

## Male GU System

There are 3 major goals

- Attempt to distinguish the testis from its associated structures - epididymis, vas deferens and blood supply. Combining the structures as "epididymo-orchitis" although common is not helpful because most testicular problems are vascular, or transmitted through the blood, while the other structures are best considered as extensions of the urinary system. Further, malignancy is almost completely limited to the testis itself
- Understand the need to maintain a high index of suspicion for testicular torsion, an emergency with a less than 12 hour window of opportunity for successful intervention
- Understand also that testicular cancer, although uncommon, occurs in the athletic age group and is the prototypical curable cancer



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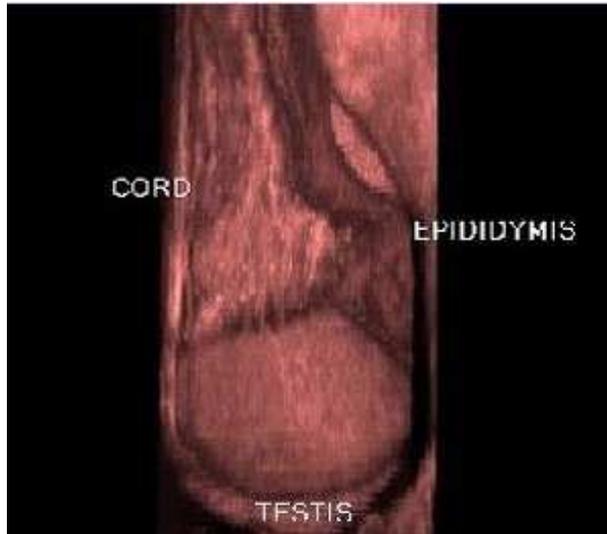
- Testicular torsion

- Hydrocele

- Epididymitis

- Varicocele

- Orchitis



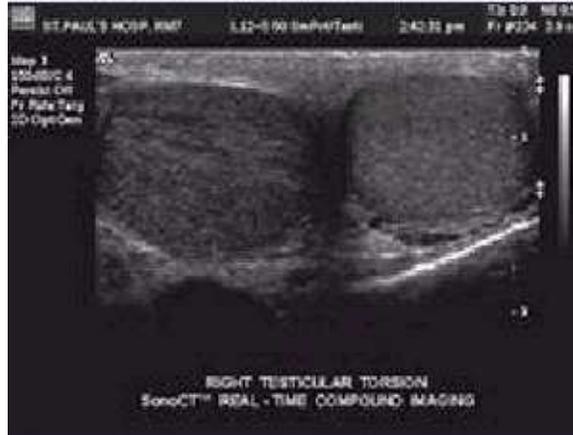
- Testicular cancer

- Testicular trauma

## Torsion

Torsion and acute epididymitis are the most common causes of acute scrotal pain. This twisting of the spermatic cord that results in obstruction of the blood vessels is more common in children, but accounts for 20% of acute pathology in post-pubertal males.

- Prompt diagnosis is essential. Surgery performed within 12 hours results in about 70% salvage - much lower with delay
- Differentiating between these entities is often difficult on physical examination and pulsed and color Doppler ultrasonography is helpful



## Presentation

- Sudden onset - unilateral testicular pain possibly followed by scrotal swelling and erythema, less commonly, lower abdominal or inguinal pain
- Nausea and vomiting - 50%
- Previous remitting episode - 40%
- Testis positioned horizontally rather than vertically
- Peak incidence - infancy and adolescence, rare after 30

## Diagnosis and Management

- High index of suspicion
- Urgent referral on suspicion
- Timeliness is essence

## Epididymitis

Inflammation or infection of the epididymis, lying on posterior surface of testicle

- Most common cause of intrascrotal inflammation
- Usually due to retrograde extension of organisms from vas deferens

## Bacteriology

- prepubertal - E. coli
- less than 35, Chlamydia trachomatis - 50%
- Neisseria gonorrhoea - second
- Older than 35 - E. coli
- It has been postulated that chemical epididymitis due to reflux of sterile urine is an unusual entity (lifting, weight room, etc.)

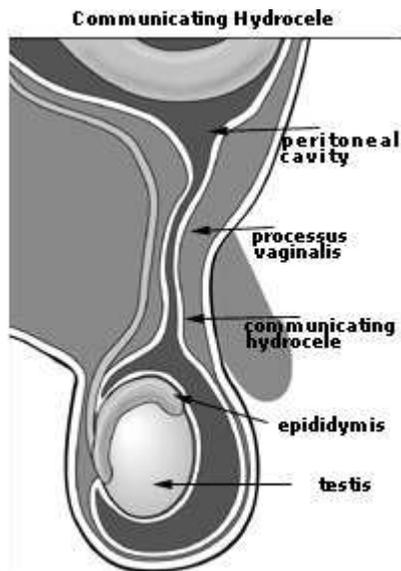


# Hydrocele

## Definition

A collection of serous fluid from defect or irritation in tunica vaginalis of scrotum. Most are asymptomatic or sub-clinical and the usual presentation is a painless, enlarged, scrotum and a sensation of heaviness or dragging may be reported.

