

## Incompletely descended testis (Undescended Testis)

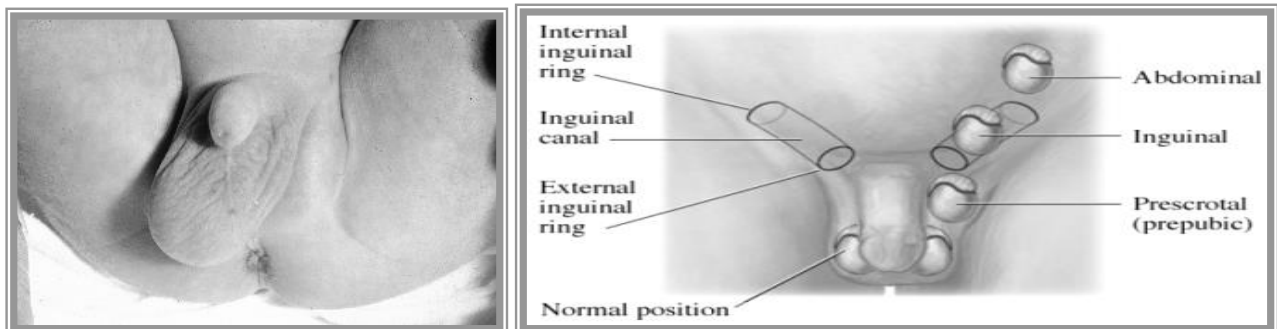
- The testis is arrested in some part of its path to the scrotum.
- Incidence: 4% of boys are born with one or both testes incompletely descended.
- Half of these reach the scrotum during the first month of life.
- two thirds of these reach the scrotum during the first three months of life
- incidence of testicular maldescent at the age of one year is around 1%.
- In 10% of unilateral cases there is a family history.

### Pathology

- The epithelial elements are immature histologically and by late puberty irreversible destructive changes halt spermatogenesis and limit the production of androgens.
- Early repositioning of an incompletely descended testis can preserve function.

### Clinical features

- The scrotum is empty & underdeveloped
- More common on the right
- Bilateral in 20% of cases.
- Secondary sexual characteristics are typically normal.
- **The testis may be:**
  1. intra-abdominal, lying extra peritoneally above the internal inguinal ring.
  2. inguinal, it may or may not be palpable
  3. in the superficial inguinal pouch, in which case it must be distinguished from retractile testis.



## Sequels of incomplete descent:

1. **Sterility** in bilateral cases (especially intra-abdominal testes)
2. **Pain** because of trauma
3. **Indirect inguinal hernia** often present.
4. **Torsion** of the testis.
5. **Atrophy of** an inguinal testis before puberty may possibly be caused by recurrent minor trauma.
6. **Testicular cancer** is more common in an incompletely descended testis.

## Treatment

- Orchidopexy is usually performed after the age of one year
- The testes should be brought down into the scrotum before age 2 years.
- Orchiectomy should be considered if the incompletely descended testis is atrophic
- Hormone treatment with human chorionic gonadotrophin is appropriate only when there is established hypogonadism.
- orchidopexy may or may not diminish the risk of testicular cancer but it does improve the prospect of early diagnosis

## ECTOPIC TESTIS

- The testis is abnormally placed outside this path
- **The sites of ectopic testis are:**
  1. at the superficial inguinal ring: superficial to the inguinal canal
  2. the perineum
  3. the root of the penis
  4. the femoral triangle.
- An ectopic testis is usually fully developed. The main hazard is liability to injury.
- Treatment: orchidopexy
- N.B.: Retractable testis is normal testis with active cremasteric reflex.

## ABSENT TESTIS

- ‘Vanishing’ testis: a condition in which a testis develops but disappears before birth.
- Cause: prenatal torsion.
- True agenesis of the testis is rarer.
- Laparoscopy is useful in distinguishing these causes of clinically absent testis from intra-abdominal maldescended testis.

