



Pathology of the Male Reproductive System

Testis and Epididymis

Failure of Testis to Descend

- Testis are not always in scrotum at birth.
- Testes form in abdomen with kidneys
 - Migrate to scrotum
- May get stuck in the inguinal canal
- Complications of not repairing
 - Sterile
 - Increased risk of testicular tumors later.
 - Inguinal hernia

Inflammation

- Bug
 - Ascending infection in most cases.
 - GC
 - Mumps
 - TB
 - Syphilis
- Autoimmune

Epididmitis



Vascular Related

- Torsion
- Venous compression
- Hemorrhagic infarct
- Young men
- At night
- Very painful
- Can be reduced



Scrotal Masses

- Testicular
 - Tumors (solid)
- Epididymal
 - Inflammatory (rubor, dolor, calor...)
- Peritesticular
 - Hernia
 - Hydrocele (cystic, transilluminates)
 - Vascular in nature

Testicular Tumors

- Most are malignant
 - Excellent results with treatment.
 - Must look for 'markers' before removal
- Germ line (actual reproductive cells)
 - Seminoma
 - Embryonal
 - Choriocarcinoma
 - Mixed pattern
- Non-germ line
 - Specialized supportive cells
 - Leydig, may be hormonally active

Tumor Markers

- Some tumors produce agents measurable in the blood.
 - Embryonic tissue markers
 - Beta-HCG
 - Placental marker
 - We measure this in pregnancy tests
 - Alpha-feto protein
 - Marker associated with embryonic gut

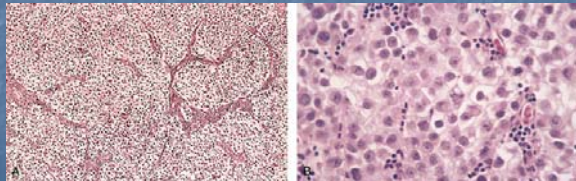
Seminoma

- Most common type
- Young men
- Curable
- Arises from sperm producing cells
- Several histologic types.
- Lymphocytes
- No markers



Seminoma

- Little fried egg looking cells.
- Lymphocytes
- No production of Bet-HCG or Alpha-fetoprotein



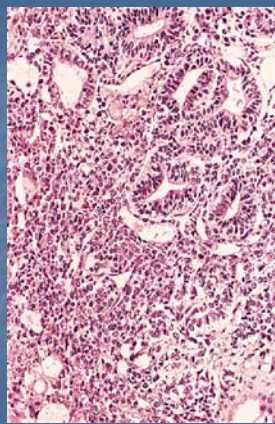
Embryonal Carcinoma

- Aggressive tumor
- 20-30 years
- Areas of hemorrhage and necrosis
- Two histologically distinct cell types.
- Markers +/-
- Lance Armstrong



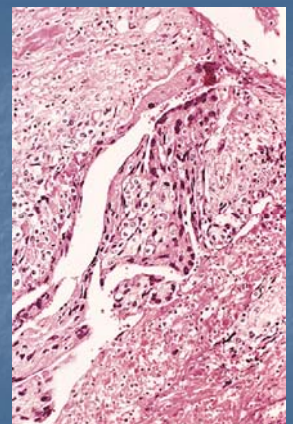
Embryonal Ca

- Two tissue types
 - Stroma
 - Glands
- Metastasizes widely
- Markers +/-



Choriocarcinoma

- Placental elements
 - Syncytiotrophoblasts
 - Make Beta-HCG
- Typically part of a 'mixed lineage' tumor.
- Highly aggressive
- This element spreads early.

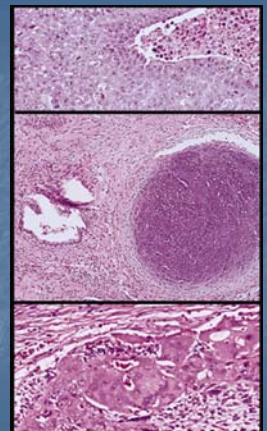


Teratoma



Teratoma

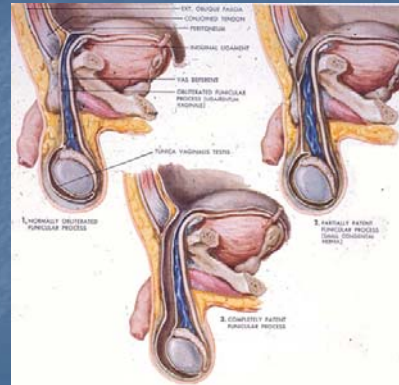
- Aggressively malignant
- Three germ lines
 - Ectoderm
 - Endoderm
 - Mesoderm
- Markers +/-



