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DISORDERS OF THE PROSTATE GLAND

BENIGN PROSTATIC HYPERPLASIA

This is the increase in the number if cells in the glandular unit present in the prostate resulting to the enlargement of the prostate gland but is not cancerous.

Etiology: idiopathic but some risk factors includes

* age 40 years and older
* family history of benign prostatic hyperplasia
* medical conditions such as obesity, heart and circulatory disease, and type 2 diabetes
* lack of physical exercise
* erectile dysfunction

**Symptoms:** urinary frequency, urinary urgency, hypertrophied bladder wall muscles, cellules and diverticular, hydroureter, hydronephrosis, the accidental loss of urine, pain after ejaculation or during urination, urine that has an unusual color or smell and nocturia.

**Complication:** bladder damage, kidney damage, bladder stones

MEDICAL MANAGEMENT AND TREATMENT

Treatment options for benign prostatic hyperplasia may include

* lifestyle changes
* medications
* minimally invasive procedures
* surgery

### **Lifestyle changes**: these include

* reducing intake of liquids, particularly before going out in public or before periods of sleep
* avoiding or reducing intake of caffeinated beverages and alcohol
* avoiding or monitoring the use of medications such as decongestants, antihistamines, antidepressants, and diuretics
* training the bladder to hold more urine for longer periods
* exercising pelvic floor muscles
* preventing or treating constipation

Medication

**Alpha blockers**: These medications relax the smooth muscles of the prostate and bladder neck to improve urine flow and reduce bladder blockage eg: terazosin (Hytrin)doxazosin (Cardura)tamsulosin (Flomax)alfuzosin (Uroxatral)silodosin (Rapaflo).

**Phosphodiesterase-5 inhibitors**: Urologists prescribe these medications mainly for erectile dysfunction. Tadalafil (Cialis) belongs to this class of medications and can reduce lower urinary tract symptoms by relaxing smooth muscles in the lower urinary tract.

**5-alpha reductase inhibitors**: These medications block the production of DHT, which accumulates in the prostate and may cause prostate growth e.g. inasteride (Proscar)dutasteride (Avodart)

Minimally invasive procedures

These procedures include:

**Transurethral needle ablation**: his procedure uses heat generated by radiofrequency energy to destroy prostate tissue. A urologist inserts a cystoscope through the urethra to the prostate. A urologist then inserts small needles through the end of the cystoscope into the prostate. The needles send radiofrequency energy that heats and destroys selected portions of prostate tissue. Shields protect the urethra from heat damage.

**Transurethral microwave thermotherapy**: This procedure uses microwaves to destroy prostate tissue. A urologist inserts a catheter through the urethra to the prostate, and a device called an antenna sends microwaves through the catheter to heat selected portions of the prostate. The temperature becomes high enough inside the prostate to destroy enlarged tissue. A cooling system protects the urinary tract from heat damage during the procedure.

**High-intensity focused ultrasound:** For this procedure, a urologist inserts a special ultrasound probe into the rectum, near the prostate. Ultrasound waves from the probe heat and destroy enlarged prostate tissue.

**Transurethral electro vaporization**: For this procedure, a urologist inserts a tube-like instrument called a resectoscope through the urethra to reach the prostate. An electrode attached to the resectoscope moves across the surface of the prostate and transmits an electric current that vaporizes prostate tissue.

**Surgery**

Surgery to remove enlarged prostate tissue includes:

**Transurethral resection of the prostate (TURP):** With TURP, a urologist inserts a resectoscope through the urethra to reach the prostate and cuts pieces of enlarged prostate tissue with a wire loop. Special fluid carries the tissue pieces into the bladder, and the urologist flushes them out at the end of the procedure. TURP is the most common surgery for benign prostatic hyperplasia and considered the gold standard for treating blockage of the urethra due to benign prostatic hyperplasia.