## Scrotal Swelling

### Scrotal Swelling without acute pain

1. Hydrocele
2. Spermatocele
3. Varicocele
4. Hematocele
5. Scrotal hernia
6. Testicular tumor

### Scrotal swelling with acute pain:

1. Epididymitis/Orchitis
2. Testicular trauma
3. Testicular torsion
4. Incarcerated scrotal hernia
5. Testicular tumor

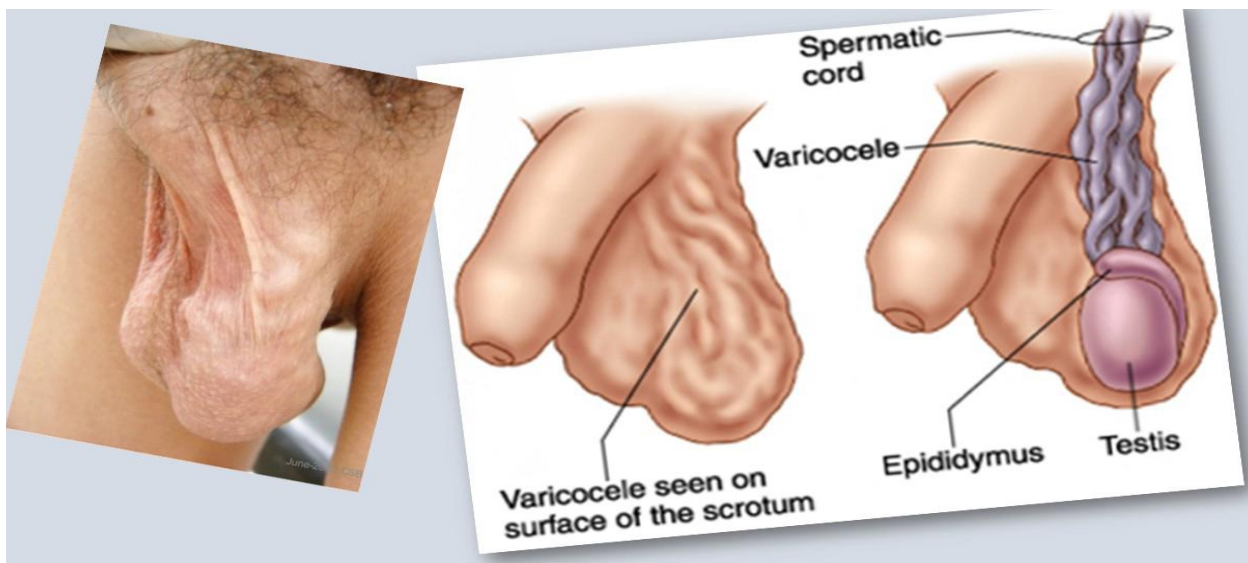
## VARICOCELE

### What is a varicocele?

- Ecstatic & tortuous veins of the pampiniform plexus of the spermatic cord
- Found in ~15% of male adolescents, rarely clinically evident before early adolescence
- Not all varicoceles cause infertility, 40% in infertile men.
- 90% L sided.

### What is the etiology of varicoceles?

- likely multifactorial.
  1. Increased venous pressure in L renal vein
  2. Collateral venous anastomosis
  3. Incompetent valves of the internal spermatic vein.



### What are the effects of a varicocele on testicular function?

- Associated with an adverse effect on spermatogenesis in a subset of men
- Toxic effect may be manifested as.
  1. testicular growth failure
  2. semen abnormality.
  3. Leydig cell dysfunction
  4. histologic changes: tubular thickening, interstitial fibrosis, decreased spermatogenesis, maturation arrest.

### What are the possible theories to explain the effects of varicoceles on testicular function?

1. Reflux of adrenal metabolites
2. Hyperthermia
3. Hypoxia
4. Local testicular hormonal imbalance (Leydig cell dysfunction due to decreased intratesticular testosterone levels, serum FSH/LH/testosterone normal).
5. Intratesticular hyper perfusion injury

### What is the classification system for varicoceles?

- ⇒ Grade 1 palpable only with Valsalva
- ⇒ Grade 2 palpable with patient standing
- ⇒ Grade 3 visible and palpable with patient standing

### Clinical Features

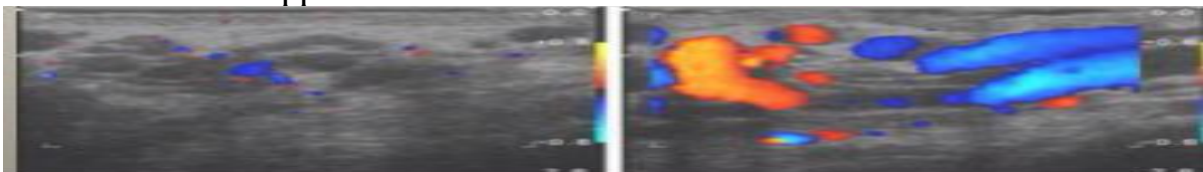
1. Usually, asymptomatic.
2. There may be dragging scrotal discomfort
3. The scrotum on the affected side hangs lower than normal
4. On palpation, with the patient standing, the varicose plexus feels like a bag of worms.
5. Infertility.

### What is the definition of a subclinical varicocele?

- ✓ not palpable or visible AND asymptomatic, presence of multiple veins (vein is  $>3\text{mm}$ ) + reverse flow / rates.
- ✓ no study shows improved pregnancy after Rx of subclinical varicocele.

