Objectives:

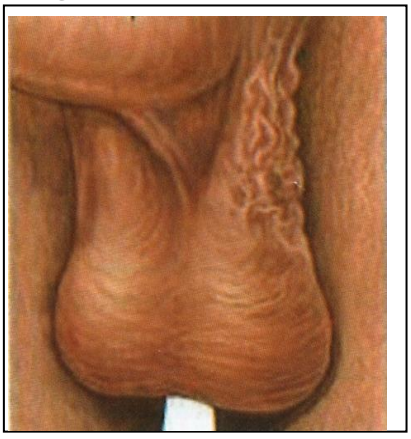
1. To understand the definition and causes and treatment of varicocele and hydrocele.
2. To understand the causes, presentation and treatment of epidido orchitis.

Varicocele

Dilated, tortuous veins within the pampiniform plexus that drain the testis
It is the most surgically correctable cause of male subfertility.
is found in approximately 15% of the general population, 35% of men with primary infertility, and 75% to 81% of men with secondary infertility.

Surgical anatomy

The veins draining the testis and the epididymis form the pampiniform plexus. The veins gradually join each other as they traverse the inguinal canal and at, or near, the inguinal ring, there are only one or two testicular veins, which pass upwards within the retroperitoneum. There is an alternative (collateral) venous return from the testes through the cremasteric veins, which drain mainly into the inferior epigastric veins.



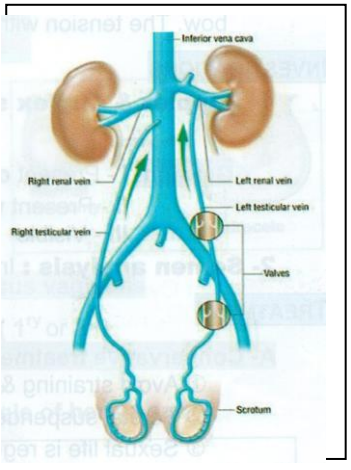
Primary varicocele

Aetiology

- The usual cause is absence or incompetence of valves in the proximal testicular vein.
- Prolonged sitting or standing
- Chronic constipation or straining at stool

Clinical features

- 90% are left sided, because longer, more vertical course of left testicular vein and opened at right angle into the renal vein and its course beneath the sigmoid colon so it is liable for obstruction.
- most varicocoeles are asymptomatic
- Age: Teens or early adult life.
- **A tall, thin body habitus**
- Dragging pain in affected side
- Bag of worms in examination in standing. There may be a cough impulse. If the patient lies down the veins empty by gravity
- In long standing cases: the testis small ,soft due to ATROPY
- Infertility in varicocele is due to high scrotal temperature cause depression of spermatogenesis



Investigations

Ultrasonography (Doppler and duplex scan) can be helpful in the diagnosis of small varicocoeles and in older men with an apparently recent onset of varicocoele,

ultrasonography of the kidneys is important in excluding a left renal tumour.
The clinical grading system defines varicoceles as
grade 0 (subclinical), nonpalpable and visualized only by CDUS;
grade 1, palpable only with Valsalva maneuver;
grade 2, easily palpable but not visible; and
grade 3, easily visible.

Seminal fluid analysis: in case of infertility.

Varicocoele and spermatogenesis

Certainly the varicocoele will tend to 'warm' the testis, which is usually around 2.5'C below rectal temperature, and there is conflicting evidence regarding the effect of this temperature difference upon spermatogenesis.

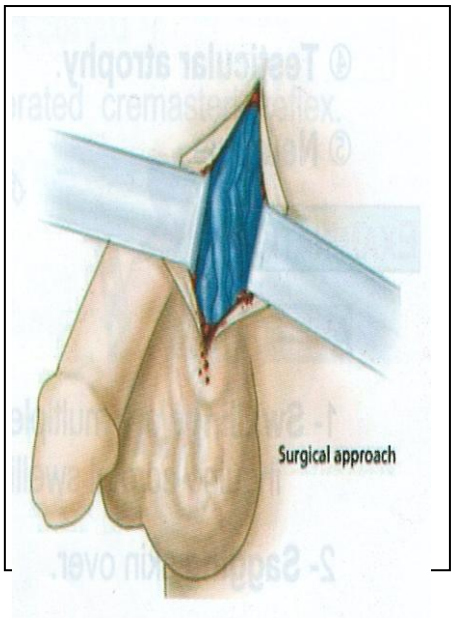
Treatment

- Percutaneous embolization of the gonadal veins
- Surgical ligation of the testicular vein; varicocelectomy.

Indications:

1.Pain
2.Infertility.
3. Cosmetic

Approaches : Scrotal
Subinguinal (macro or microscopic)
Inguinal (macro or microscopic)
Retroperitonal(Paloma operation)
Laproscopic



Secondary varicocele

- obstruction of the left testicular vein by a renal tumour or nephrectomy or after herniorrhaphy;
- The "nutcracker phenomenon" (compression of the left renal vein between the aorta and superior mesenteric artery)

characteristically, in such cases the varicocoele does not decompress in the supine position.

