

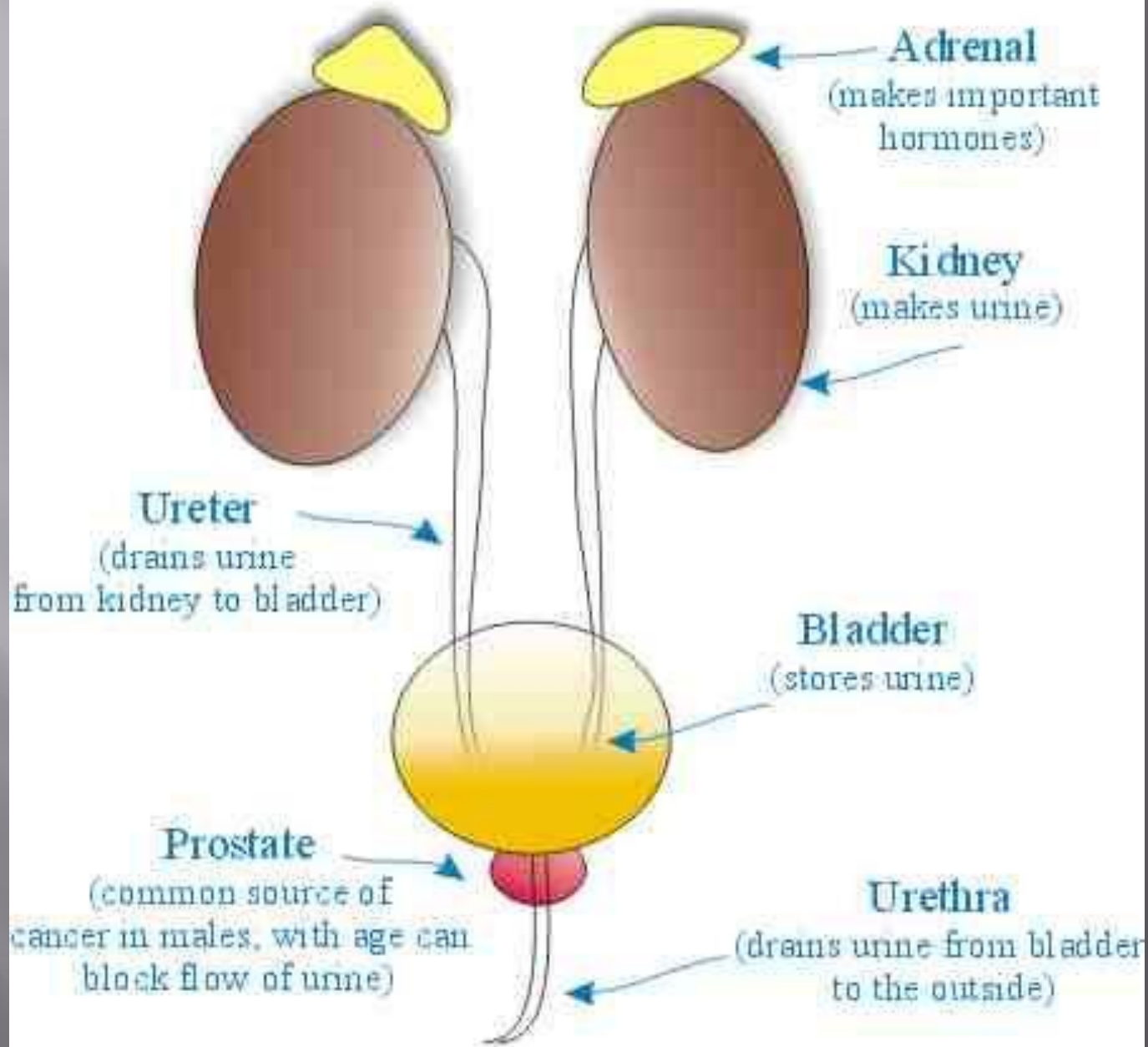
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Urinary retention

GU ANATOMY 101



Definition

- ▣ **Urinary retention** is an inability to completely empty the urinary bladder voluntarily.
- ▣ Urinary retention may be
 - >Acute
 - >Chronic

Acute Urinary Retention (AUR)

- ▣ Acute urinary retention(AUR) is the sudden inability to pass urine.
- ▣ It is usually painful



Chronic Urinary Retention

- ▣ Obstruction develops slowly, the bladder is distended very gradually over weeks/months, so pain is not a feature.
- ▣ In chronic retention, symptoms may include loss of bladder control, mild lower abdominal pain, and a weak urine stream