Leydig Cell Tumor

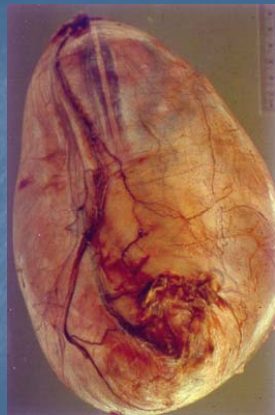
- One of several so-called 'specialized stromal tumors.
 - Non-germ line
- Benign generally
- Hormonally active
 - Androgens
 - Estrogens
 - Gynecomastia
 - Sometimes even corticosteroids

Hydrocele

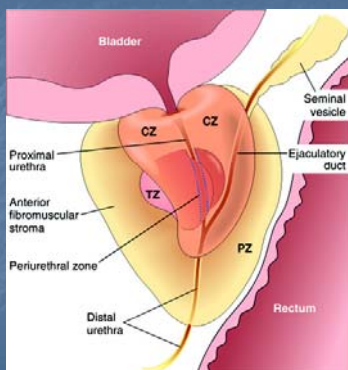


Hydrocele

- Fluid filled scrotal cyst.
- Benign
- Often with inguinal hernia
- Transilluminates
- Fluid will reaccumulate if aspirated.
- Can be large

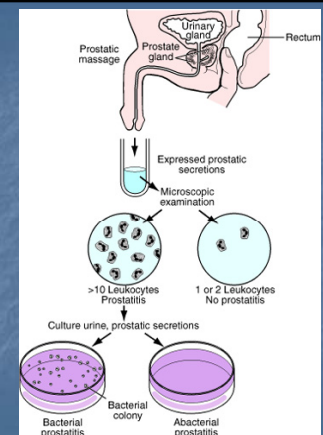


Prostatic Disease



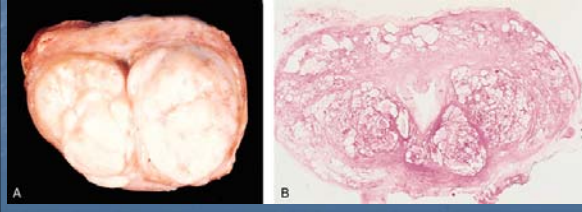
Prostatitis

- Acute bacterial
 - Ascending
 - E. coli
- Chronic bacterial
 - Low back pain
 - Dysuria
 - Suprapubic pain
 - Common bugs
- 'Abacterial'
 - Chlamydia



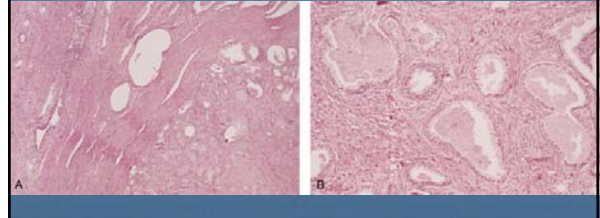
Benign Prostatic Hyperplasia

- Very common
- Androgen mediated growth (DHT).
- Central zone proliferates
 - Stroma &
 - Glands
- Minimal if any increased cancer risk

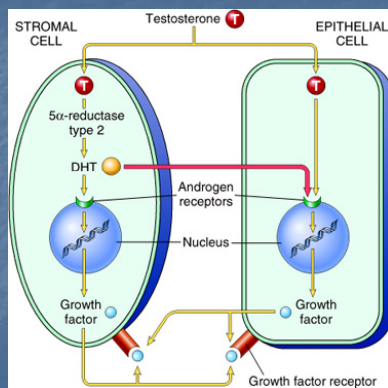


Benign Prostatic Hyperplasia

- Nodular growth pattern
- Some chronic inflammation
- Glands always have a double layer of epithelium
 - Columnar &
 - Reserve layer