**Laser surgery:** With this surgery, a urologist uses a high-energy laser to destroy prostate tissue. The urologist uses a cystoscope to pass a laser fiber through the urethra into the prostate. The laser destroys the enlarged tissue. The risk of bleeding is lower than in TURP and TUIP because the laser seals blood vessels as it cuts through the prostate tissue. However, laser surgery may not effectively treat greatly enlarged prostates.

**Open prostatectomy**: n an open prostatectomy, a urologist makes an incision, or cut, through the skin to reach the prostate. The urologist can remove all or part of the prostate through the incision. This surgery is used most often when the prostate is greatly enlarged, complications occur, or the bladder is damaged and needs repair. Open prostatectomy requires general anesthesia, a longer hospital stay than other surgical procedures for benign prostatic hyperplasia, and a longer rehabilitation period. The three open prostatectomy procedures are retropubic prostatectomy, suprapubic prostatectomy, and perineal prostatectomy. The recovery period for open prostatectomy is different for each man who undergoes the procedure.

NURSING CARE AND HEALTH EDUCATION

* **Reduce anxiety.** The nurse should familiarize the patient with the preoperative and postoperative routines and initiate measures to reduce anxiety.
* **Relieve discomfort.** Bed rest and analgesics are prescribed if a patient experiences discomfort.
* **Provide instruction.** Before the surgery, the nurse reviews with the patient the anatomy of the affected structures and their function in relation to the urinary and reproductive systems.
* **Maintain fluid balance.** Fluid balance should be restored to normal.

 The patient and the family require instructions about how to promote recovery.

* **Instructions.** The nurse provides written and oral instructions about the need to monitor urinary output and strategies to prevent complications.
* **Urinary control.** The nurse should teach the patient exercises to regain urinary control.
* **Avoid Valsalva maneuver.** The patient should avoid activities that produce Valsalva maneuver like straining and heavy lifting.
* **Avoid bladder discomfort.** The patient should be taught to avoid spicy foods, alcohol, and coffee.
* **Increase fluids.** The nurse should instruct the patient to drink enough fluids.

PROSTATITIS

Prostatitis is sometimes an infection of the prostate, but it can also be an inflammation (swelling) with no sign of infection. There are 4 types of prostatitis:

* Chronic Prostatitis/Chronic Pelvic Pain Syndrome (CP/CPPS)
* Chronic Bacterial Prostatitis
* Acute (Sudden) Bacterial Prostatitis
* Asymptomatic Inflammatory Prostatitis

ACUTE BACTERIAL PROSTATITIS

**Etiology**: it is usually caused by aerobic gram-negative rods (E-coli and Pseudomonas aeruginosa).

**Possible routes of infection:** ascent of urethra, reflux of infected urine into prostatic ducts that empty into the posterior urethra.

**Signs**: moderate or high-grade fever, rectal palpitation (tender, swollen).

**Symptoms**: acute febrile characterized by chills, low back and perineal pain, urinary urgency and frequency, nocturia, dysuria, myalgia

**Complications**: Prostate abscess, acute bacterial cystitis, acute pyelonephritis.

**Medical treatment**: Antibiotics for at least 14 days; -fluoroquinolone, ciprofloxacin.

CHRONIC BACTERIAL PROSTATITIS

Chronic bacterial prostatitis is an uncommon type of bacterial prostatitis. This requires a urine and prostate fluid culture to verify this as present. As the name implies it is known to come and go over a long period of time.

**Possible routes of infection:** ascent of urethra, reflux of infected urine into prostatic ducts that empty into the posterior urethra

**S/S**: A burning feeling while passing urine, pain in the bladder, testicles and penis, and between the sex organs and anus, pain with ejaculation, nocturia, painful ejaculation, urinary retention

**Complications:** bladder outlet obstruction, relapsing recurrent UTI.

**Medical treatment**: a low dose of antibiotics for up to 6 months to prevent recurrent infection and alpha blockers, anti-inflammatory agents (indomethacin, ibuprofen). Surgery might be mandatory to treat urinary retention caused by chronic bacterial prostatitis. Surgically removing scar tissue in the urethra often improves urine flow and reduces urinary retention.