Comparison between primary and secondary.

	Primary varicocele	**Secondary varicocele**
Age	Younger 15 - 25	Older > 40 yrs
On lying down	disappears	present
Abdominal examination	No swelling	Present e.g. renal tumor
Need for abdominal ultrasound	No need	needed

Investigation

- Doppler and duplex scan of the srotum and ultrasonography of the abdomen
- Seminal fluid analysis: in case of infertility.

Treatment: treatment of the cause.

Hydrocele

Is an abnormal collection of serous fluid in a part of processus vaginalis, usually the tunica vaginalis.

Classification

I. **Hydrocele of the tunica vaginalis**
II. **Hydrocele of the spermatic cord**

I. Hydrocele of the tunica vaginalis

1. Congenital hydrocele

Is caused by connection with the peritoneal cavity via a patent processus vaginalis.

Clinical features:

Age: in infants

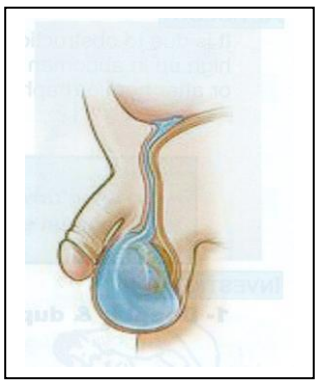
Symptoms: inguino-scrotal swelling with change in size i.e. decrease in early morning and increases at the end of the day.

Signs: translucent cystic inguino-scrotal swelling.

Treatment: surgery if they do not resolve spontaneously (usually after one year age)

Upper part: transfixed as in treatment of hernia, herniotomy.

Lower part: everted as treatment of hydrocele.



2. Infantile hydrocele

As congenital type but no connection to peritoneal cavity.

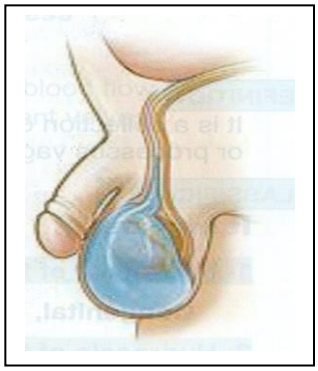
Clinical features:

Age: not necessarly in infants.

Symptoms: inguino-scrotal swelling swelling with no change in size

Signs: translucent cystic inguino-scrotal swelling.

Treatment: everted as treatment of hydrocele.



3. Vagginal hydrocele

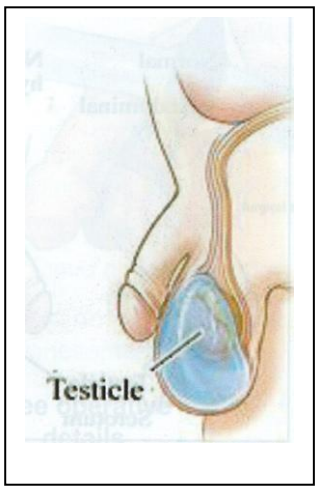
- It could be primary or secondary
- Primary vaginal hydrocele
- Is collection of fluid in the tunica vaginalis only.

Cause: defective absorption of fluid;

Clinical features:

Age: middle aged and elderly

Symptoms: scrotal swelling swelling



Signs: translucent cystic scrotal swelling, that can get above it.
Dull on percussion.

Complications:

1. Pyocele: if infection occurs.
2. Calcification of the sac.
3. Hematocele: if trauma or attempt of aspiration.
4. Interference with daily activity.
5. Huge expantion of the scrotum leading to indrawn of the penis which may interfere with intercourse.

Differential diagnosis

Inguinal hernia, pyocele, chylocele, and hematocele.

Treatment

a. Aspiration with or without sclerotherapy

Better avoided used only in medically unfit patients for surgery, because it may be complicated by hemorrhage, infection, atrophy, and recurrence, also Injection of a sclerosant, such as tetracycline, is effective but painful.

b. Surgery:

- **Plication**. Lord's operation is suitable when the sac is reasonably thin-walled. There is minimal dissection and the risk of haematoma is reduced.
- **Eversion.** The sac is opened and everted behind the testis (Jaboulay's procedure)

- **Excision**. Unless great care is taken to stop bleeding after excision of the wall, haemorrhage from the cut edge is liable to cause a large scrotal haematoma. This approach is not recommended.

Be wary of an acute hydrocoele in a young man since there may be a testicular tumour.

Secondary hydrocele

Causes

- most frequently associated with acute or chronic epididymo-orchitis.
- torsion of the testis
- some testicular tumours.
- Postvaricocelectomy
- After hernia operation.

Treatment: treatment of the cause.

II. Hydrocele of the spermatic cord

a. Encysted hydrocele of the cord:

- Due to persistence of the middle part of the processus vaginalis.
- Is scrotal or inguinal swelling
- The cyst separated from testis by gap
- It moves side to side but not up and down
- The characteristic sign: gentle traction on the testis the swelling moves down so become less mobile.

