



BENIGN PROSTATE HYPERTROPHY

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INTRODUCTION



- Benign prostatic hypertrophy / Benign prostatic hyperplasia (BPH) is one of the most common diseases in aging men.
- Enlargement, or hypertrophy, of the prostate gland.
- Prostate gland enlarges, extending upward into the bladder and obstructing the outflow of urine.
- Cause is not well understood, but evidence suggests hormonal involvement.
- Common in men older than 40 years.
- Cause lower urinary tract symptoms

DEFINITION



It is defined as, “ noncancerous increase in size of prostate gland which involves hyperplasia of prostatic stromal and epithelial cell resulting in formation of large, fairly discrete nodules in transitional zone of prostate, which push on and narrow the urethra resulting in an increase resistance to flow of urine from the bladder.”

DEFINITION



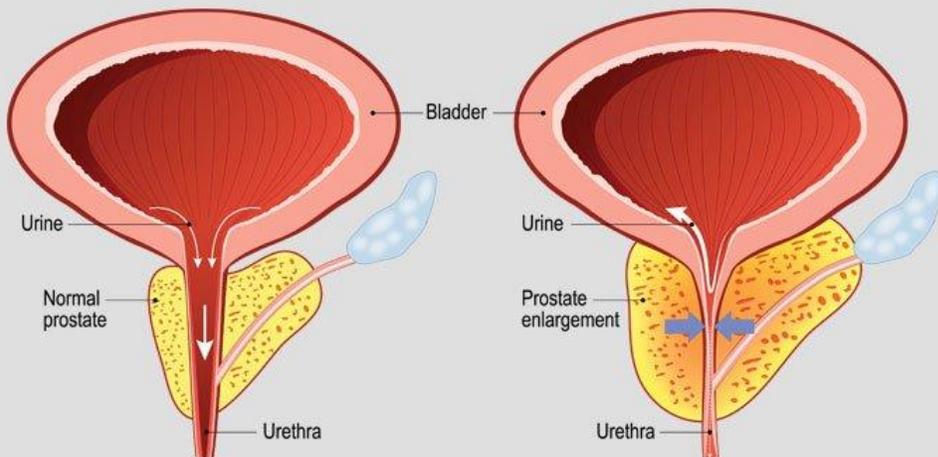
Non cancerous increase in size of prostate gland



Which involves hyperplasia of prostatic stromal and epithelial cell



Resulting in formation of large, fairly discrete nodules in transitional zone of prostate