Causes

- ▣ Mechanical Obstruction
- ▣ Functional Obstruction

Mechanical Obstruction

- ▣ **Enlarged Prostate Gland**
 - * Benign Prostatic Hyperplasia (BPH)
 - * Prostate Cancer
 - * Acute Prostatitis

Mechanical Obstruction

- ▣ Urethral narrowing
 - Urethral stricture
 - Urethral carcinoma
 - Posterior urethral valves

 - Urethritis
(inflamed, edematous urethra)
 - Meatal stenosis
 - Phimosis
and paraphimosis

Mechanical Obstruction

- ▣ **Bladder neck obstruction**

 - Bladder calculi

 - Bladder cancer

Mechanical Obstruction

- **Extrinsic obstruction** (rare)
 - Anterior vaginal wall prolapse
 - Pelvic masses (e.g., benign/malignant ovarian tumor)
 - Rectal mass or fecal impaction

Mechanical Obstruction

- ▣ Urethral/bladder trauma
(e.g., urethral transaction)

Functional obstruction

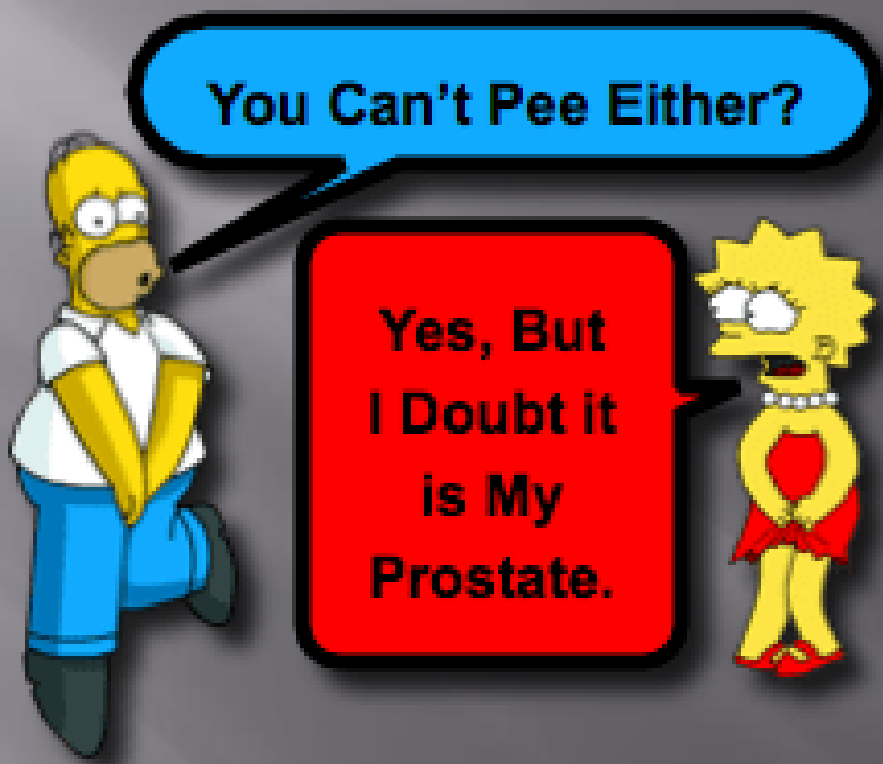
- ▣ **Detrusor under activity and/or sphincter over activity**
- ▣ **Neurological causes (neurogenic bladder)**
 - **Central nervous system**
 - ▣ **Spinal cord compression** (e.g., intervertebral disc protrusion/herniation, tumors, epidural abscess/hematoma) or trauma
 - ▣ Congenital anomalies of the spinal cord (e.g., meningocele, spina bifida)
 - ▣ Stroke
 - ▣ Multiple sclerosis, Parkinson disease

Functional obstruction

- ▣ Peripheral nervous system
 - Damage to pelvic splanchnic nerves (bladder denervation) → causes ↓ bladder sensation and detrusor contractility → infrequent, incomplete urination → overflow incontinence
 - ▣ Diabetic autonomic neuropathy
 - ▣ Trauma (e.g., pelvic fracture, surgery/radiation of the pelvis)

Functional obstruction

- ▣ Drug-induced urinary retention
 - Due to detrusor under activity:
anticholinergics, antihistamines, tricyclic antidepressants, antipsychotics, calcium channel blockers, antiparkinson agents
 - Due to increased urethral sphincter tone : sympathomimetics, nonselective beta blockers, opioids)



You Can't Pee Either?