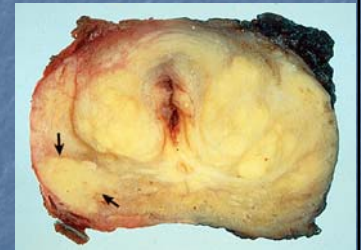


Benign Prostatic Hyperplasia



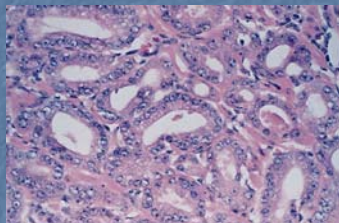
Prostate Cancer

- Very common
 - Blacks &
 - Whites
 - Rare in Asians
- Incidence increases with age.
- Peripheral zone
- PSA
- Family history

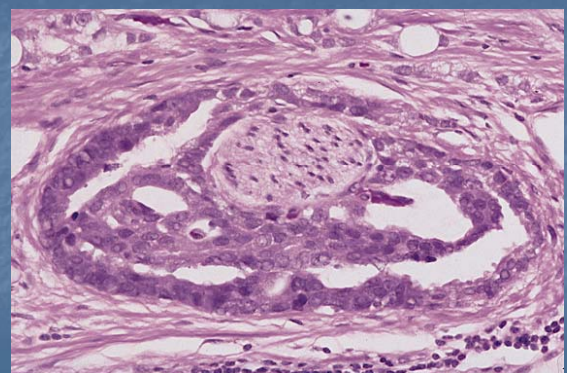


Prostate Cancer

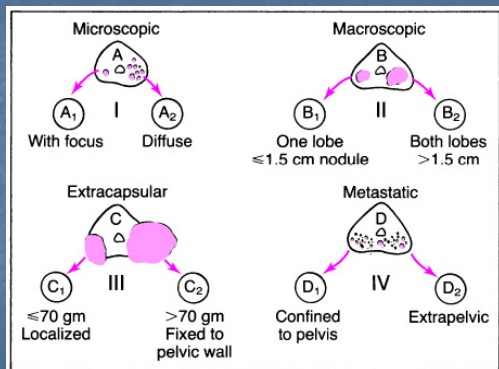
- Adenocarcinoma
- Single layer of epithelium
- Gland-within-gland
- LN and Bone mets
 - Osteoblastic &
 - Osteolytic
- Treatment
 - Surgery &
 - Hormone manipulation



Prostate Cancer

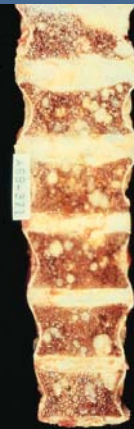


Staging Prostate Cancer



Bone Metastases

- Spinal mets ->
- Painful
- May cause lots of reactive bone growth at the site of the met
 - Osteoblastic
- May cause bone destruction
 - Osteolytic



Pathology of the Penis

Congenital Abnormalities

- Hypospadias
 - Urethral opening on ventral surface of penis.
- Epispadias
 - Urethral opening on dorsal surface of penis.
- Both associated with undescended testis

Circumcision, Yes or No

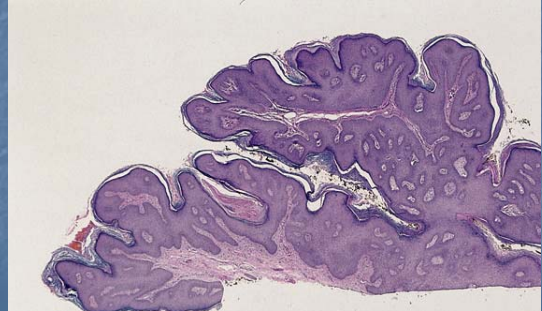
- Maybe helpful in a small number.
- In previous years it did make a difference.
- Phimosis
 - Orifice of the prepuce is too small.
 - Paraphimosis, inflammation and constriction leads to urinary problems.
 - ? Risk of cancer

Penile Tumors

- Papillomas
- HPV
 - Some are dangerous serotypes.
 - Cause unregulated epithelial growth