CHRONIC PROSTATITIS/CHRONIC PELVIC PAIN SYNDROME.

CPPS is the most common type of prostatitis. It is an inflammation of the prostate and an irritation of the nerves which supply this area.

**Etiology: Idiopathic.**

**Symptoms:** Trouble passing urine (and sometimes with pain), pain in the bladder, testicles and penis, and between these and the anus**,** trouble and pain with ejaculation.

**Medical treatment:** -alpha reductase inhibitors such as finasteride (Proscar) and dutasteride (Avodart), nonsteroidal anti-inflammatory drugs—also called NSAIDs—such as aspirin, ibuprofen, and naproxen sodium, glycosaminoglycan, cans such as chondroitin sulfate, muscle relaxants such as cyclobenzaprine (Amrix, Flexeril) and clonazepam (Klonopin), neuromodulators such as amitriptyline, nortriptyline (Aventyl, Pamelor), and pregabalin (Lyrica). Alternative treatments may include; warm baths, called sitz baths, local heat therapy with hot water bottles or heating pads, physical therapy, such as-Kegel exercises—tightening and relaxing the muscles that hold urine in the bladder and hold the bladder in its proper position. Also called pelvic muscle exercises, myofascial release—pressing and stretching, sometimes with cooling and warming, of the muscles and soft tissues in the lower back, pelvic region, and upper legs. Also known as myofascial trigger point release.

ASYMPTOMATIC INFLAMMATORY PROSTATITIS

**Symptomatic inflammatory prostatitis** is a painless inflammation of the prostate gland where there is no evidence of infection.

**Etiology**: idiopathic

**Symptoms:** no history of genitourinary pain complaints, but leukocytosis noted, usually during evaluation for other conditions.

**Medical treatment:** treatment is based on the primary reason for the urologic evaluation.

NURSING CARE AND HEALTH EDUCATION

Nursing management includes accessing the patient’s condition.

Administration of prescribed antibiotics and provision of comfort measures, including prescribed analgesics agents and sitz bath.

Recognizing recurrent signs and symptoms of prostatitis.

Outpatient teaching to continue antibiotic therapy and increase fluid intake.

Educating patient on self-management measures, lifestyle changes and rendering appropriate, psychological and emotional support.

PROSTATE CANCER

Prostate cancer is cancer that occurs in the prostate. Prostate cancer is one of the most common types of cancer in men. Usually prostate cancer grows slowly and is initially confined to the prostate gland, where it may not cause serious harm. However, while some types of prostate cancer grow slowly and may need minimal or even no treatment, other types are aggressive and can spread quickly.

ETIOLOGY

 No one knows exactly what causes prostate cancer, but risk factors associated with it include:

1. **Age.** Your risk of prostate cancer increases as you age. Men age 50 and older run a greater risk
2. **Race.** For reasons not yet determined, black men carry a greater risk of prostate cancer than do men of other races. In black men, prostate cancer is also more likely to be aggressive or advanced.
3. **Family history.** If men in your family have had prostate cancer, your risk may be increased. Also, if you have a family history of genes that increase the risk of breast cancer (BRCA1 or BRCA2) or a very strong family history of breast cancer, your risk of prostate cancer may be higher.
4. **Obesity.** Obese men diagnosed with prostate cancer may be more likely to have advanced disease that's more difficult to treat.

 **Symptoms:** Trouble urinating**,** decreased force in the stream of urine**,** blood in semen, hematuria, discomfort in the pelvic area**,** bone pain**,** erectile dysfunction, painful ejaculation.

**Prevention:** Choose a healthy diet full of fruits and vegetables, choose healthy foods over supplements, exercise most days of the week, maintain a healthy weight and talk to your doctor about increased risk of prostate cancer.