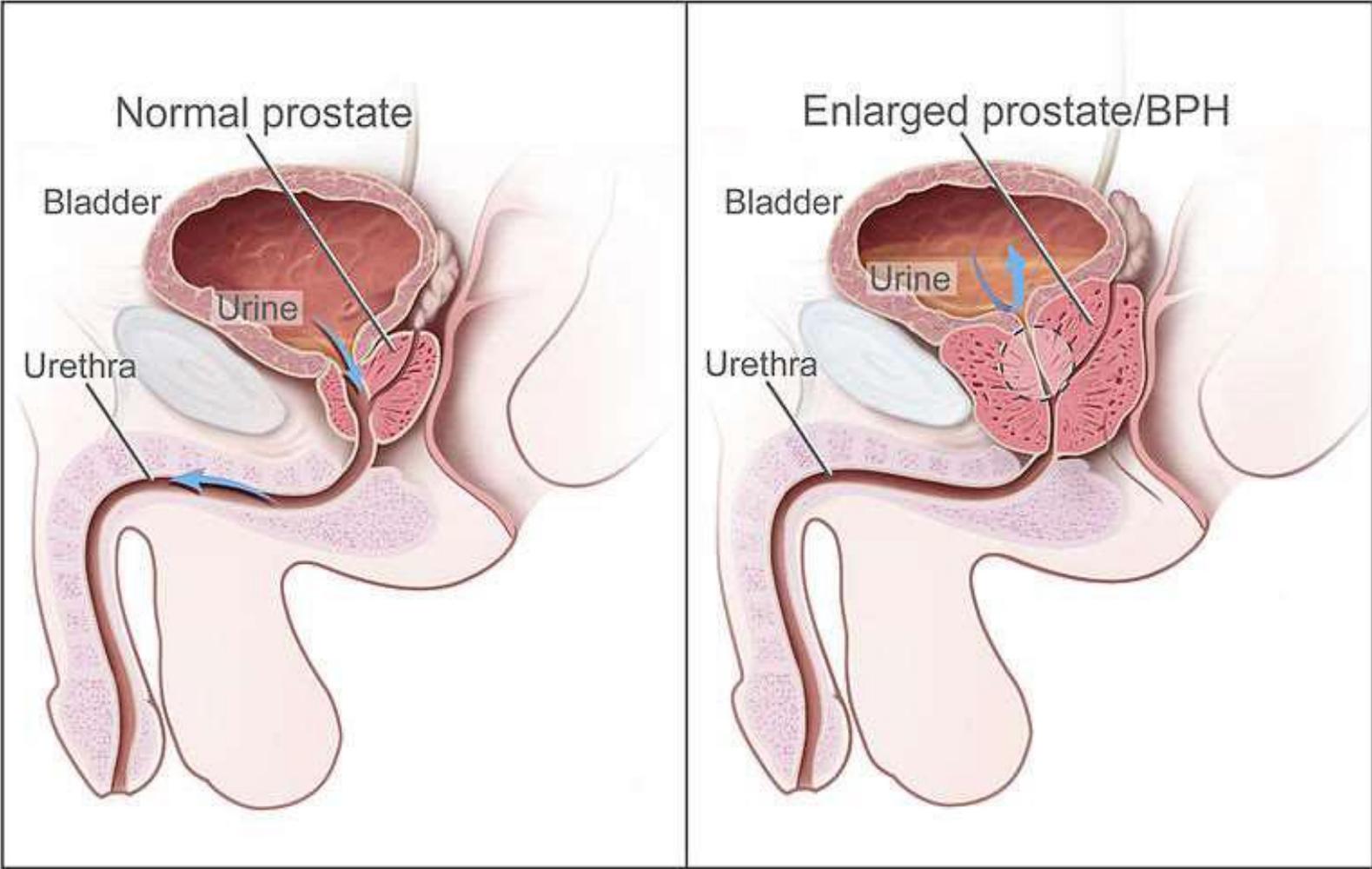


Which push on and narrow the urethra



Resulting in an increase resistance to flow of urine from the bladder

Slide Title



EPIDEMIOLOGY / INCIDENCE



- BPH typically occurs in men older than 40 years of age.
- By the time they reach 60 years of age, 50% of men have BPH.
- BPH affects as many as 90% of men by 85 years of age.
- BPH is the second most common cause of surgical intervention in men older than 60 years of age.

ETIOLOGY/ RISK FACTORS

- 
- Excessive accumulation of prostatic androgen [dihydroxytestosterone]
 - Elevated Estrogen Levels
 - Smoking
 - Reduced Activity Level
 - Western Diet
 - Aging
 - Family History
 - Diabetes And Heart Disease
 - Lifestyle

PATHOPHYSIOLOGY



RESISTANCE

BPH is a result of complex interactions involving resistance in the prostatic urethra to mechanical and spastic effects.

OBSTRUCTION

Hypertrophied lobes of the prostate may obstruct the bladder neck or urethra, causing incomplete emptying of the bladder and urinary retention.

DILATION

Gradual dilation of the ureters and kidneys can occur.

PATHOPHYSIOLOGY

Due to etiological factors enlargement of prostate gland

Normally thin and fibrous outer capsule of prostate become spongy and thick as enlargement progress

Nodular proliferation of prostate gland

The hypertrophied lobes may obstruct the vesical neck or prostatic urethra, causing incomplete emptying of the bladder and urinary retention

A gradual dilation of the ureters (hydroureter) and kidneys (hydronephrosis) can occur

Urinary tract infections may result from urinary stasis, because some urine remains in the urinary tract and serves as a medium for infective organisms.

CLINICAL MANIFESTATIONS

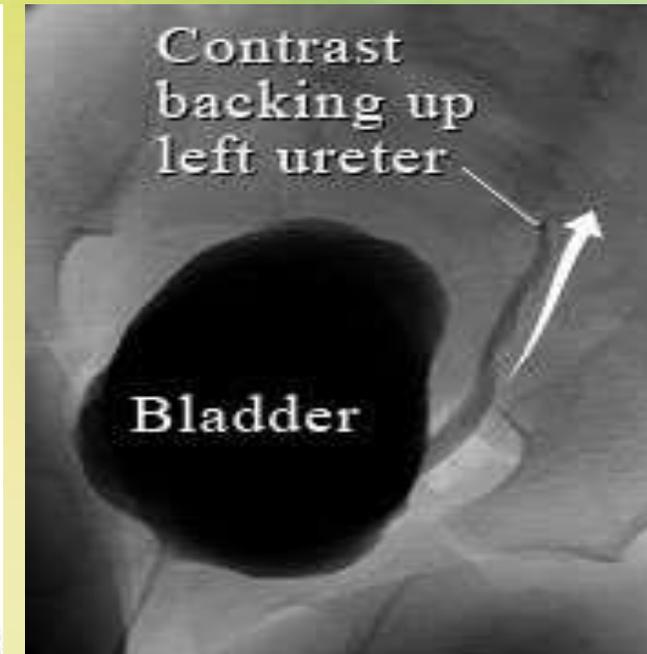
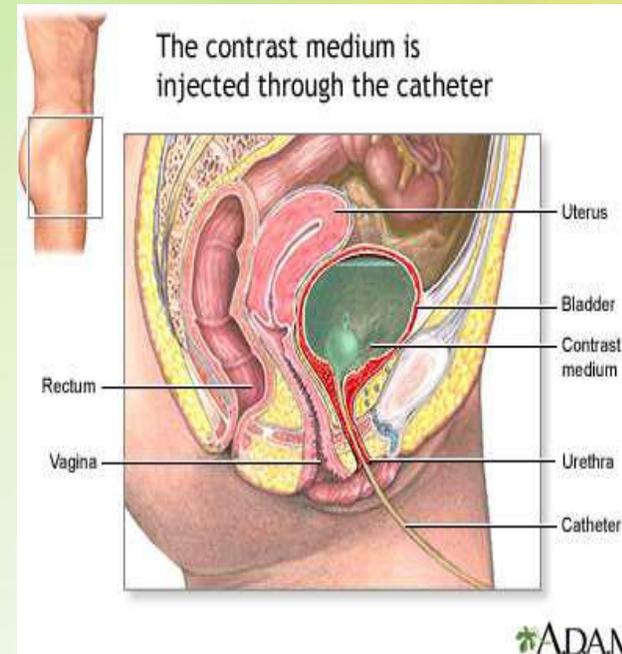
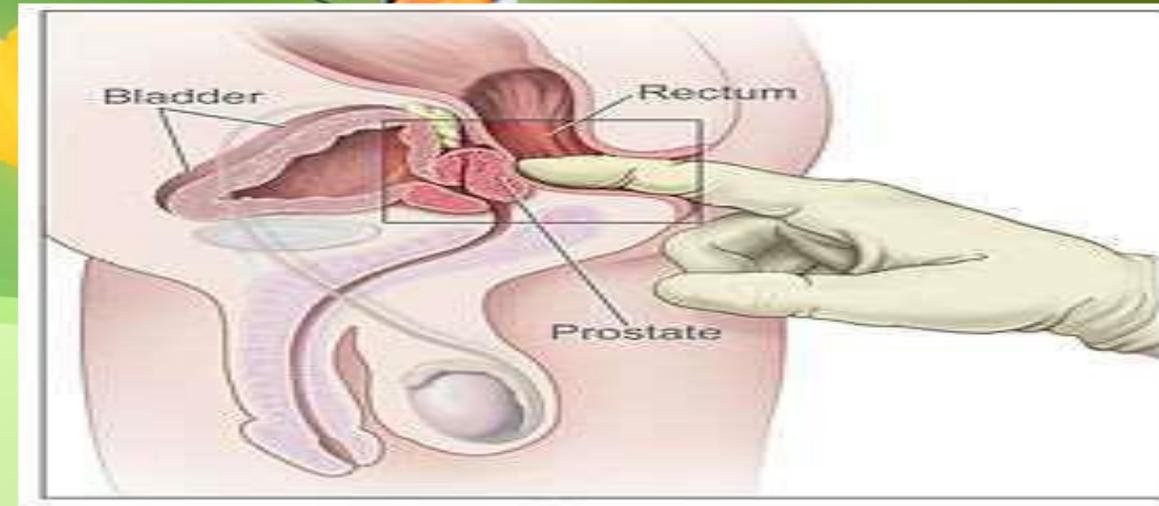
- Hesitancy in starting urination
- Increased frequency of urination
- Nocturia
- Urgency
- Abdominal straining
- Decrease in volume and force of urinary stream
- Interruption of urinary stream
- Dribbling.
- Sensation of incomplete emptying of the bladder
- Acute urinary retention (more than 60 ml)
- Recurrent UTIs.
- Fatigue
- Anorexia
- Nausea and vomiting
- Pelvic discomfort and pain
- Ultimately azotemia
- Renal failure result with chronic urinary retention and large residual volumes
- Blood in the urine

