

Genitourinary Tract

NCCPA Blueprint

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Disclosures

I have no conflict of interest or non-financial
relationship to disclose

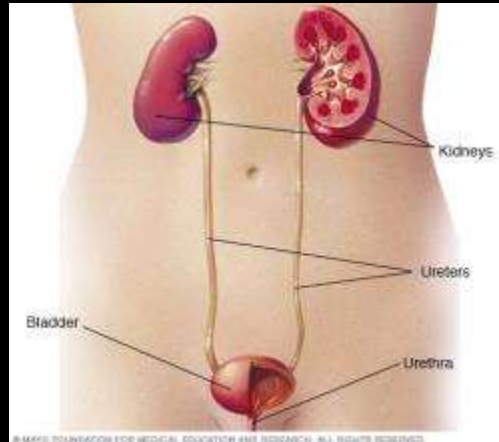
GU Review Objectives

- Recognize the signs and symptoms of the lower urinary tract pathology for the bladder, prostate, urethra, penis, scrotum and discuss the most efficient diagnostic approach.
- Recall the infectious processes of the kidney, prostate, bladder, testicles, & penis.
- Identify the method of diagnosis and gold standard of treatment for malignancy of the kidney, prostate, bladder, testicles, and urethra.
- Select the common medical management of BPH, UTI, pyelonephritis, or epididymitis
- Identify the appropriate management of torsion and priapism.

NCCPA Blueprint

• GU Tract Conditions

- BPH
- Congenital abnormalities
- Cryptorchism
- Erectile Dysfunction
- Varicocele/Hydrocele
- Incontinence
- Nephro/urolithiasis
- Paraphimosis/phimosis
- Testicular torsion

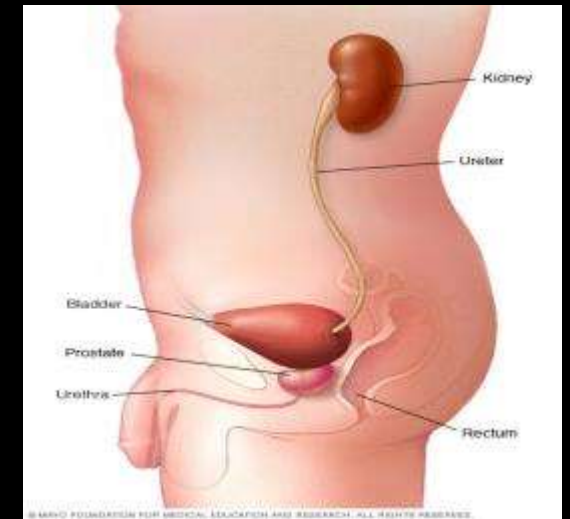


• Infectious / Inflammatory Conditions

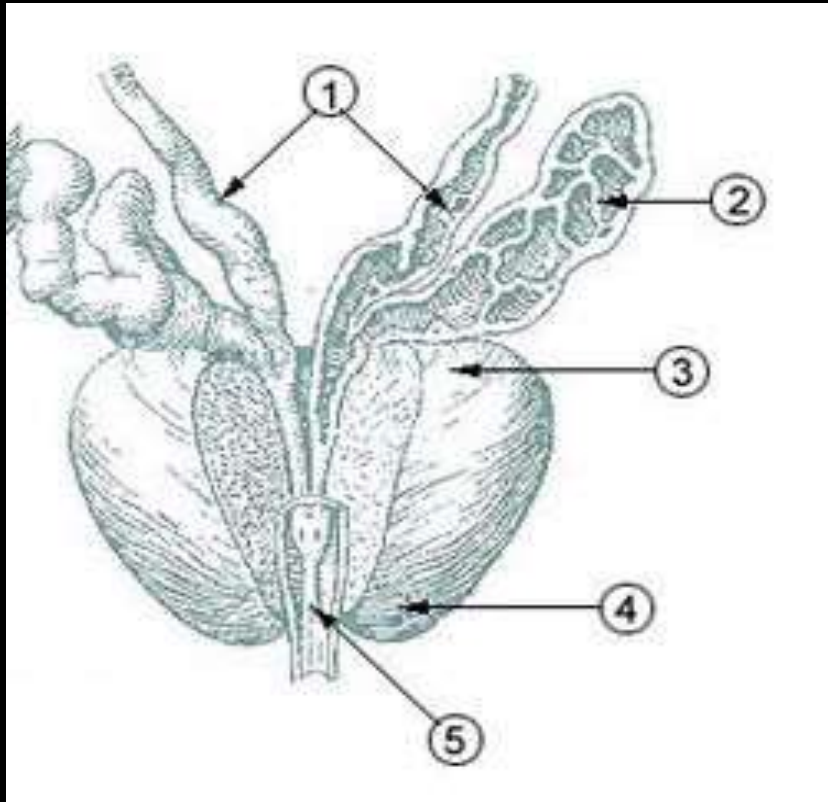
- Cystitis
- Epididymitis
- Orchitis
- Prostatitis
- Pyelonephritis
- Urethritis