Papilloma

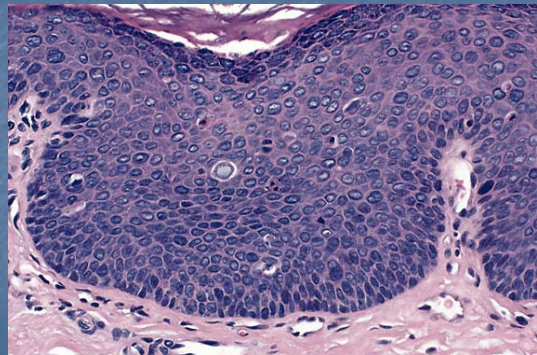


Squamous Carcinoma

- In situ
- Invasive
- Ulcerative
- HPV
 - 16
 - 18
- Regional lymph nodes.
- Metastasizes widely.



Squamous Carcinoma



Sexually Transmitted Diseases

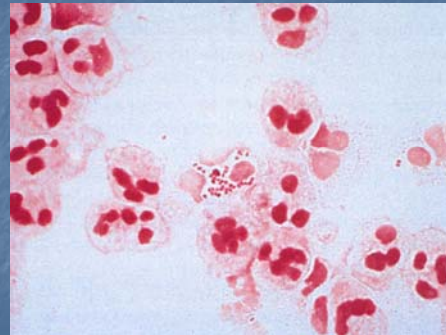
- HPV
- Hepatitis B
- Syphilis
- Gonorrhea
- HIV
- Chlamydia

Gonorrhea

- *Neisseria gonorrhea*
 - Gram negative
 - Diplococcus
- Mucosa
- Acute inflammation!
- Scarring
- Sterility
- Epididymitis



Neisseria gonorrhea



Syphilis

- Spirochete
 - *Treponema pallidum*
- Arteriole is target
- Vasculitis
- Three stages
 - Primary: chancre
 - Secondary: rash
 - Tertiary: systemic
 - CNS
 - Aorta
- Congenital



Treponema pallidum

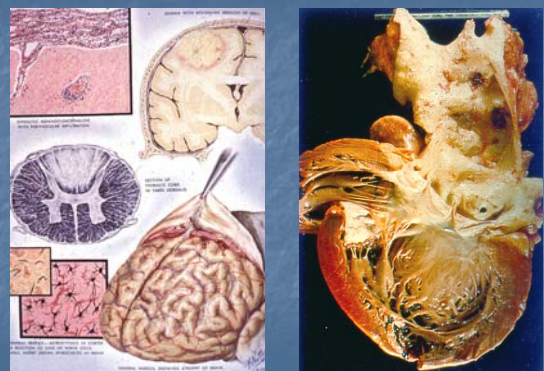
- Spirochete
- Infects arterioles
 - Destroys them
- Rash
- Vasovascular of aorta
- Can't culture
- Serology
 - VDRL
 - Specific antibodies



Secondary Syphilis



Tertiary Syphilis



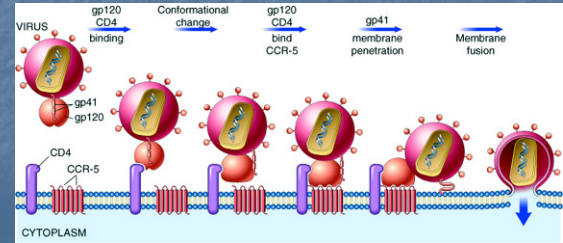
Congenital Syphilis

- Infected during pregnancy
 - Third trimester
- Virtually all systems involved
- Periosteal involvement leads to many skeletal deformities

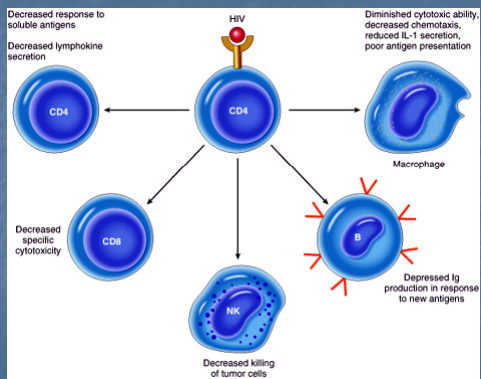


AIDS

- Human immunodeficiency virus
 - Several strains
- T-cells infected
 - Antibody regulation
 - Tumor and cell mediated response



HIV



HIV