**Yes, But
I Doubt it
is My
Prostate.**

Signs and Symptoms

- ▣ Pain in abdomen
- ▣ History of inability to pass urine
- ▣ Distended bladder on palpation

History taking, paying attention about:

- ▣ course of development including onset and progression
- ▣ Any history of fever
- ▣ Any previous episodes? History of BPH
- ▣ Lower urinary tract symptoms(LUTS)
- ▣ Past medical history, neurological disease, other medical condition
- ▣ Drug history

Examination

- ▣ Is the patient warm? Fever
- ▣ Abdominal examination for bladder palpation
- ▣ Genitalia examination
- ▣ In females, look for UV prolapse, rectoceles, cystoceles do vaginal examination and asses for any pelvic mass
- ▣ Look for vulval infections and gravid uterus

Examination

- ▣ In males do a DRE/PR examination for enlarged prostate
- ▣ Neurological examination for neurogenic bladder

Laboratory Tests

- ▣ Full Blood Count
- ▣ Urine analysis and culture
- ▣ Urea and creatinine
- ▣ PSA levels
- ▣ Coagulation profile
- ▣ Blood sugar

Imaging Studies

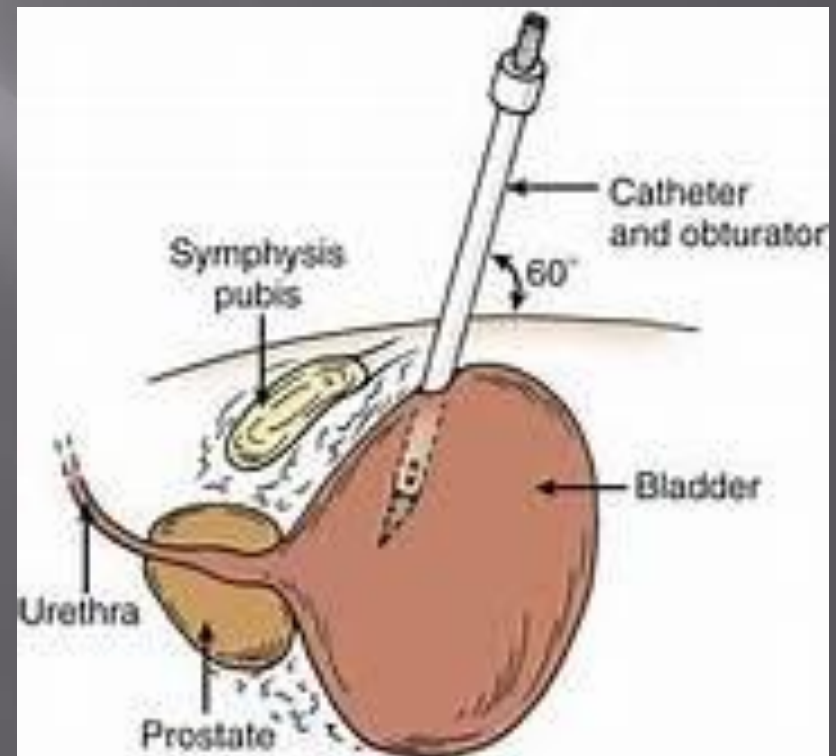
- ▣ Ultrasound commonly uses, as it can provide a measure of post-void residual volume as well as structural abnormalities
- ▣ Ct scan exclude intra abdominal masses
- ▣ MRI/ CT brain exclude space occupying lesions in brain
- ▣ MRI scan of the spine
- ▣ Cystoscopy and urodynamic studies

Treatment

- ▣ Acute urinary retention is a urological emergency and requires prompt treatment.

Treatment

- ▣ In acute urinary retention relieve the retention by passing urethral catheter or supra pubic cystostomy



- ▣ In longer term, treatment depends on the cause
- ▣ E.g BPH may respond medically to alpha blockers and 5 alpha reductase inhibitors or surgically with prostatectomy or TURP.

- ▣ **Catheter**

- ▣ Acute urinary retention is treated by placement of a urinary catheter into the bladder.

- ▣ Can be done by:

 - * Intermittent catheterization

 - * Foleys cathter

Complications

- ▣ Acute urinary retention is a medical emergency and requires prompt treatment.
- ▣ The pain can be excruciating when urine is not able to flow out. Moreover, one can develop severe sweating, chest pain, anxiety and high blood pressure.
- ▣ Other patients may develop a shock-like condition and may require admission to a hospital.

Complications

- ▣ In the longer term, obstruction of the urinary tract may cause:
 - ▣ Bladder stones
 - ▣ Hypertrophy of the detrusor muscle (the muscle that squeezes the bladder to empty it during urination)
 - ▣ Atrophy of the detrusor muscle (atonic bladder is an extreme form)
 - ▣ Hydronephrosis (congestion of the kidneys)
 - ▣ Diverticula (formation of pouches) in the bladder wall.
 - ▣ Serious complications untreated of urinary retention include bladder damage and chronic kidney failure.



THANK
YOU.