• Neoplastic Diseases

- Bladder malignancy
- Prostatic carcinoma
- Renal Cell carcinoma
- Testicular carcinoma
- Wilm's tumor



Prostatic conditions

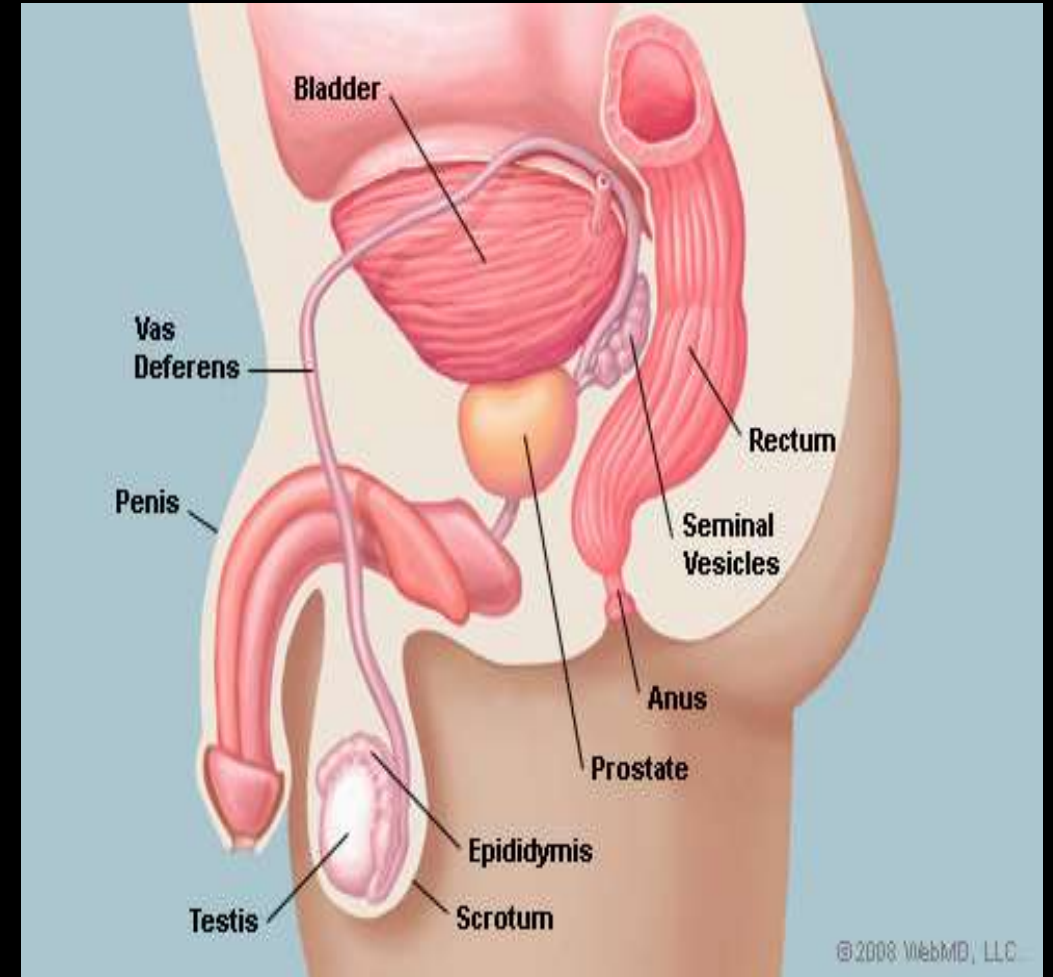


- Benign prostatic hyperplasia
- Prostatitis
- Prostadynia
- Prostatic stones
- Carcinoma of the prostate