MEDICAL MANAGEMENT AND TREATMENT

Treatment choices for prostate cancer include

**Active surveillance**: This does not actively treat prostate cancer. It monitors the cancer growth with regular PSA tests, DREs and periodic biopsies. A schedule for tests will be set with your provider. To help your provider do these biopsies, a multiparametric magnetic resonance imaging (pmMRI) exam might be done. With active surveillance, your doctor will know very quickly if the cancer grows. If that happens, then he/she will suggest next steps for you. At that point, radiation and surgery may be the best treatment options.

**Robotic Assisted Laparoscopic Radical Prostatectomy (RALP):** Robotic Assisted Laparoscopic Radical Prostatectomy (RALP) is the most common type of prostate cancer surgery done today. The surgeon is assisted with a robotic system that holds and guides the laparoscopic surgical tools and camera. It also allows the prostate to be removed through tiny ports placed in your belly. In experienced hands, RALP and retropubic prostatectomy have similar outcomes. There is also less blood loss with robotic surgery than other methods. The success of this surgery depends on how experienced your surgeon is. The more surgeries your doctor has done, the better he/she will be at this surgery.

**Hormonal therapy**: is also known as androgen deprivation therapy (ADT). It uses drugs to block or lower testosterone and other male sex hormones that fuel cancer. ADT essentially starves prostate cancer cells of testosterone. ADT is used to slow cancer growth in cancers that are advanced or have come back after initial local aggressive therapy. It is also used for a short time during and after radiation therapy.

Hormone therapy is done surgically or with medication:

**Surgery:** Removes the testicles and glands that produce testosterone with a procedure called an orchiectomy.

**Medication:** There are a variety of medications used for ADT. There are two types that are used at first. One is the injection of luteinizing hormone releasing hormone (LH-RHs) inhibitors. These are also called either agonists or antagonists. They suppress the body's natural ability to turn on testosterone production. A second type (which is often given with the first type) are called non-steroidal anti-androgens. These pills block testosterone from working.

NURSING CARE AND HEALTH EDUCATION

**Nursing care in the pretreatment period:** During the preoperative period, when patients must come to terms with the indication for prostatectomy, nurses should encourage them to express their feelings and allow an exchange of information facilitating the planning of a high-quality nursing intervention. The information offered by nurses in the preoperative period is usually related to routine surgical procedures, such as skin preparation, fasting, time of surgery, and use of bladder catheters as the quality of information increases patients’ involvement in treatment.

**Nursing care in the posttreatment period:** Nurses assistance is seen as fundamental to minimize patients’ negative experiences. Post-prostatectomy nursing care includes general activities, such as urinary catheter care, infection prevention, and the provision of appropriate nutrition and hydration; postoperative activities, such as hygiene and surgical wound care; monitoring of medication administration; and education in the signs and symptoms of postoperative complications, pelvic-floor muscle exercises, and pain control.

The provision of information about the importance of water intake and catheter care after surgery is indispensable to prevent urinary tract infection and essential in association with UI interventions, as these problems cause physical and emotional distress that may delay recovery. Nursing care must also address less common problems, such as hyponatremia: recognition of the signs, symptoms, and physiopathology of this condition, and the necessity of treatment (unlike chronic hyponatremia, postoperative hyponatremia must be treated) and means of prevention (eg, replacement of normal saline irrigation as soon as possible, as excessive irrigation after prostatectomy can cause hyponatremia) are necessary. In the context of hospital discharge, effective interaction between nurses and patients can establish contacts facilitating the detection of problems and implementation of appropriate educational interventions. This care can facilitate the resolution of patients’ problems. Nurses can play important roles in implementing educational strategies designed to improve knowledge about PCa and its treatment, posttreatment monitoring, offering advice on the management of complications, and providing psychosocial support for patients and their families. Nursing care should be based on an individualized understanding of the situations of patients with PCa and their families. In practice, nurses should pay attention to the feelings and needs of family members of men undergoing PCa treatment; a patient’s illness may affect the health of his entire family.