The size may decrease with recumbency and increase in the upright position. They are bilateral in 7-10% of cases and are often associated with a hernia, especially on right



## **Exam**

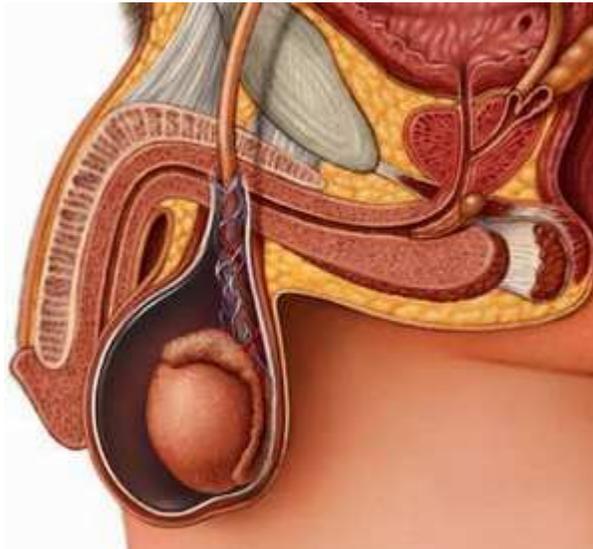
- Located superior and anterior to testis
- Abdominal/testicular tenderness absent
- Light source shines through brightly (transillumination)

## **Differential diagnosis**

- Torsion
- Orchitis
- Hernia

## **Treatment**

- Surgery in infant/congenital hydrocele
- None if adult and asymptomatic



## Varicocele

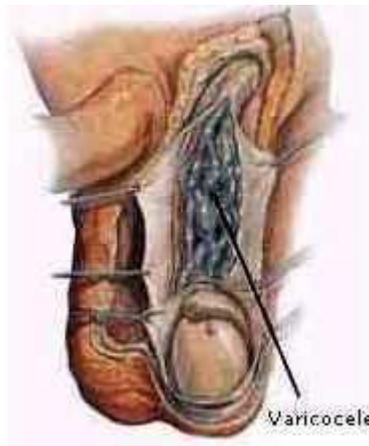
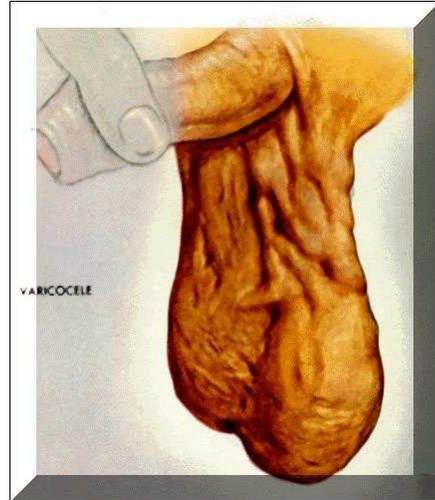
### Definition

Dilation of pampiniform venous plexus and internal spermatic vein, Occurs in approximately 15-20% of all males and 40% of infertile males and is much more common (80-90%) on left than right because of anatomic factors. It is traditionally described as a "bag or worms" when palpated through the scrotum. Diagnosis is usually self evident after palpation, particularly in the upright position but differential diagnosis includes:

- Torsion
- Orchitis
- Hernia

### Treatment

Although varicocele is recognized as a cause of decreased testicular function, recent studies suggest that the fertility rate is not improved by treatment



# Orchitis

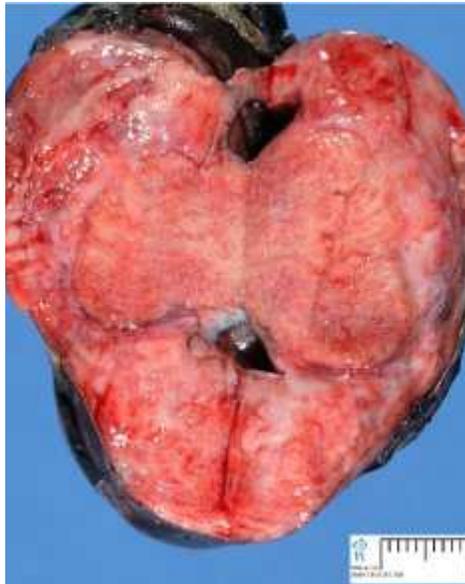
## Definition

Acute inflammatory reaction of testis secondary to infection. The majority are associated with viral mumps but other viruses/bacteria can be involved.

Approximately 20% of prepubertal patients with mumps develop orchitis which rarely occurs postpubertally. Bacterial orchitis is even rarer. Although unilateral testicular atrophy is said to occur in 60%, sterility is rarely a consequence.