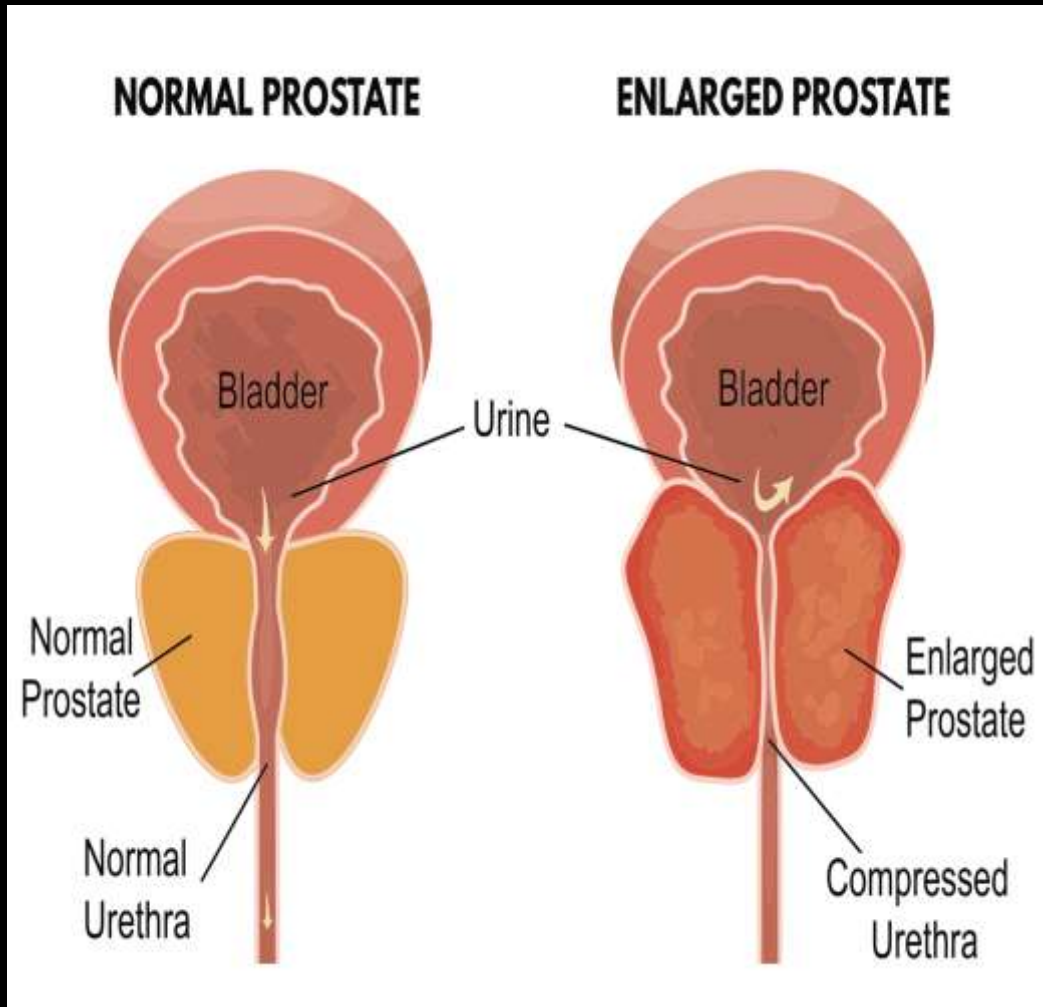
Benign Prostatic Hyperplasia

General information

- Most common pathology
- Usually presents after age 65
- Not life threatening but can lead to serious conditions



BPH Signs & Symptoms



- LUTS (lower urinary tract symptoms)
- Urgency, frequency, nocturia
- Obstructive symptoms, hesitancy, weak stream, strain to void
- Rising creatinine
- Hematuria, hydronephrosis

BPH Evaluation

- **History**

- IPSS /AUASS
- Family history

- **Clinical assessment**

- Urinalysis
- PSA baseline
- DRE

- **Additional testing**

- Creatinine
- PVR
- Ultrasound
- Uroflow
- Urodynamics

International prostate symptom score (IPSS)

Not at all

<1 time in 5

< half the time

Half the time

> half the time

Almost always

Your score _____

Incomplete emptying

Over the past month, how often have you had a sensation of not emptying your bladder completely after you finish urinating?

0 1 2 3 4 5

Frequency

Over the past month, how often have you had to urinate again less than two hours after you finished urinating?

0 1 2 3 4 5

Intermittency

Over the past month, how often have you found you stopped & started again several times when you urinated?

0 1 2 3 4 5

Urgency

Over the last month, how difficult have you found it to postpone urination?

0 1 2 3 4 5

Weak stream

Over the past month, how often have you had a weak urinary stream?