BPH (Benign prostatic hyperplasia)



DIAGNOSTIC EVALUATION

- History collection
- Physical examination- including Digital Rectal Examination (DRE)
- Urinalysis
- Urine culture
- Prostate specific antigen levels
- Urine cytology
- BUN/Cr
- WBC
- Uroflowmetry
- IVP with post voiding film
- Voiding
- Cystourethrogram
- Cystourethroscopy
- Cystometry
- Transrectal prostatic ultrasound

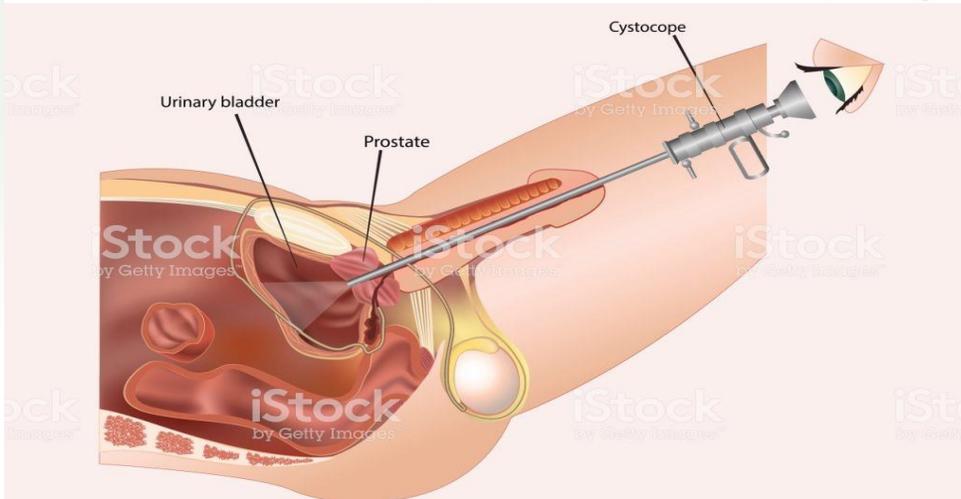
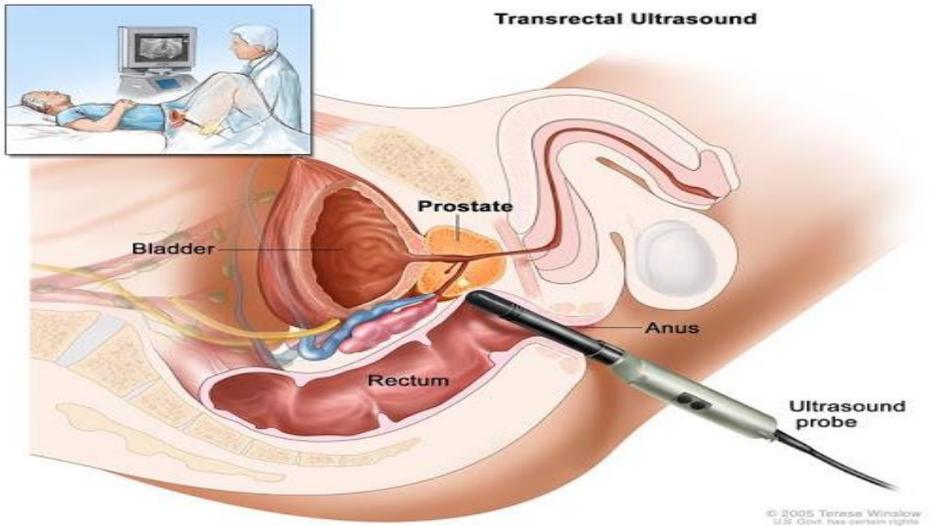
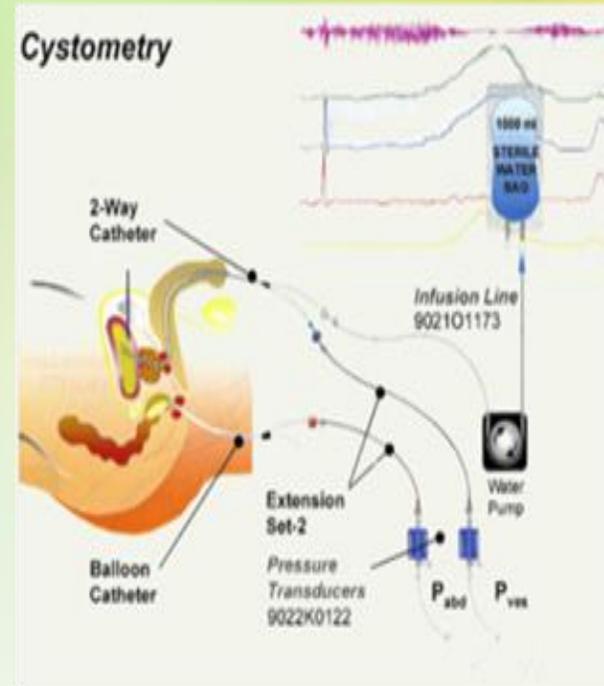


