

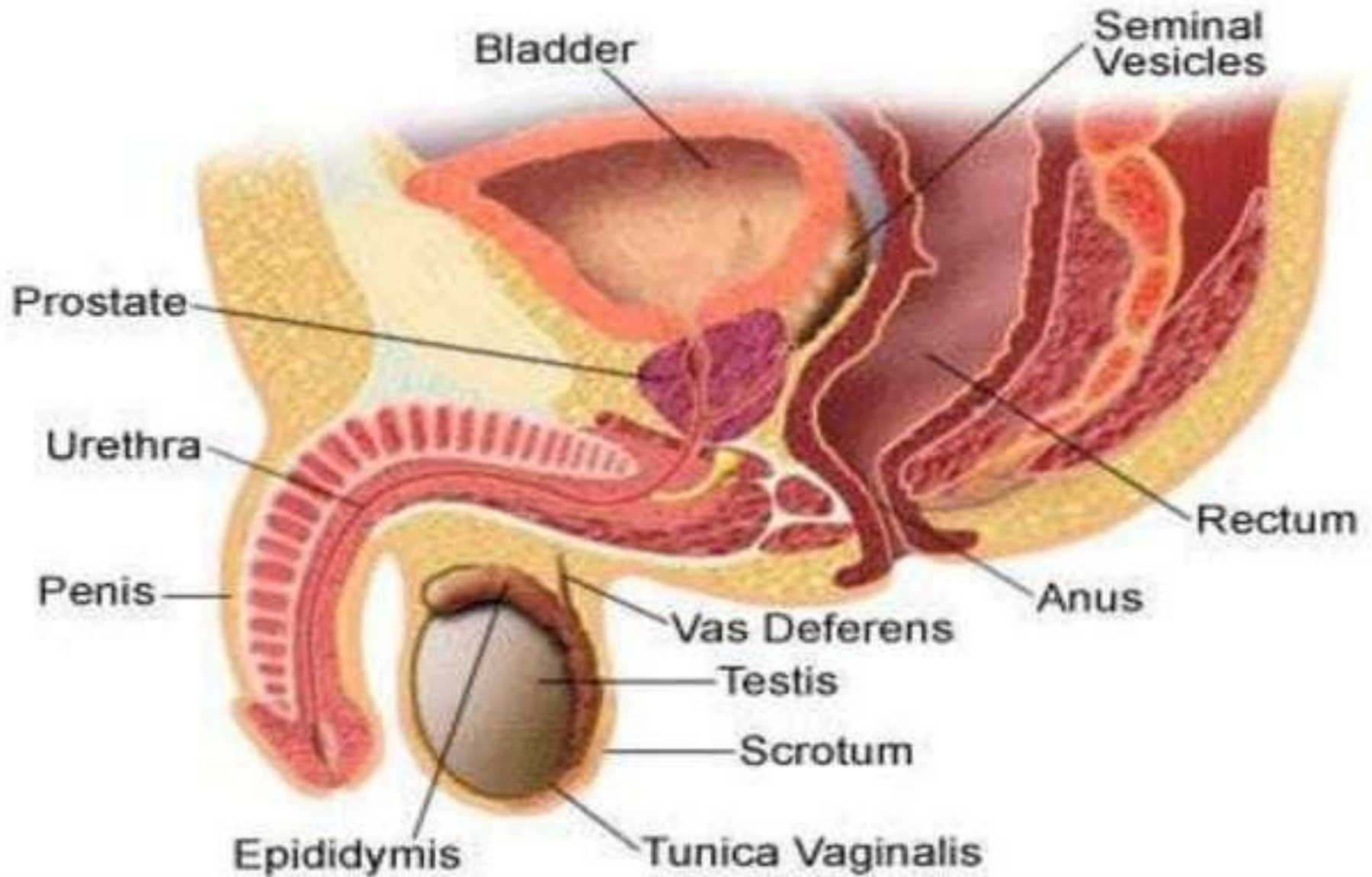
# BENIGN PROSTATE HYPERPLASIA

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# Anatomy and physiology of reproductive system