0 1 2 3 4 5

Straining

Over the past month, how often have you had to push/strain to begin urination?

0 1 2 3 4 5

None

1 time 2 times

3 times

4 times

5 times or more

Your score _____

Nocturia Over the past month, many times did you most typically get up to urinate from the time you went to bed until the time you got up in the morning?

0 1 2 3 4 5

[http://www.news-medical.net/health/The-International-Prostate-Symptoms-Score-\(IPSS\).aspx](http://www.news-medical.net/health/The-International-Prostate-Symptoms-Score-(IPSS).aspx)

BPH Treatment & Follow-up

- **Treatment**

- Behavior modification
- Medical management
- Surgical options



- **Follow up**

- Once diagnosis is made, 3 months to assess symptom improvement
- Stable, q 6 or 12 months

BPH Treatment

- **Behavior Modification**

- Testosterone therapy
- OTC medications
- Diet

- **Medical management**

- Alpha blockers
- 5 alpha reductase inhibitors
- PDE5 inhibitors
- Anticholinergics

- **Surgical options**

- Transurethral resection of the prostate
- Green light
- TUIP
- TUNA
- Simple prostatectomy

BPH Medical Management

- **Alpha blockers**

- Less selective
 - Terazosin
 - Doxazosin
 - Prazosin
- More selective
 - Tamsulosin
 - Alfuzosin
 - Silidozin
- Relaxation of smooth muscles

- **5 Alpha reductase inhibitors**

- Treat daily for 3 – 12 months
 - Shrinks the prostate 70 - 90%
 - Reduces vasculature
 - Prevents conversion of DHT to testosterone
 - Finasteride and Dutasteride
- **Anticholinergics**

Intraoperative Floppy Iris Syndrome

Recommendation: Men with LUTS secondary to BPH for whom alpha-blocker therapy is offered should be asked about planned cataract surgery. Men with planned cataract surgery should avoid the initiation of alpha-blockers until their cataract surgery is completed

Prostatitis

• Symptoms

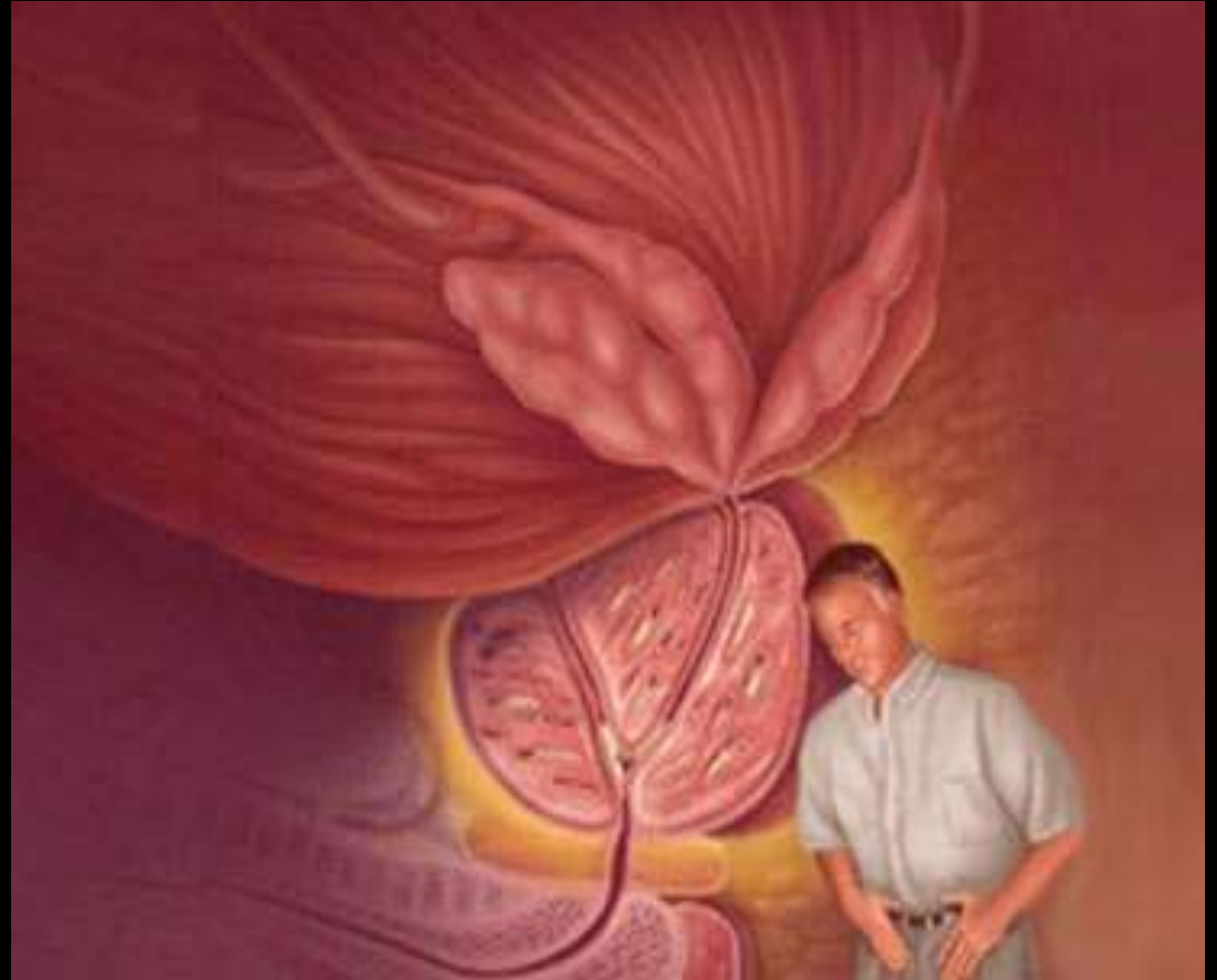
- Urge, frequency, hesitancy
- Worse with sitting
- “headache” in the pelvis
- Better with defecation, hot bath, benzos
- Worse after intercourse
- Rectal, perineal or genital pain
- Stress can worsen sx