DIAGNOSTIC EVALUATION



Cystometry

A test used to look for problems with the filling and emptying of the bladder. It measures the amount of urine in the bladder. That figure is compared with the bladder pressure and how full you think your bladder is. The result tells about muscle function, mechanics, and nerve response of the bladder and urinary tract.



Examination of the prostate with cystoscopy

MEDICAL MANAGEMENT



- ❖ **Alpha blockers:** These medications relax bladder neck muscles and muscle fibers in the prostate, making urination easier.
- ❖ **5-alpha reductase inhibitors (antiandrogen agents) :** These medications shrink prostate by preventing hormonal changes that cause prostate growth.
- ❖ **Combination drug therapy:** Doctor might recommend taking an alpha blocker and a 5-alpha reductase inhibitor at the same time if either medication alone isn't effective.
- ❖ **Tadalafil (Cialis):** Studies suggest this medication, which is often used to treat erectile dysfunction, can also treat prostate enlargement.

SURGICAL MANAGEMENT



1.

- Minimally Invasive Therapy

2.

- Invasive Therapy

MINIMALLY INVASIVE THERAPY



Minimally invasive therapies are becoming more common as an alternative to watchful waiting and invasive treatment. They generally do not require hospitalization.

• **Transurethral
Microwave
Thermotherapy**

1

• **Transurethral
Needle
Ablation.**

2

• **Laser
Prostatectomy.**

3

• **Photovaporiza-
tion**

4

• **Interstitial
laser
coagulation
(ILC).**

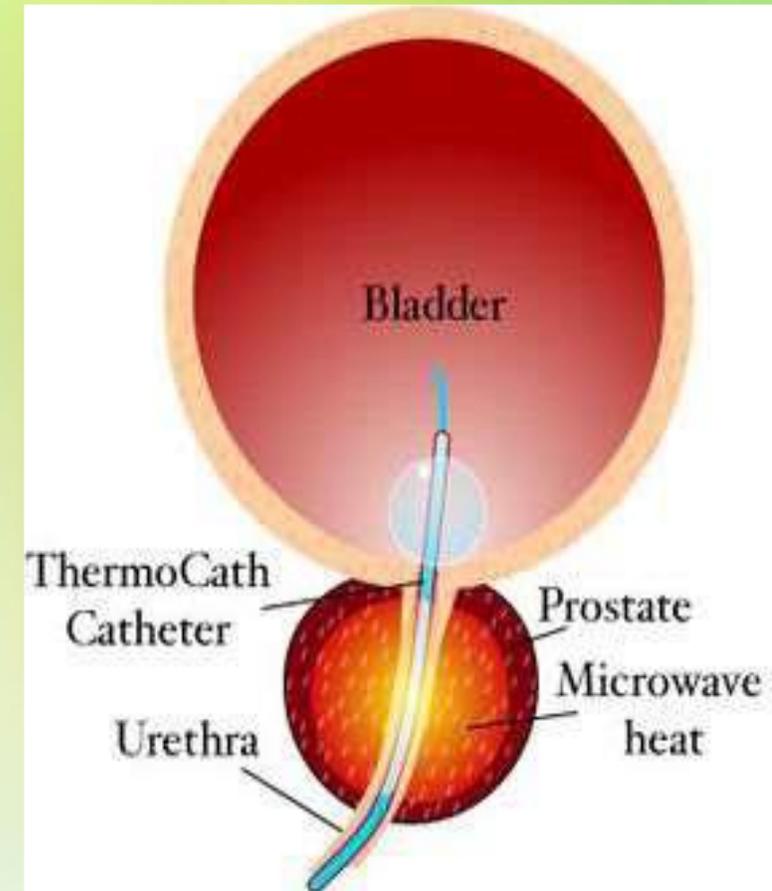
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• **Intraprostatic
Urethral
Stents.**