# Male Reproductive Tract



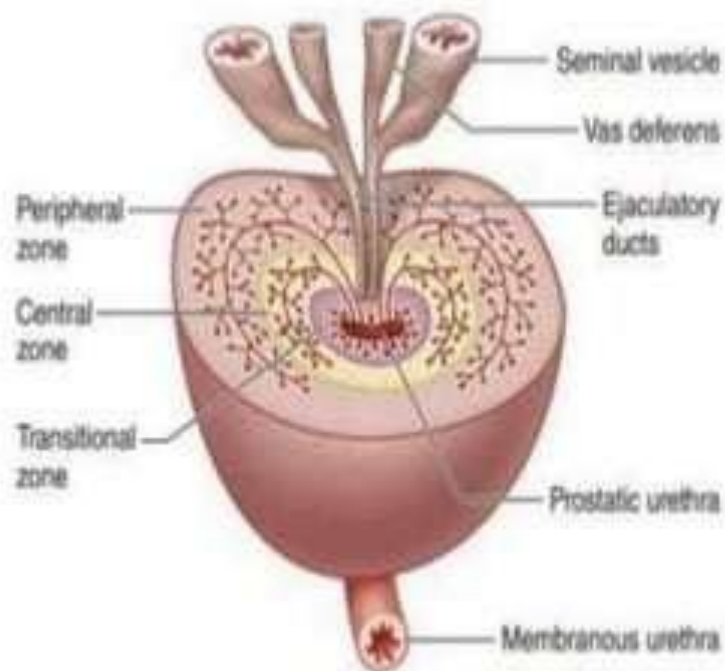
# MALE REPRODUCTIVE SYSTEM

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- ◉ Testes
- ◉ Ducts
- ◉ Glands
- ◉ External genitalia

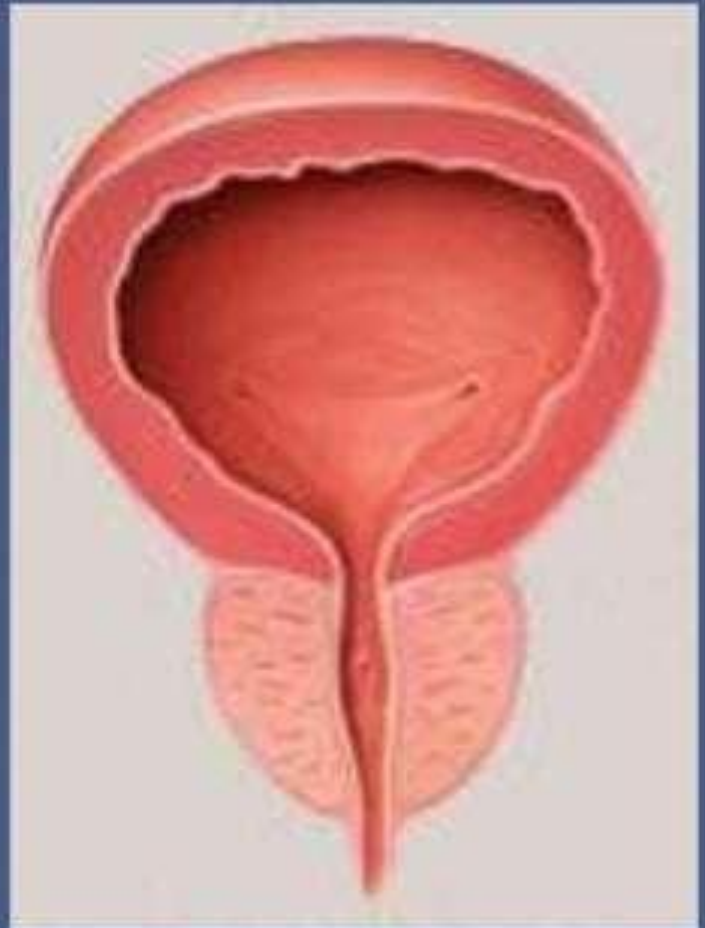
# Prostatic gland

- ◉ walnut-sized gland
- ◉ Weight: 7 and 16 grams.
- ◉ located between the bladder and the penis.
- ◉ nourishes and protects sperm



# DEFINITION

- Benign prostatic hyperplasia is an enlargement of the prostate gland resulting from an increase in the number of epithelial cells and stromal tissue and developing upward into the bladder and obstructing the outflow of urine.



# Etiology

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- Idiopathic
- Aging along with endocrine factors
- Accumulation of dihydroxytestosterone.
- Cancer of prostate
- Others
  - Obesity
  - Inflammation
  - Moderate Alcohol consumption.

# PATHOPHYSIOLOGY

Due to etiological factors like aging,

Decrease testosterone level

Testosterone converted in to Dihydroxytestosterone.

Dihydroxytestosterone accumulated in Stromal cell of prostate.

Enlargement of prostate

Obstruction of urine flow.