• Treatment

- Rarely infectious, often treated with antibiotics
- Alpha blockers may improve symptoms briefly
- Medications, Procedures and Surgery Rarely Help
- Medical Tests Find No Disease
- Long term sequelae - Depression / Anxiety / Reduced Quality of Life

Prostatitis options

- Rule out typical pathology
 - Bacterial, sterile
- Urge diet and life style changes
- Consider interstitial cystitis or chronic pelvic pain
- Refer for pelvic floor rehabilitation



Prostate Cancer

- **Symptoms**
 - Similar to BPH symptoms
- **Testing**
 - PSA debate
 - Baseline at 40 if at risk, 50 otherwise.
- **Diagnosis**
 - TRUS biopsy
- **Treatment**
 - Surgery
 - Radiation Therapy
 - Active surveillance
- **Follow up**
 - First yr, PSA and SX q 3 mos
 - 1-5 yrs: PSA, PE, SX q 6mos
 - 6-10 yrs PSA, PE, SX q 12 mos

PSA Controversy

- Test is sensitive, not selective
- PSA increases due to
 - Enlargement
 - Prostatic stimulation
 - Infection/inflammation
 - Age
- Check q 6-12 months with risks
 - Velocity, FMH,
- Base line check
 - 40 FMH & African heritage
 - 45 FMH & Caucasion or Hispanic