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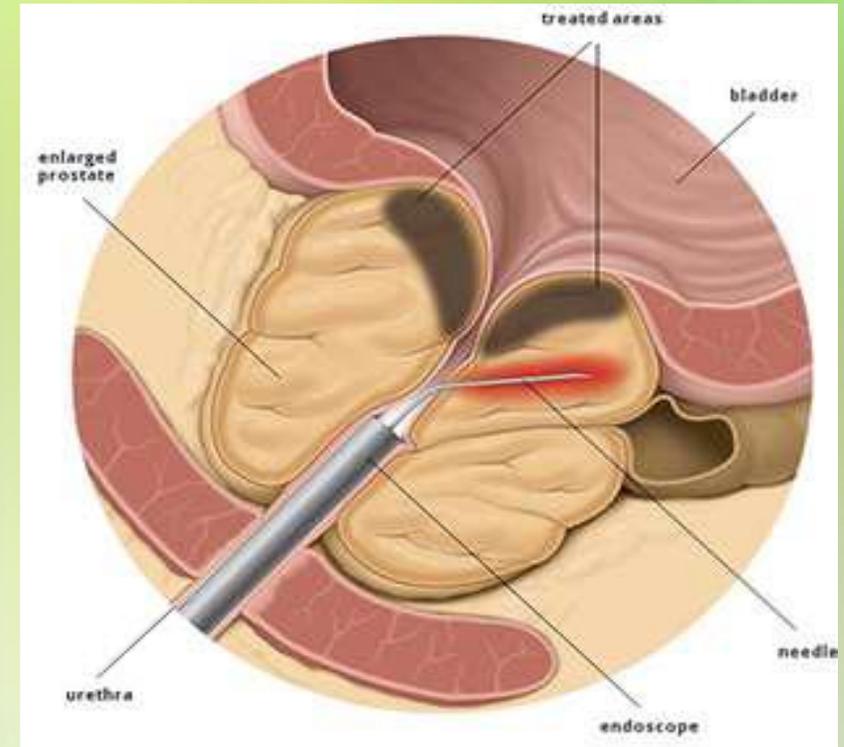
Transurethral Microwave Thermotherapy

Transurethral microwave thermotherapy (TUMT) is an outpatient procedure that involves the delivery of microwaves directly to the prostate through a transurethral probe to raise the temperature of the prostate tissue to about 113° F (45° C). The heat causes death of tissue, thus relieving the obstruction.



Transurethral Needle Ablation.

Transurethral needle ablation (TUNA) is another procedure that increases the temperature of prostate tissue, thus causing localized necrosis. TUNA differs from TUMT in that low-wave radiofrequency is used to heat the prostate.





Laser Prostatectomy

The use of laser therapy through visual or ultrasound guidance is an effective alternative to transurethral resection of the prostate (TURP) in treating BPH.

The laser beam is delivered transurethral through a fiber instrument and is used for cutting, coagulation, and vaporization of prostatic tissue.

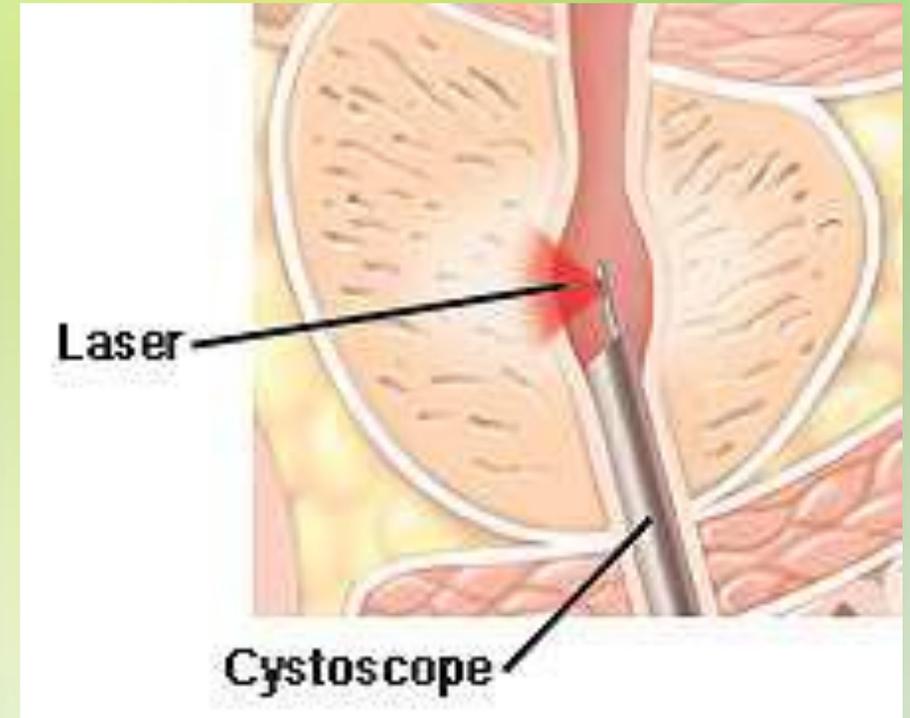
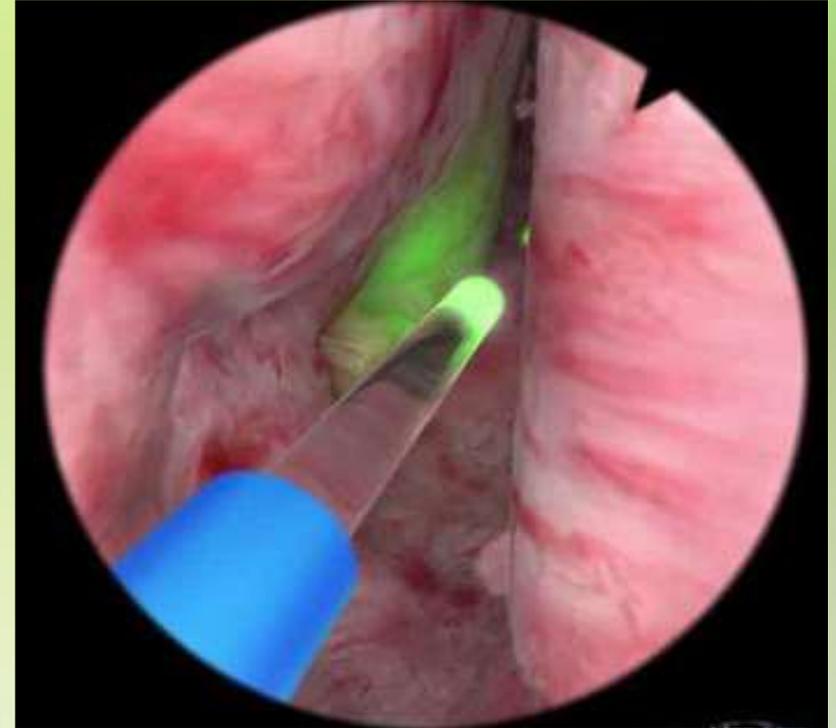