# Clinical manifestation

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- Obstructive and irritative symptoms complex (prostatism) which includes
  - increased frequency of urination
  - Nocturia
  - Urgency
  - Hesitancy in starting urination
  - Abdominal straining during urination

# Clinical manifestation

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- Decrease in the volume and stream of urination
- interruption of the urinary stream,
- dribbling (urine dribbles out after urination)

# Clinical manifestation

- a sensation that the bladder has not been completely emptied,
- acute urinary retention (when more than 60 mL of urine remains in the bladder after urination),
- and recurrent urinary tract infections
- Generalized symptoms like anorexia, nausea, vomiting, fatigue, epigastric symptoms

# Diagnosis

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- ◉ History and physical examination
- ◉ Digital rectal examination (DRE)
- ◉ Urinalysis with culture
- ◉ Serum creatinine
- ◉ Prostate specific antigen(PSA): 4.0 ng/ml
- ◉ Transrectal ultrasound (TRUS)
- ◉ Cystouretheroscopy

# Management

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The goal of collaborative care are

- ◉ Restore bladder drainage
- ◉ Relieve patient symptom
- ◉ Prevent and treat complication of BPH

# Pharmacological therapy



- 
- ◉ 5 alpha reductase inhibitors
  - ◉ Alpha adrenergic receptor blockers
  - ◉ Combination therapy
  - ◉ Herbal therapy

## 5 Alpha reductase inhibitors

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- ◉ Reduce the size of prostate
- ◉ Blocks the enzyme 5 alpha reductase necessary for the conversion of testosterone to dihydroxytestosterone, the principal intraprostatic androgen. Which results in regression of hyperplastic tissue through suppression.



- The drug takes 3-6 months to take its action. And should be taken on a daily basis to bring about effective therapeutic results.
- Side effects include decreased ejaculate and erectile dysfunction

# 5 alpha reductase inhibitors



# Alpha adrenergic receptor blockers

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- Blocks the alpha 1 adrenergic receptors of the prostate
- Alpha 1 adrenergic receptors are abundant in the prostate and also in the hyperplastic tissue
- This drug brings about the smooth muscle relaxation.
- Relaxation of the smooth muscles results in the free flow of urine
- Side effects include dizziness, retrograde ejaculation, and nasal congestion.

# Combination therapy

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- 5 alpha reductase inhibitors and alpha adrenergic receptor blockers are used in combination. To bring about the relief

# Invasive management



# Invasive management

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- ◉ Intermittent catheterization
- ◉ Trans urethral resection of prostate (TURP)
- ◉ Open prostatectomy
- ◉ Transurethral electrovaporization of prostate (TUVP)
- ◉ Transurethral incision of prostate
- ◉ Transurethral microwave therapy (TUMT)

- 
- ◉ Transurethral needle ablation(TUNA)
  - ◉ Laser prostatectomy
  - ◉ Intraprostatic urethral stents

# Intermittent catheterization

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- This can temporarily reduce the symptoms by bypassing the obstruction but the long term use of the catheter should be avoided because of the risk of infection