Treatment: excision through an inguinal incision.

b. Hydrocele of hernia sac

It occurs when narrow neck sac become occluded by omentum or adhesion after reduction of its contents leading to collection of serous fluid in the sac.

CYSTS ASSOCIATED WITH THE EPIDIDYMIS

Epididymal cysts:

- are filled with Crystal clear fluid
- usually multiple and vary in size at presentation
- Represent cystic degeneration of epididymis
- usually found in middle age and are often bilateral.
- The clusters of tense cysts feel like a tiny bunches of grapes that lie posterior to, and quite separate from, the testis.

Spermatocele:

- Unilateral ,retention cyst of epididymis
- Barly-water fluid contain sperm
- usually softer and laxer than other cystic lesions in the scrotum but, like them, it transilluminates.

Diagnosis of all cysts can be confirmed by ultrasound examination
Treatment: Can be treated conservatively unless they are large or uncomfortable which treated by surgical excision.

Epididymo-orchitis

Acute epididymo-orchitis:

Mode of infection

- via the vas from a primary infection of the urethra, prostate or seminal vesicles.
- Blood born infection

In young men usually arises secondary to a sexually transmitted genital infection, the most common cause of epididymitis is now *Chlamydia trachomatis*, but gonococcal epididymitis is still occasionally seen
In older men usually arises secondary to urinary infection
May be a complication of catheterisation or instrumentation of the urinary tract

Clinical features

- While there may be initial symptoms of a urinary or a genital infection, such symptoms are not always seen.
- Fever, pain, swelling of the testis
- Scrotal wall red ,edematous ,shiny
- Epididymis adhere to scrotal skin and tender
- Elevation decreases the pain. (Prehn's sign)
- Then softening and formed abscess
- Then may discharge pus through scrotal sinus

Complications: include
abscess formation, testicular infarction, testicular atrophy, chronic induration and inflammation and infertility.

Etiology :
1-UTI: *Post-prostatectomy
*Urological disease
*Catheterization
= E.Coli and other G-bacteria
2-Sexually active age group:
* Non GC – Ch. Trachomatis is the most common

* GC
3-Mumps orchitis : 3-4days after parotitis
20%of the cases of post pubertal Mumps involve testis
20% bilateral
30% of bil. Cases end with testicular atrophy = infertility
4-Systemic disease: Brucellosis
5-Acute Tuberculous epididymitis

Treatment

- Antibiotic: Either doxycycline (100–200 mg daily) or a quinolone should young men. There should be contact tracing of the partner and treatment if necessary. Antibiotic treatment should continue for at least 2 weeks.
  In older men, quinolones are the usual initial treatment, but if there is evidence of systemic sepsis, then intravenous antibiotics directed at urinary pathogens may be valuable.
- **Bed rest ,Analgesia, Anti-pyretic**
- **Scrotal elevation**

- **Drainage if suppuration occur**

Chronic epididymo-orchitis:

A-Specific - T.B.
-Syphilitic
B- Non specific.

Tuberculous epididymo-orchitis

90% of chronic Epididymo-orchitis
Mode of infection : Blood born infection or via the vas

Clinical presentation:
Early: slight ache in testis with swelling
Discrete, indurated ,slightly tender nodule
in globus minor
Entire epididymyis felt firm and craggy
Late: Painless mass
Beaded vas
Secondary hydrocele
Cold abscess or discharging sinus of the scrotum – posteriorly.
Prostate or seminal vesicle may involve—DRE
2/3 of patient had positive history of T.B.in UT

Diagnosis:
- **History and physical examination.**
- **Urine and semen** should be examined repeatedly **for AFB**
- **CXR**
- **Urine culture for MycobacteriumTuberculosis**
- **Semen culture**
- **Ultrasound** will demonstrate a thickened epididymis.

Treatment:
*Anti- T.B. drugs
*Surgery : Epididymectomy or Orchiectomy if there is no response for drugs

Syphilitic Orchitis:

It is now uncommon
It can cause
- Bilateral orchitis — Congenital Syphilis

- Interstitial fibrosis— Atrophy
- Gumma – unilateral , painless enlargement ,
- anterior scrotal sinus

Serology tests: is essential in diagnosis
Treatment :Anti syphilitic drugs
Orchiectomy if no response

Non-Specific epididymo-orchitis:

a-follow acute attack
b-chronic started as low grade infection
Epididymis : larger and smoother than T.B.
epididymitis , may associated with urethritis and prostatitis

Treatment: 6-8 weeks antibiotic
Epididymectomy or orchiectomy may needed if fail to resolved

	Testicular torsion	**Acute epididymo-orchitis:**
Onset	sudden	Usually gradual
Age	Adolescence or children	Middle age or elderly
History	There may be mild trauma	UTI symptoms
Elevation	No effect	Decrease the pain
Urinalysis	free	pus
Doppler	Absent flow	Normal or increased