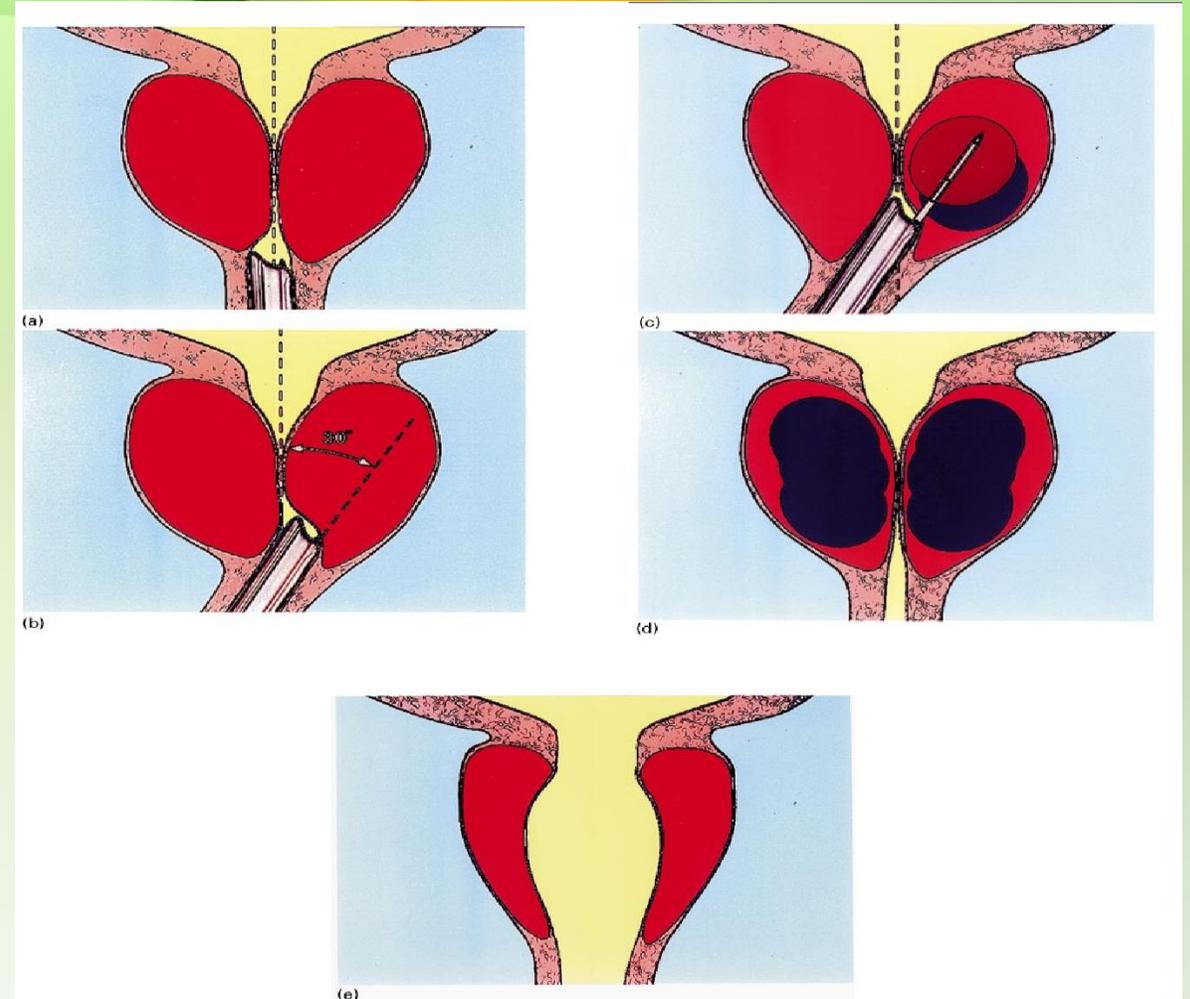
Photo vaporization

PVP uses a high-power green laser light to vaporize prostate tissue. Improvements in urine flow and symptoms are almost immediate after the procedure. Bleeding is minimal, and a catheter is usually inserted for 24 to 48 hours afterward. PVP works well for larger prostate glands.



Interstitial laser coagulation (ILC)