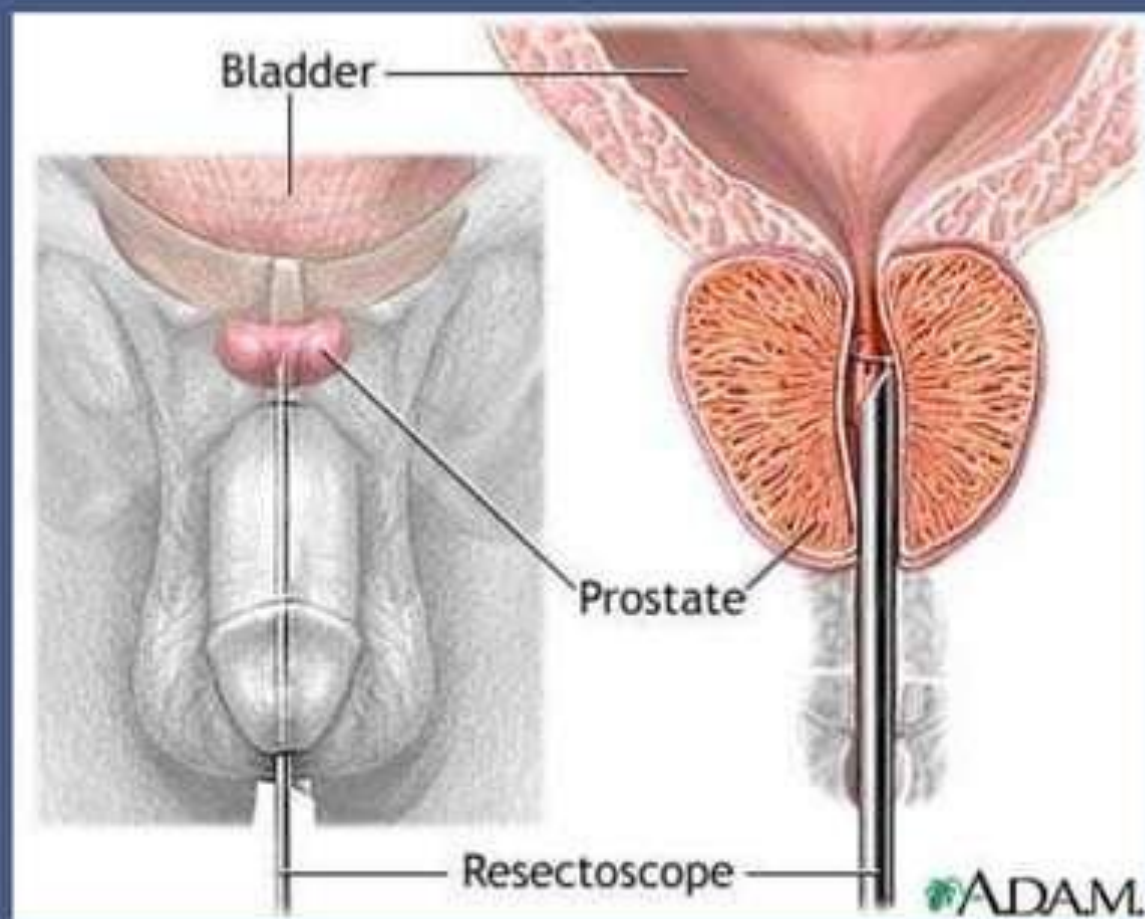


# Trans urethral resection of prostate(TURP)

- It is the surgical procedure by which the prostate tissue is removed with the help of a resectoscope inserted through the urethra
- Done under spinal anesthesia and requires hospital stay
- A resectoscope is made to enter through the urethra and resect and cauterize the obstructing prostatic tissue.

- ⑥ An indwelling catheter with a three way outlet and 30ml balloon is inserted to provide hemostasis and to provide urinary drainage.the bladder is irrigated either continuously or intermittently after the procedure for 24 hours to avoid the obstruction caused by blood clot and mucus.
- ⑥ Post operative complications include bleeding, clot retention and dilutional hyponatremia.

# Trans urethral resection of prostate (TURP)



# Open prostatectomy

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- only indicated when the prostate is very large