PSA Testing

- Explain the test
- Ask the patient
- Test before DRE
- DRE ANNUALLY

- Age specific

• 40 – 49	0 – 2.5
• 50 – 59	0 – 3.5
• 60 – 69	0 – 4.5
• 70 – 79	0 – 6.5

- PCA3

- Free and Total PSA

Prostate Cancer Treatment

- **Active Surveillance**

- Age, stage, health status
- Gleason Score
- Annual re-biopsy

- **Radiation Therapy**

- IMRT to prostate
- Whole pelvis
- Brachytherapy

- **Surgery**

- Open prostatectomy
- Robotic prostatectomy

- **Androgen deprivation**

- Leuprolide, goserelin
- Bicalutamide, nilutamide

- **HR Prostate cancer**

- Zytiga
- Xtandi

Prostate Cancer- Life After Treatment

- Healing
- Catheter
- Stress Incontinence
- Erectile dysfunction
- Depression

Scrotal pathology

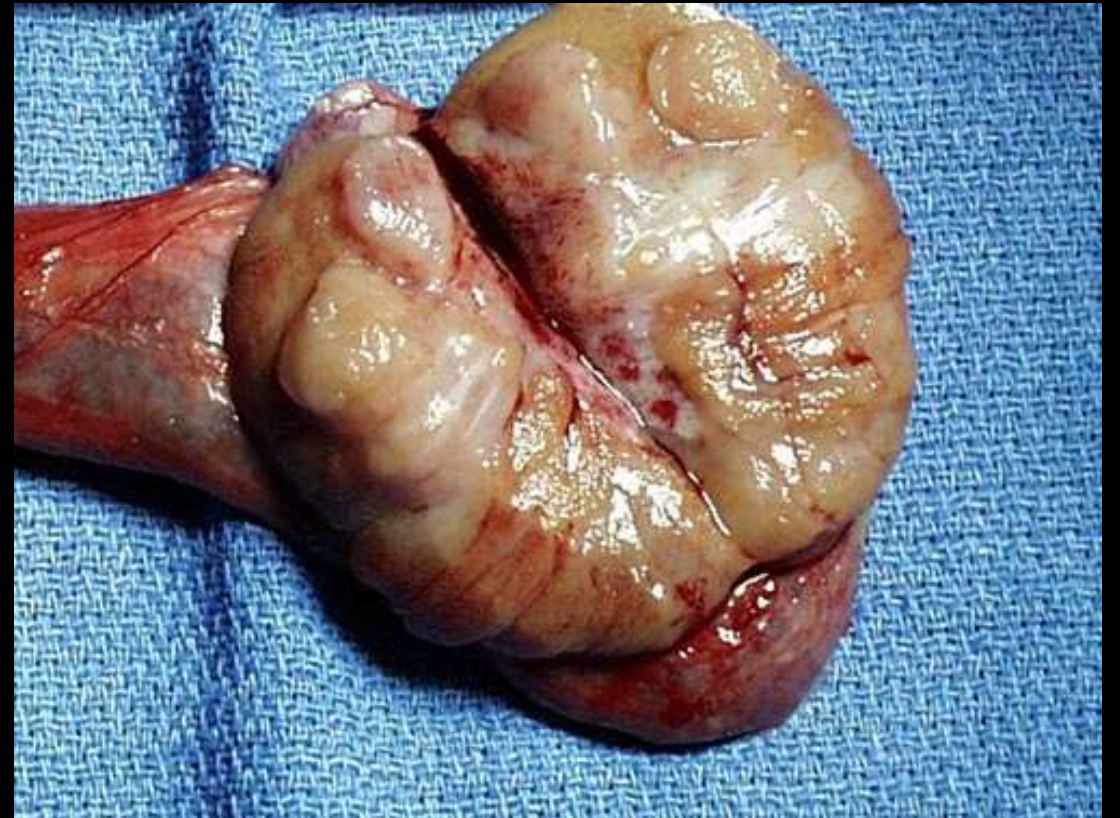
- Testicular Malignancy
- Testicular torsion
- Benign masses
- Inflammation/Infection
- Fournier's gangrene
- Cryptorchidism
- Hypogonadism



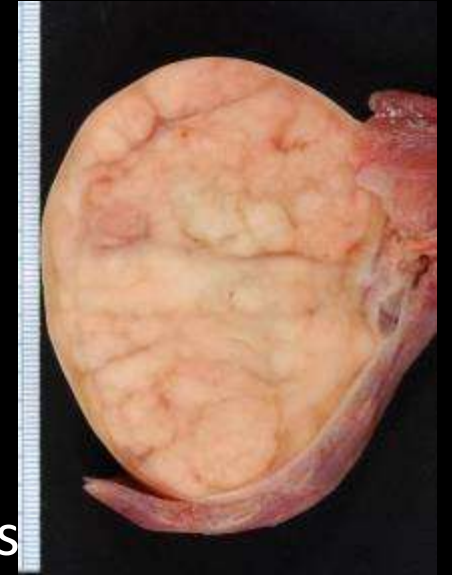
Testicular Malignancy

Seminoma

- Pure seminoma
- Germ cell tumors
- Comprises 82-85% of all seminomas
- Most commonly occurs in 30-40 year olds and is rare in adolescents /children
- 10-15% contain syncytiotrophoblastic elements
- Traditionally has a very slow growth rate



