

MALE PATHOLOGY (NON-TUMOR)

Franto Francis, M.D. Ph.D; Office: Phone: 469-419-1537

Email: franto.francis@utsouthwestern.edu

STATEMENT OF PURPOSE OF THIS LECTURE:

To discuss congenital anomalies and non-cancerous inflammation of the male reproductive tract

LEARNING OBJECTIVES:

- Recognize congenital anomalies of the penis.
- List commonly encountered scrotal masses.
- Identify the features of cryptorchidism and testicular torsion.
- Name inflammatory conditions affecting testis, epididymis and prostate, and their common etiological agents.

PENIS AND SCROTUM:

Congenital Anomalies:

Hypospadias: urethra opens ventrally, more common

Epispadias: urethra opens dorsally

Phimosis:

Definition: orifice of the prepuce (foreskin) is too small to retract over the glans

Etiology: anomalous development or inflammatory scarring

Sequelae: interferes with hygiene; permits accumulation of smegma, which can lead to infections, but probably not carcinoma (despite the implication of smegma in carcinogenesis in older literature).

Scrotal masses:

Hydrocele: Scrotal swelling due to fluid collection between two layers of tunica vaginalis in scrotum

Congenital: patent processus vaginalis resulting in hydrocele and inguinal hernia in infants

Acquired: in adults, due to tumor infection or trauma resulting in scrotal swelling; diagnosis by ultrasound or transillumination test; Rx – remove cause

Spermatocele: fluctuant cystic mass arising from dilated efferent ductules of rete testis or epididymis, lined by cuboidal epithelium and containing semen

Varicocele: dilatation of testicular veins causing scrotal mass, “bag of worms” appearance, may contribute to infertility

TESTES & EPIDIDYMIS

Vascular disturbances:

Torsion:

Definition: twisting of the spermatic cord leading to hemorrhagic infarction

Etiology: may or may not be related to trauma, predisposing factor is increased mobility, due to absence of the gubernaculum (scrotal ligament) or atrophy

Treatment: surgically untwisting the cord within 6 hrs; thereafter requires orchiectomy.

Congenital Anomalies:

Cryptorchidism

Definition: undescended testis

Incidence: 10% at birth, 1% at 1yo, bilateral in 25%

Sequelae:

Atrophy and sterility.

At least 10X increase in incidence of germ cell tumors.

The increased risk is bilateral even with unilateral cryptorchidism, although the risk for the normally descended testis is not as high as the risk for the cryptorchid testis. This indicates that it is not just the physical location of the cryptorchid testis that leads to the increased risk, but that there is something inherently wrong in testicular development leading to the increased risk.

Treatment: orchiopexy by 2-3 yo may preserve fertility, although it is questionable whether or not orchiopexy leads to reduction of cancer risk. However, it is much easier to detect a tumor in a scrotal testis versus a cryptorchid testis.

Inflammation:

Epididymitis

Definition: acute or chronic inflammation of epididymis, usually bacterial

Acute epididymitis: Complication of sexually transmitted infection (gonorrhea, chlamydia, in younger men) or UTI (E. Coli, in older men); suppurative inflammation causing intrascrotal pain and tenderness, +/- fever

Persistent chronic epididymitis: chronic gonorrheal infection with chronic inflammatory cells, fibrosis and eventually infertility

Tuberculous: uncommon, usually sequelae of TB elsewhere; caseating granulomas

Orchitis

Definition: acute or chronic inflammation of testis, usually part of epididymo-orchitis, or maybe isolated infection

Gram negative bacterial orchitis: Most common, usually following UTI, causes intra- or peritesticular suppuration

Syphilitic orchitis: congenital or acquired, two morphologic forms 1/interstitial chronic inflammation, with obliterative endarteritis with perivascular cuffs of chronic inflammatory cells, and 2/ granulomatous inflammation, “gummas”

Mumps orchitis: unilateral, sequelae in ~20% mumps patients, decreased incidence with universal immunization; interstitial inflammation → destruction of seminiferous epithelium

Granulomatous autoimmune orchitis: middle aged men present with painful testicular enlargement or painless mass; diffuse noncaseating granulomas involving seminiferous tubules by, idiopathic / without identifiable organisms

PROSTATE

Inflammatory conditions:

Acute bacterial prostatitis: *E. coli*

Chronic bacterial prostatitis: *E. coli*

Chronic abacterial prostatitis: most common, cultures negative, thus the etiology is unknown, but possibilities include *Chlamydia*, *Ureaplasma*

Male Pathology Practice Questions

1. Which of the following statements is NOT true about undescended testes (cryptorchidism)?
- A. The complications of undescended testis include sterility and increased incidence of germ cell tumors (GCT).
 - B. The increased risk of GCT is seen in the undescended testis only, and opposite testis is unaffected.
 - C. Cryptorchidism incidence is ~10% at birth and ~1% at 1 year of age.
 - D. Surgical treatment is by orchiopexy (moving undescended testis into scrotum), and if done at a young age can preserve fertility
 - E. It is unclear if orchiopexy completely eliminates risk of GCT development, although tumor detection in scrotal testis may be easier than in abdominal testis
2. Which of the following is a CORRECT statement?
- A. Epispadias is more common than hypospadias.
 - B. Spermatocele is the collection of clear fluid within two layers of tunica vaginalis in the scrotum.
 - C. Tuberculous epididymitis is a relatively common entity and is usually a primary infection in the epididymis
 - D. Granulomatous autoimmune orchitis is seen in middle aged males and shows diffuse noncaseating granulomas
 - E. Bacterial orchitis is frequently caused by Gram positive organisms

Answers
1. B
2. D