- has basically three main approaches such as retropubic, suprapubic and perineal approach
- has side effects such as erectile dysfunction, bleeding, post operative pain and risk for infection.

## trans urethral electrovaporization of prostate (TUVP)

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- Electro surgical desiccation are used together to destroy prostatic tissue
- Advantages are minimal risk minimal bleeding & sloughing
- Complications are retrograde ejaculation and hematuria.

## Trans urethral incision of prostate(TUIP)

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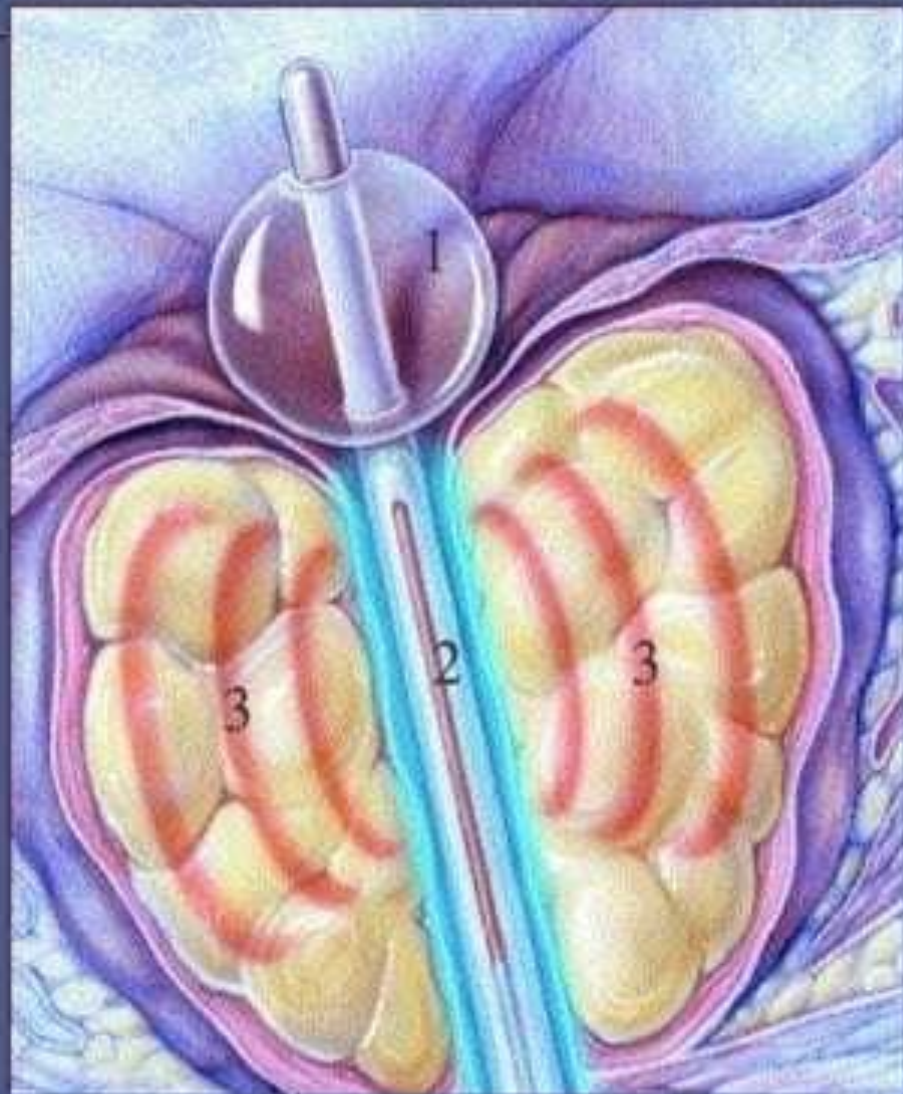
- ◉ It is a surgical procedure done under local anesthesia
- ◉ its indicated for patients with moderate to severe symptoms and small prostates
- ◉ It is only a temporary procedure to relieve obstruction