Scrotal Pathology-Testicular Malignancy



- **Seminoma**

- Pure, most common

- **NSGCT**

- Risk increased with cryptorchidism

- **Embryonal Cell**

- 20%
- Infant/children
- Produces AFP & bHCG

- **Teratoma**

- 5%
- Both children & adults

- **Choriocarcinoma**

- AFP low
- 67% have low fertility
- Hemotogenous spread

- **Teratocarcinoma**

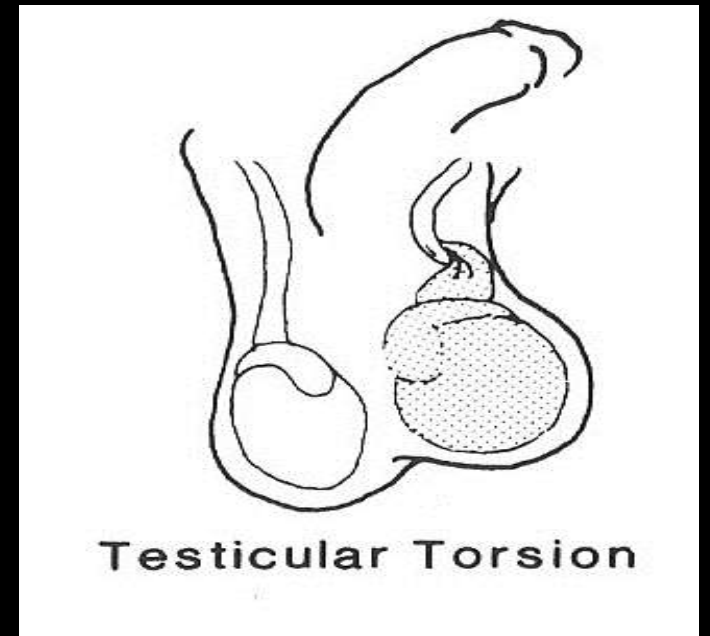
- **Mixed Cell Tumor**

Scrotal Pathology- Seminoma diagnosis

- **Tumor markers** play an important role in diagnosis, staging and treatment options
 - beta-HCG, AFP, LDH
 - CBC, Creatinine, LFT
- **Transillumination, ultrasound**
- **CXR**
- **CT abd/pelvis after orchiectomy**
- **Treatment**
 - Surgery
 - Staging
 - Cell type
 - Pure seminoma
 - Responds well to XRT
 - NSGCT
 - Responds best to platinum based chemotherapy

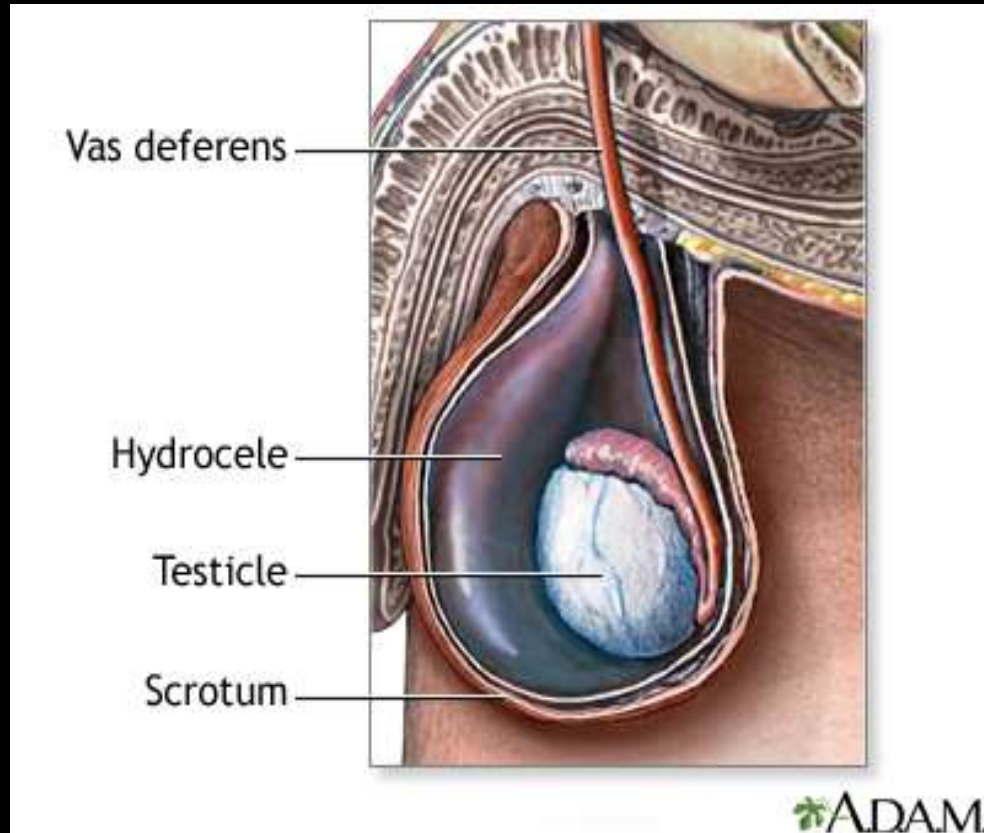
Scrotal pathology - Torsion

- Twisting of the testis at the spermatic cord blocking blood flow
- Usually ages 12-18
 - Can recur
 - Infants and older men with trauma
- Pain, swelling, cold testicle, abdominal pain
- Prehn's sign, negative
- Ultrasound definitive
- Surgery must be done < 4-6 hours from incident.