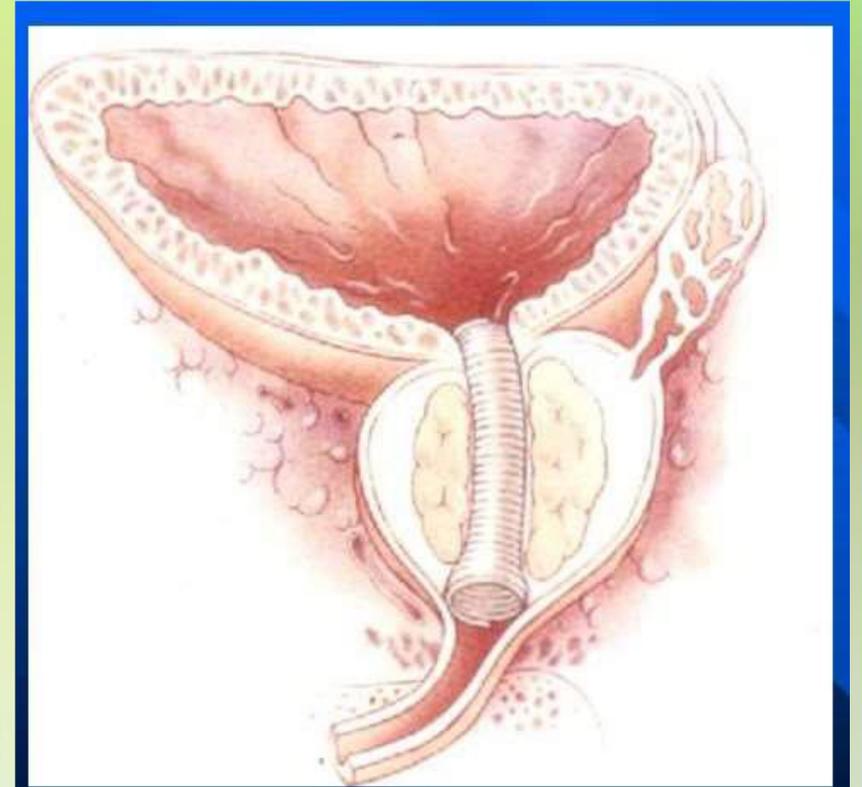
The prostate is viewed through a cystoscope. A laser is used to quickly treat precise areas of the enlarged prostate by placement of interstitial light guides directly into the prostate tissue.



Intraprostatic Urethral Stents

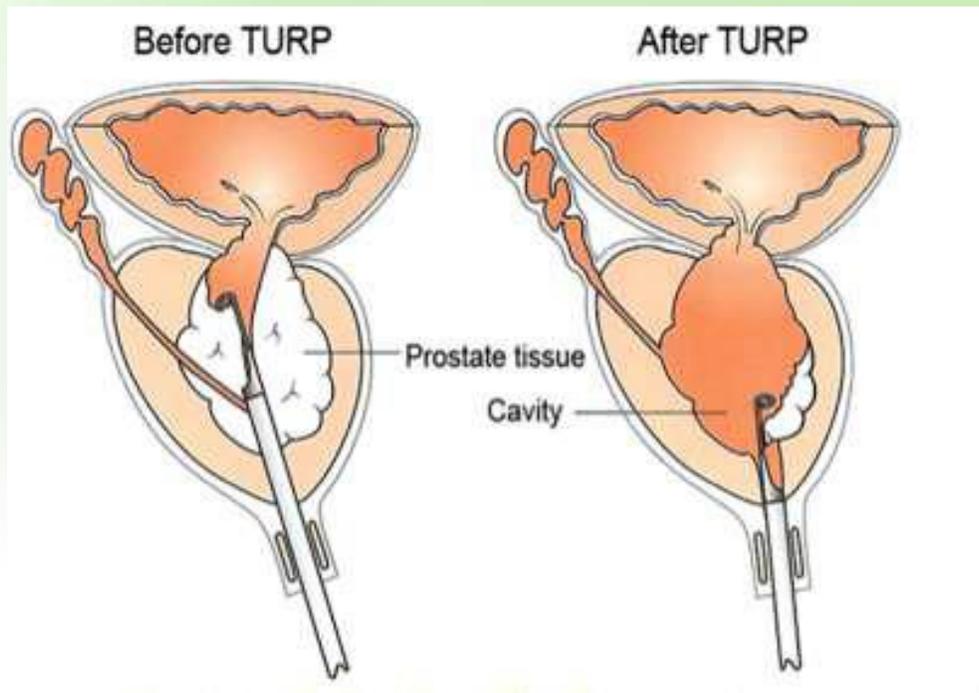
Symptoms from obstruction in patients who are poor surgical candidates can be relieved with intraprostatic urethral stents. The stents are placed directly into the prostatic tissue.

Complications include chronic pain, infection, and encrustation.

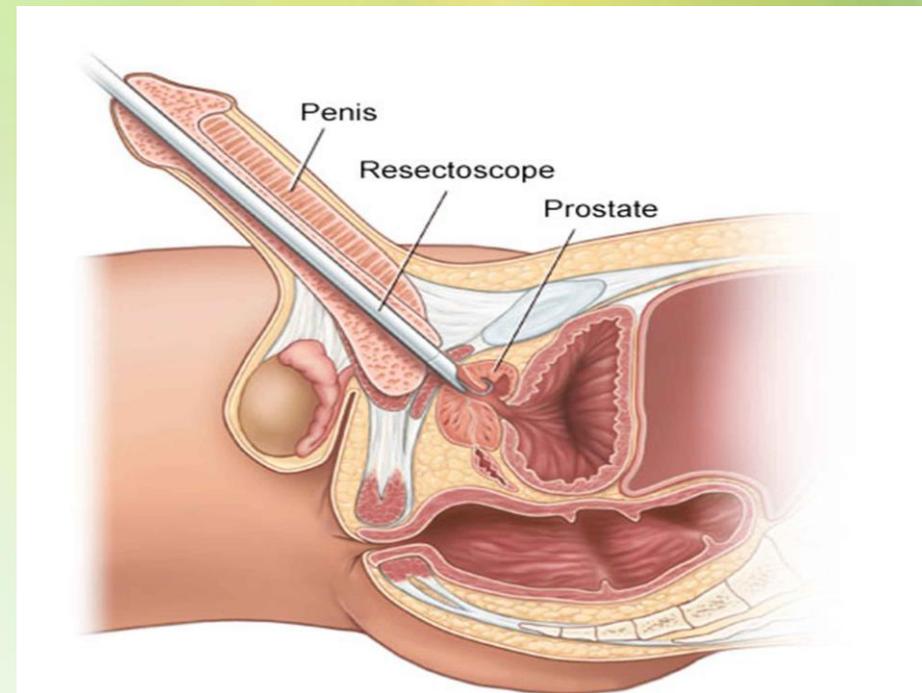


INVASIVE THERAPY (SURGERY)

1. Transurethral Resection of the Prostate.



2. Transurethral Incision of the Prostate (Open prostatectomy)



Transurethral Resection of the Prostate.