## Presentation

- Testicular pain and swelling which varies from mild discomfort to severe pain
- Fatigue, malaise, fever and chills
- Follows mumps parotitis by 4-7 days

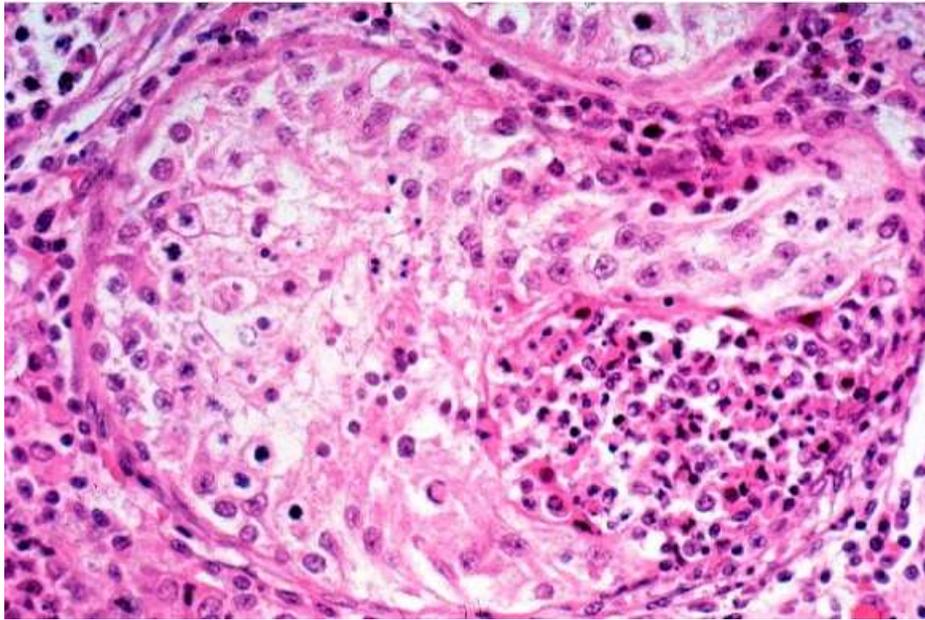


## Differential Diagnosis

- Testicular tumor
- Hydrocele
- Torsion

## Management

- Urgent consultation for surgery if torsion is considered possible. Use color Doppler ultrasound if diagnosis remains unclear
- Supportive treatment for viral orchitis but appropriate antibiotics for suspected bacterial infection



## Testicular cancer

Although relatively rare - about 7,000 cases yearly in US, compared with 180,000 cases of lung cancer and 210,000 cases of prostate cancer, it is the most common neoplasm in men between ages 15 and 35.

Germ cell tumors, which have become a model for curable neoplasm, constitute the majority of those cancers. Other types make up less than 5%. Germ cell tumors are seen principally in young white patients and the occurrence in African-American and Asian patients is rare.

### Presentation

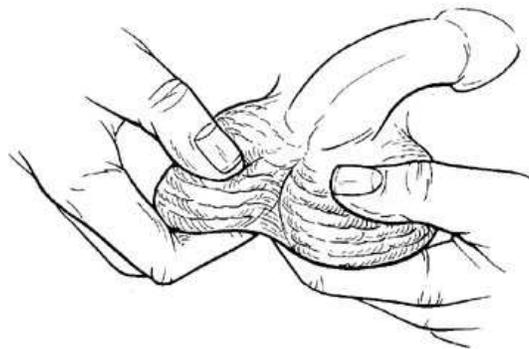
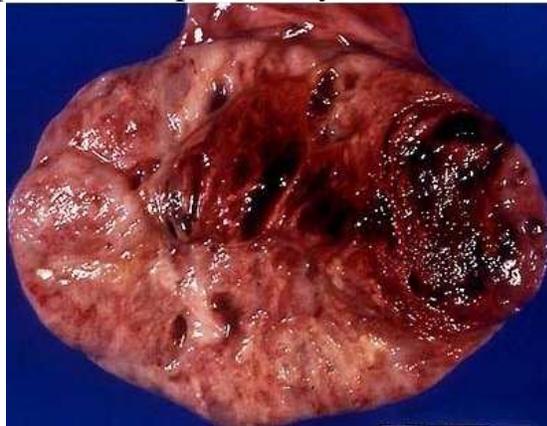
- Painless unilateral testicular mass often mistaken for epididymitis or orchitis in early stages
- Some degree of pain and discomfort later but acute pain is rare
- May present with back pain from metastasis to retroperitoneal lymph nodes or respiratory symptoms from pulmonary metastasis

### Diagnosis

- Diagnosis is suspected when a white male between 15-35 presents with above. Another peak in incidence occurs after age 50, when the most common tumor is lymphoma, followed by seminoma

### Management

Promotion of self-examination, sonography for testicular enlargement and urgent referral on further suspicion



## Testicular trauma

This is a relatively uncommon injury and blunt trauma, almost always unilateral, accounts for 85%, the most common being sports injury

### Presentation

- May manifest as hematocele or ruptured testis in which tunica albuginea is violated
- Absence of scrotal swelling and hematoma may indicate relatively benign injury but 80% of hematoceles are associated with testicular rupture
- Complete absence of pain with scrotal swelling and hematoma raises possibility of infarction or torsion