Scrotal Pathology-Benign masses of the testicles

Hydrocele



Varicocele



Pathology	Pain	Trans illumination	Urinalysis	Ultrasound	Blow Flow
Testicular torsion	yes	no	+/-	Solid	Negative
Testicular tumor	No	no	Negative	Solid	Normal
Testicular rupture	Yes	no	Negative	Complex	+/-
Epididymitis	Yes	no	Positive	Complex	Increased
Hydrocele	No	yes	Negative	Cyst	Normal
Spermatocele	no	+/-	Negative	Cyst	Normal
Inguinal hernia	+/-	+/-	Negative	Complex	Normal

Scrotal pathology - Inflammation/Infection

• Orchitis

- Painful, unilateral
- Not relieved with elevation
- Warm compresses
- Doxycycline



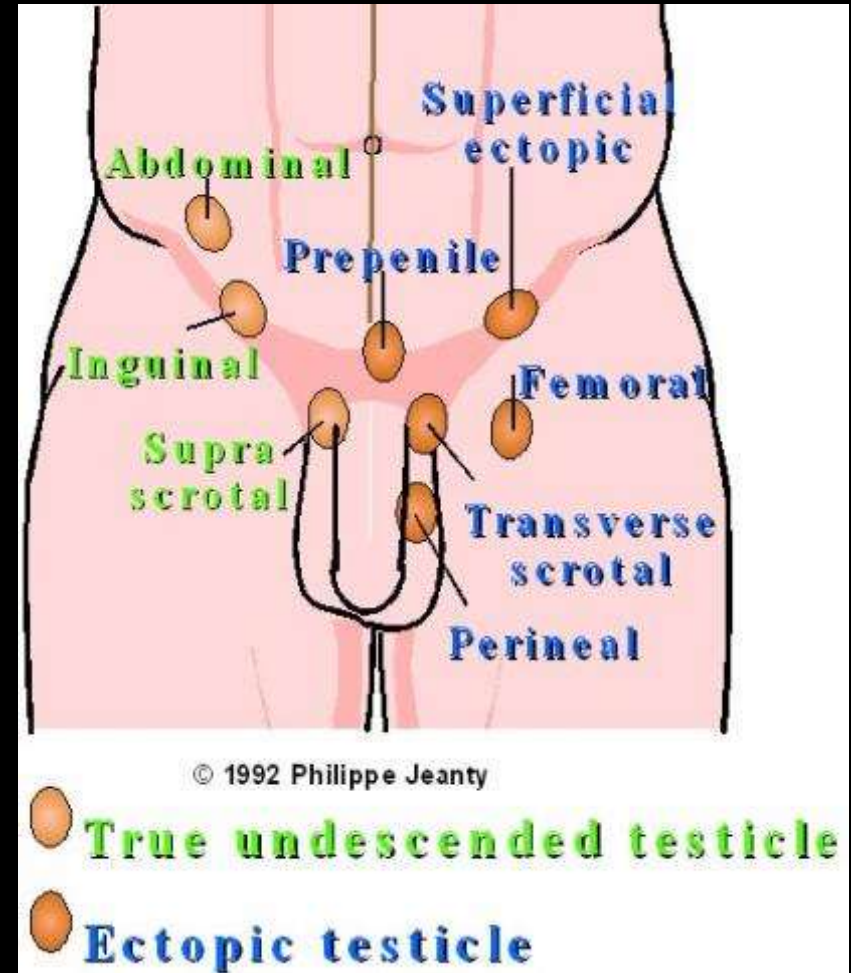
• Fournier's Gangrene

- Immediate surgery
- Antibiotic therapy



Scrotal pathology - Cryptorchidism

- One or both of the testes fail to descend from the abdomen into the scrotum.
- Increased risk for testicular cancer
- Surgical correction



Hypogonadism

- **Incidence**

- More use with advertising
- Risks:
 - Steroid use
 - Obesity
 - OSA
 - True hypogonadism

- **Diagnosis**

- Subjective : ADAM score
- Objective
 - Free & Total Testosterone
 - PSA
 - LH, FSH, Prolactin, BHcG

- **Treatment**

- **Follow up**

- Monthly till stable
- Every 6 – 12 months
- CBC, T (f&t), PSA, PE