# Trans urethral microwave thermotherapy(TUMT)

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- ◉ It is an out patient procedure
- ◉ Uses trans urethral probe to deliver the heat
- ◉ A rectal probe is used to monitor the heat.
- ◉ Post operative complication include urinary retention.

# Transurethral microwave therapy (TUMT)

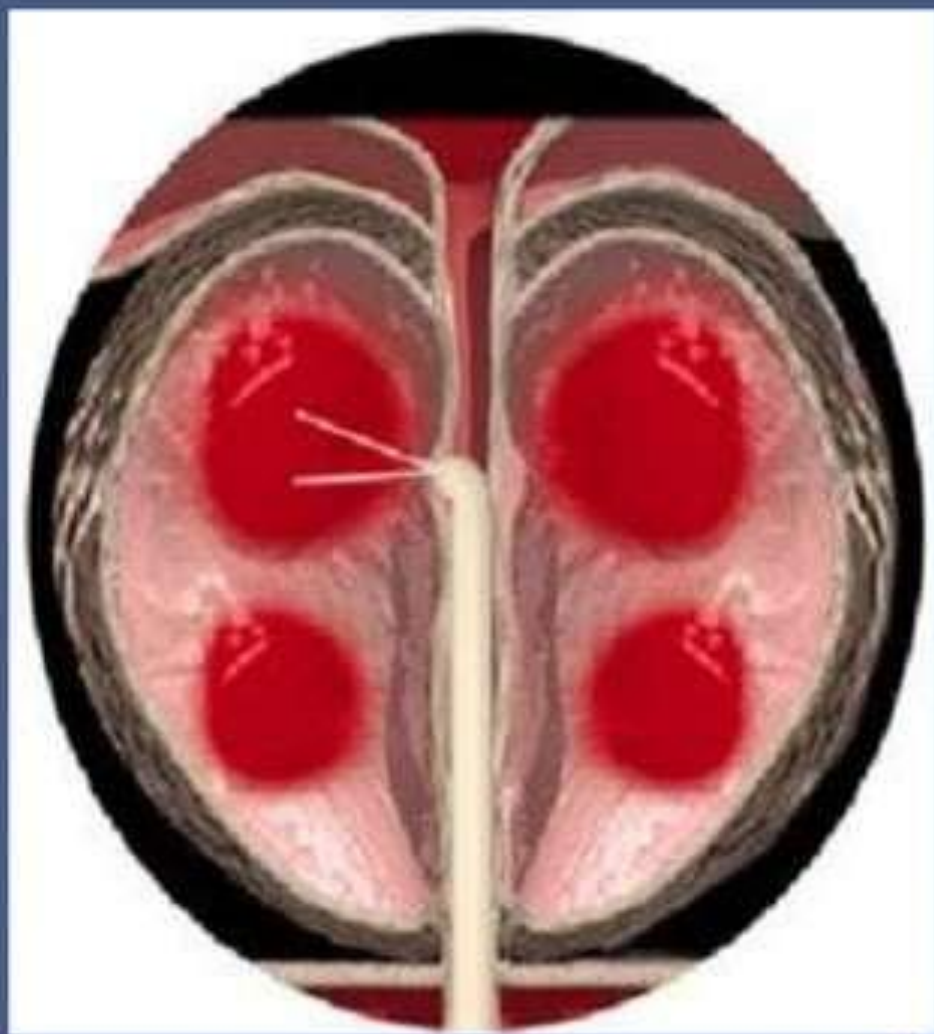
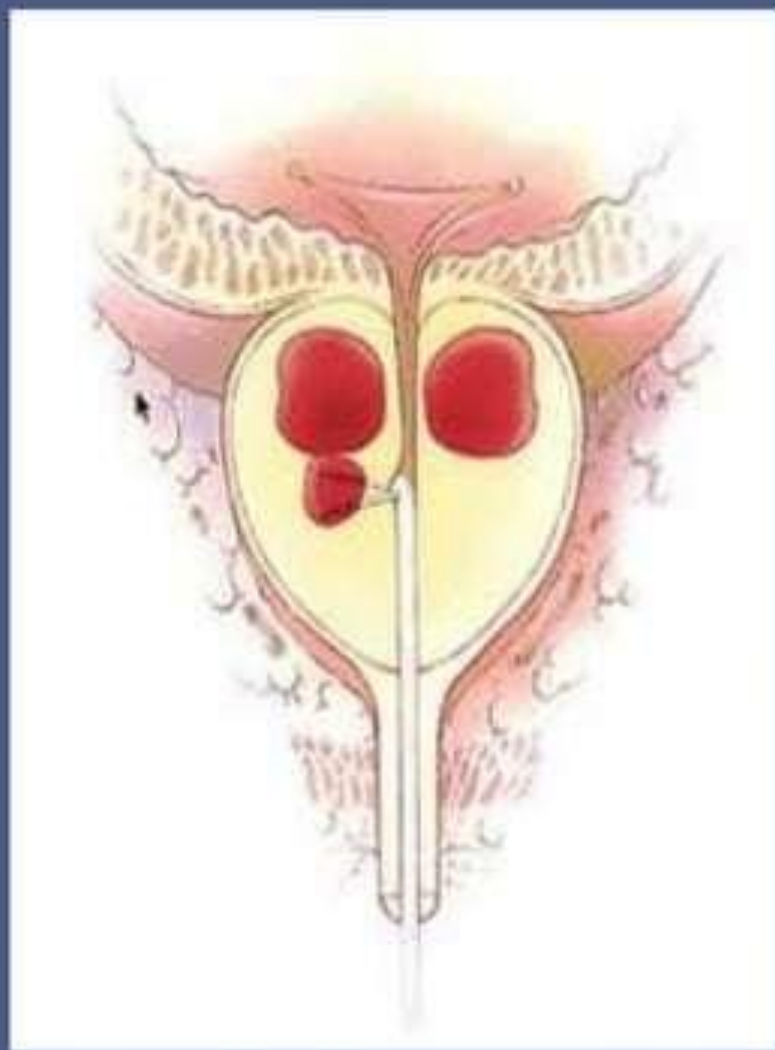




# Transurethral needle ablation(TUNA)

- ◉ Temperature of the prostate tissue is increased locally to bring down necrosis of the enlarged tissue.
- ◉ Uses low wave radio frequency
- ◉ It is an out patient procedure lasting only for 30 minutes
- ◉ complication include urinary retention, urinary tract infection, and irritative voiding symptom