- ❖ Transurethral resection of the prostate (TURP) is a surgical procedure involving the removal of prostate tissue using a resectoscope inserted through the urethra.
- ❖ TURP has long been considered the gold standard for surgical treatments of obstructing BPH. Although this procedure remains the most common operation performed, the number of TURP procedures done in recent years has declined due to the development of less invasive technologies.
- ❖ TURP is performed under a spinal or general anesthetic and requires a 1- to 2-day hospital stay. No external surgical incision is made. A resectoscope is inserted through the urethra to excise and cauterize obstructing prostatic tissue.
- ❖ A large three-way indwelling catheter with a 30-mL balloon is inserted into the bladder after the procedure to provide hemostasis and to facilitate urinary drainage. The bladder is irrigated, either continuously or intermittently, usually for the first 24 hours to prevent obstruction from mucus and blood clots.
- ❖ The outcome for 80% to 90% of patients is excellent, with marked improvements in symptoms and urinary flow rates.
- ❖ Postoperative complications include bleeding, clot retention, and dilutional hyponatremia associated with irrigation.

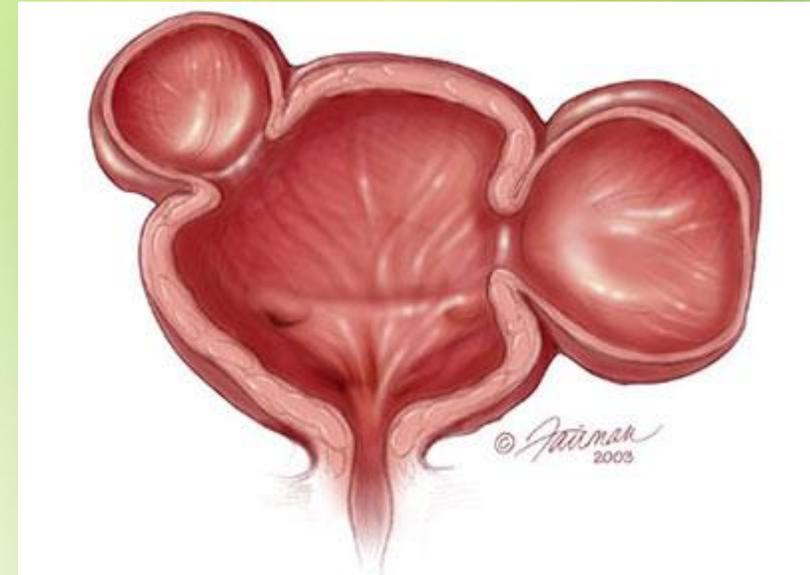
Transurethral Incision of the Prostate.



- ❖ Transurethral incision of the prostate (TUIP) is a surgical procedure done under local anesthesia for men with moderate to severe symptoms. Several small incisions are made into the prostate gland to expand the urethra, which relieves pressure on the urethra and improves urine flow.
- ❖ TUIP is an option for patients with a small or moderately enlarged prostate gland. TUIP has similar patient outcomes to TURP in relieving symptoms.

COMPLICATIONS OF BPH

- ❖ Acute urinary retention
- ❖ Involuntary bladder contractions
- ❖ Bladder diverticula
- ❖ Cystolithiasis
- ❖ Vesicoureteral reflux
- ❖ Hydroureter
- ❖ Hydronephrosis
- ❖ Gross hematuria
- ❖ UTI





NURSING ASSESSMENT



- Obtain history of voiding symptoms, including onset, frequency of day and night time urination, presence of urgency, dysuria, sensation of incomplete bladder emptying, and decreased force of stream.
- Determine impact on quality of life.
- Perform rectal (palpate size, shape, and consistency) and abdominal examination to detect distended bladder, degree of prostatic enlargement.
- Perform simple urodynamic measures uroflowmetry and measurement of postvoid residual, if indicated.

NURSING DIAGNOSIS



- ❖ *Urinary retention related to enlarged prostate or decompensation of detrusor musculature or inability of bladder to contract adequately as evidenced by frequency, hesitancy, inability to empty bladder completely, incontinence/dribbling or bladder distension.*
- ❖ *Acute pain, sudden or slow onset of any intensity from mild to severe with a duration of <6 months related to bladder distension, renal colic or urinary infection as evidenced by reports of pain (bladder/rectal spasm), altered muscle tone, grimacing, distraction behaviors or restlessness.*
- ❖ *Risk for deficient fluid volume, dehydration, related to rapid drainage of a chronically over-distended bladder as evidenced by electrolyte imbalances.*

NURSING DIAGNOSIS



- ❖ *Fear/anxiety related to change in health status, embarrassment/loss of dignity associated with genital exposure before, during, and after treatment, concern about sexual ability as evidenced by increased tension, apprehension, worry, expressed concerns regarding perceived changes or fear of unspecified consequences.*
- ❖ *Deficient knowledge related to lack of information, misinterpretation, unfamiliarity with information resources as evidenced by questions, request for information, verbalization of the problem, inappropriate behaviors, e.g., apathetic, withdrawn, inaccurate follow-through of instructions or development of preventable complications.*

Discharge and Home Care Guidelines

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.

