencies. The risk of cancer of the penis, although rare, is increased by phimosis, poor genital hygiene, and viral HPV and HIV infections.

- Benign scrotal masses include hydrocele, spermatocele, and varicocele. Epididymitis may be associated with a urinary tract infection, prostatitis, urethral strictures, or a sexually transmitted infection.
- The testes may be infected (orchitis), twisted (testicular torsion), or develop cancer. Testicular cancer is the most common cancer in men between the ages of 15 and 40. Monthly testicular self-examination is critical to early detection and treatment of cancer.
- The prostate gland may be inflamed or infected (prostatitis), enlarged (benign prostatic hyperplasia [BPH]) or develop cancer. BPH is a common disorder of the aging male that causes problems with urination as the enlarging prostate gland constricts the urethra. Treatments include medications and various types of surgery, depending on the size of the prostate, and the age and health status of the man.
- Cancer of the prostate is the most common type of cancer and the second leading cause of death in American men. When diagnosed early, prostate cancer is curable. Diagnosis is often based on an increasing level of PSA and an abnormal DRE. The cancer is treated with surgery, radiation, or hormonal manipulation.
- The male breast may become enlarged (gynecomastia) or develop cancer.

TEST YOURSELF NCLEX-RN® REVIEW

1 When conducting a health assessment, which of the following statements would most likely elicit information about sexual concerns?
   1. "Following your prostate surgery, when did you first notice you had problems with sexual intercourse?"
   2. "Why do you think you should be sexually active at your age?"
   3. "Do you miss having sex?"
   4. "Tell me about your experience with sexual function since you developed prostate enlargement."

2 You are conducting a health teaching session for young men. What topic would be appropriate to reduce the risk of cancer of the penis?
   1. wearing a condom during sexual intercourse
   2. retracting the foreskin of the penis when showering
   3. avoiding tight pants and very hot showers
   4. maintaining a regular testicular self-examination schedule

3 What disease of the male reproductive system is a risk if a man also has a sexually transmitted infection (gonorrhea)?
   1. epididymitis
   2. hydrocele
   3. erectile dysfunction
   4. gynecomastia

4 Which of the following statements is true of testicular cancer?
   1. The incidence increases with age.
   2. It occurs most between ages 15 and 40.
   3. It rarely occurs in brothers.
   4. Severe pain is the initial manifestation.

5 You are teaching a man with chronic prostatitis how to care for himself at home. What simple measures can be used to decrease discomfort?
   1. Take cold showers and restrict oral fluids.
   2. Wear a scrotal support and take anti-inflammatory drugs.
   3. Increase oral fluid intake to 3 L/day and void often.
   4. Increase fiber intake and avoid sexual activity.

6 What diagnostic tests are used to differentiate BPH from prostate cancer? (Choose all that apply.)
   1. pelvic ultrasound
   2. digital rectal examination
   3. blood chemistry
   4. PSA level
   5. sperm count

7 The enlarging prostate in BPH typically is manifested by assessment of problems with:
   1. bowel elimination.
   2. urinary elimination.
   3. peripheral vascular function.
   4. skin integrity.

8 You are caring for a man who has returned to the unit from the recovery room following a TURP. His urinary drainage bag is filled with dark red fluid with obvious clots. He is having painful bladder spasms. What would you do first?
   1. Assess his intake and output since surgery.
   2. Administer pain medication in the form of a B&O suppository.
   3. Report your assessments to his urologist.
   4. Nothing, because these manifestations are expected following a TURP.

9 What cancer is the most common malignancy in American men?
   1. prostate cancer
   2. testicular cancer
   3. lung cancer
   4. colon cancer

10 What nutritional information should be included in a community program to reduce the risk of prostate cancer?
   1. Increase fiber intake.
   2. Decrease lycopene intake.
   3. Avoid foods high in sodium.
   4. Decrease red meat and fat intake.

See Test Yourself answers in Appendix C.

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