# Transurethral needle ablation(TUNA)

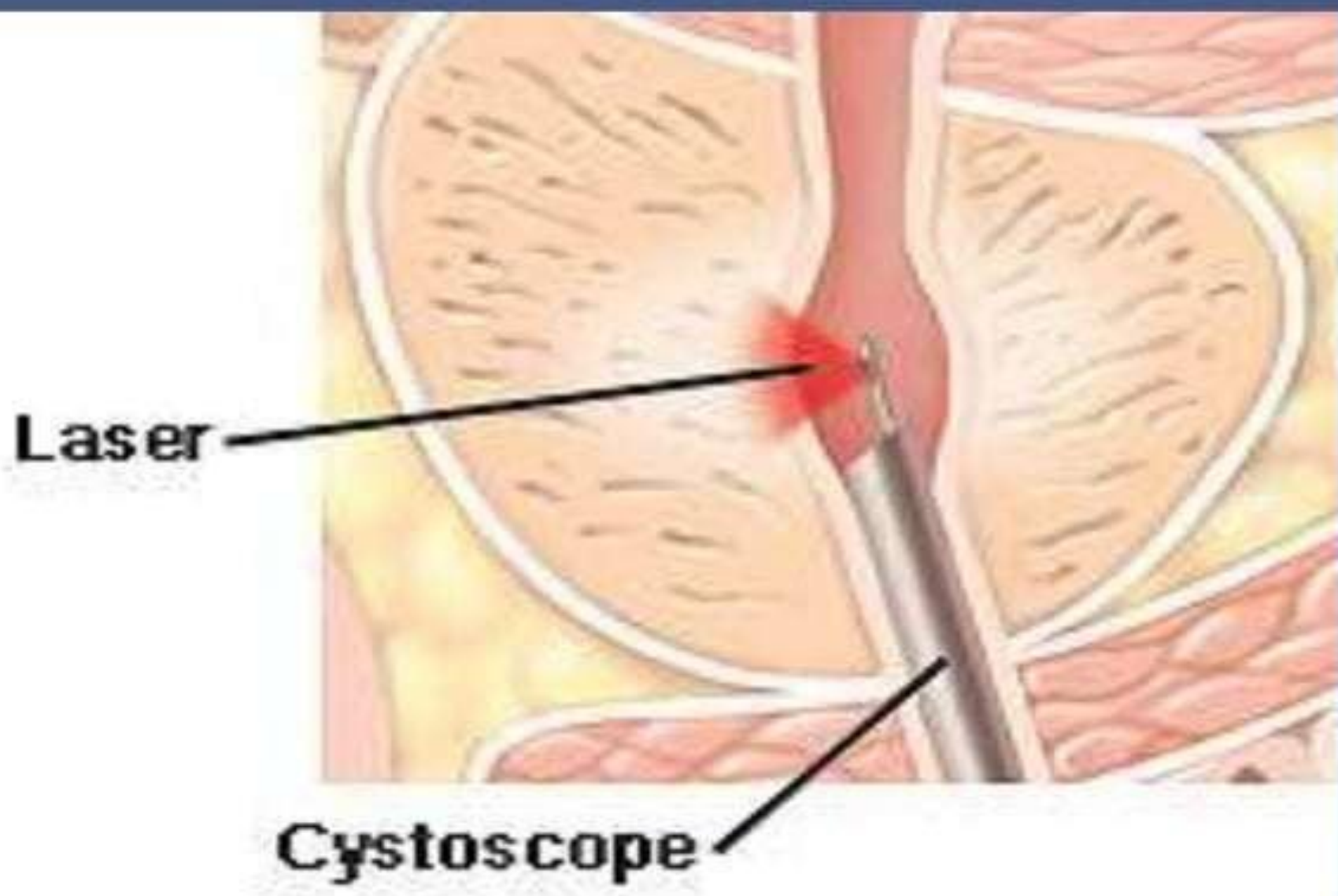


# Laser prostatectomy

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- Laser beam is delivered transurethally through a fiber instrument and is used for cutting coagulation and vaporization of prostate tissue
- Visual laser ablation of prostate.(VLAP)
- Contact laser technique

# Laser prostatectomy

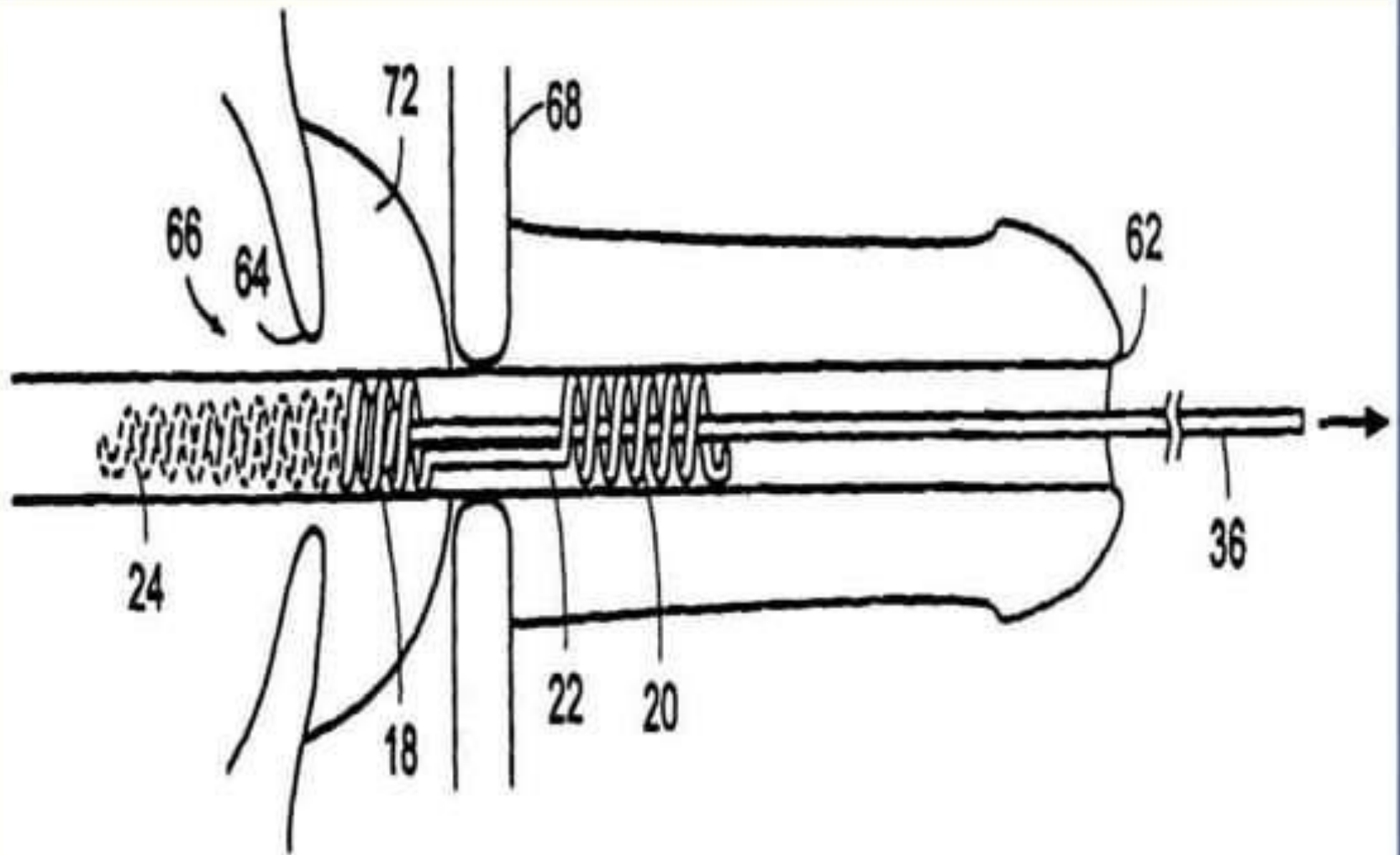


# Intraprostatic urethral stents

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- ⦿ This done for patients with poor surgical prognosis
- ⦿ A stent is placed in the urethra to relieve the symptoms
- ⦿ Complication include infection, chronic pain and encrustation.

# Intraprostatic urethral stents



# DIETARY MANAGEMENT

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- ⦿ Increase fruits,vegetables....
- ⦿ Decrease foods high in fat
- ⦿ Avoid intake of coffe,alcohol,beer..
- ⦿ Drink 50% of your body water in ounces daily.(eg:if your body weight is 150lbs then take 75 ounces of water daily.)
- ⦿ Include saw palmetto in diet.

# NURSING MANAGEMENT





# Nursing management

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- ① Health promotion
- ① Acute intervention
- ① Ambulatory and home care

# Health promotion

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- ⦿ Early detection and treatment
- ⦿ Reducing intake of caffeine and alcohol
- ⦿ Avoid compounds found in cough and cold preparations
- ⦿ Avoid the risk of urinary stasis and urinary retention.

# Acute intervention

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- ⦿ Preoperative care and
- ⦿ Post operative care.

# Preoperative care

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- Urinary drainage restored before surgery
- Antibiotics administered
- Allow to express sexual concerns.

# Post operative care

- Complications if any are noted
- Remove clotted blood from the bladder
- Inflow & out flow of irrigant are strictly monitored
- Prevent urethral irritation and bladder infection.
- Reduce the bleeding site of the prostate by applying counterpressure
- Avoid bladder spasms
- Practice pelvic floor exercises
- Straining during bowel movements avoided

# Ambulatory and home care

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- Care of catheter
- Managing urinary incontinence
- Intake of oral fluids 2000-3000ml /day
- Observing for urinary tract and wound infection
- Prevent constipation
- Avoid heavy lifting
- Refraining from driving and intercourse as directed by the physician.

# Nursing diagnosis

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## **preoperative**

- Acute pain related to bladder distention secondary to enlarged prostate
- Risk for infection related to an indwelling catheter, urinary stasis , or environmental pathogens

# Postoperative

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- Acute pain related to bladder irritability, irrigation and distention, presence of catheter and surgical traumas evidenced by reports of pain, non verbal signs of pain such as moaning, crying, legs drawn to abdomen.
- Urge urinary incontinence related to bladder irritation and poor sphincter control as evidenced by involuntary leakage of urine.
- Ineffective therapeutic regimen management related to lack of knowledge regarding need for follow up care.



## conclusion

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- Thus BPH is a disease affecting older adults which leads to minor symptoms like urinary retention to major symptoms like renal failure. Early treatment and appropriate management shows good prognosis.

THANK YOU