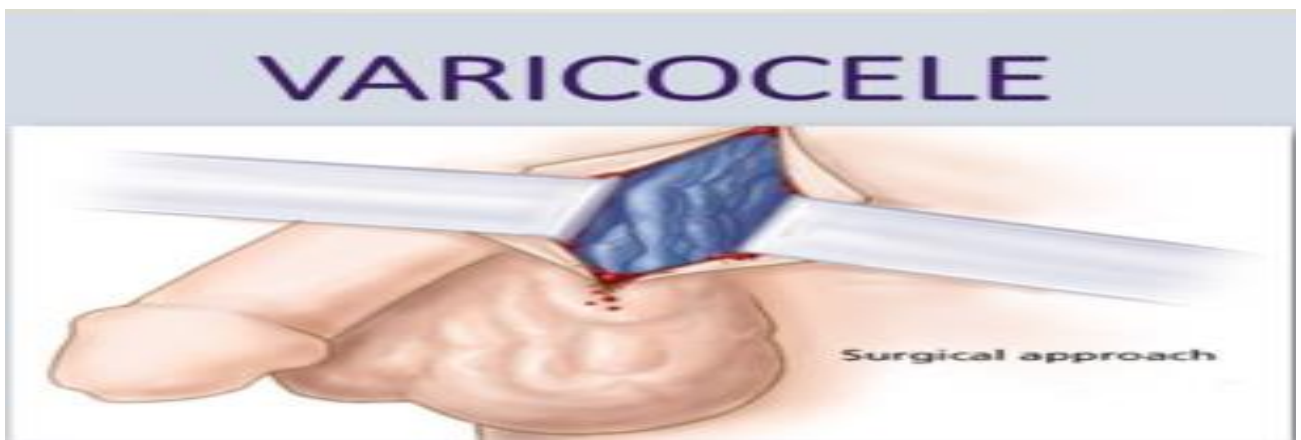
### Investigations:

1. P/E is still gold standard
2. Scrotal Doppler U/S.



## Treatment

- A. Reassurance: Operation is not indicated for asymptomatic varicocele.
- B. Indications of surgery:
  1. Pain.
  2. Infertility
  3. Cosmetic
  4. ipsilateral testis  $>20\%$  or  $>2\text{mL}$  smaller than contralateral testis.
- Types of operations:
  1. Open Varicocele ligation: **Subinguinal (stander)**, inguinal.
  2. laparoscopic ligation.
  3. Embolization of the testicular vein under radiographic control.



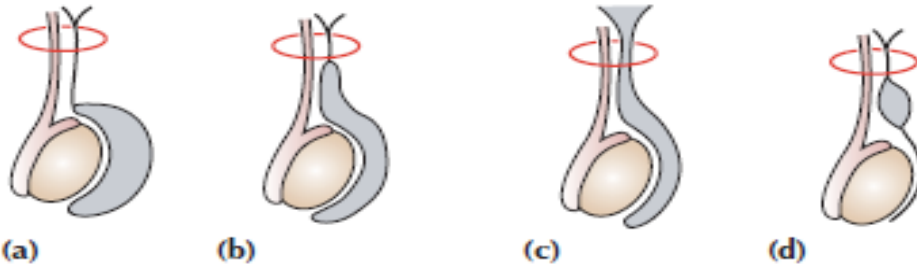
## Potential complications of varicocelectomy?

1. Ilioinguinal nerve injury
2. Vas deferens injury
3. Bleeding/hematoma
4. Infection
5. Hydrocele (from lymphatic obstruction, least common with **Subinguinal** microsurgical approach and embolization).
6. Recurrence: highest rate with retroperitoneal, non-microsurgical inguinal, and embolization, lowest rate with micro inguinal
7. Testicular atrophy: uncommon especially after microsurgical ( $<1\%$ )

## HYDROCELE

- Hydrocele is an abnormal collection of serous fluid in a part of the processus vaginalis, usually the tunica.
- Vaginal hydrocele abnormal collection of serous fluid between the two layers of tunica vaginalis.
- In congenital hydrocele, the processus vaginalis is patent and
- connects with the peritoneal cavity.





**Figure** (a) Vaginal hydrocele (very common). (b) 'Infantile' hydrocele. (c) Congenital hydrocele. (d) Hydrocele of the cord.

## Etiology

- Acquired hydroceles are primary (idiopathic), or secondary to testicular disease.
- A hydrocele can be produced in four different ways :
  1. Excessive production of fluid within the sac, e.g. secondary hydrocele
  2. Defective absorption of fluid; this appears to be the explanation for most primary hydroceles although the reason why the fluid is not absorbed is obscure.
  3. Interference with lymphatic drainage of scrotal structures.
  4. Connection with the peritoneal cavity via a patent processus vaginalis (congenital).

## Clinical features

- Primary vaginal hydrocele is most common in middle and later life but can also occur in older children presents with
- Scrotal swelling.
- Painless.
- Typically, translucent (transillumination +ve)
- It is possible to 'get above the swelling' on examination of the scrotum.
- ✓ N.B: in a young man; there may be a testicular tumor, so scrotal US should be done.



## Treatment

- Congenital hydroceles are treated by herniotomy if they do not resolve spontaneously.
- Acquired hydroceles: excision of the wall.
- ✓ N.B: A secondary hydrocele may subside when the primary lesion resolves.

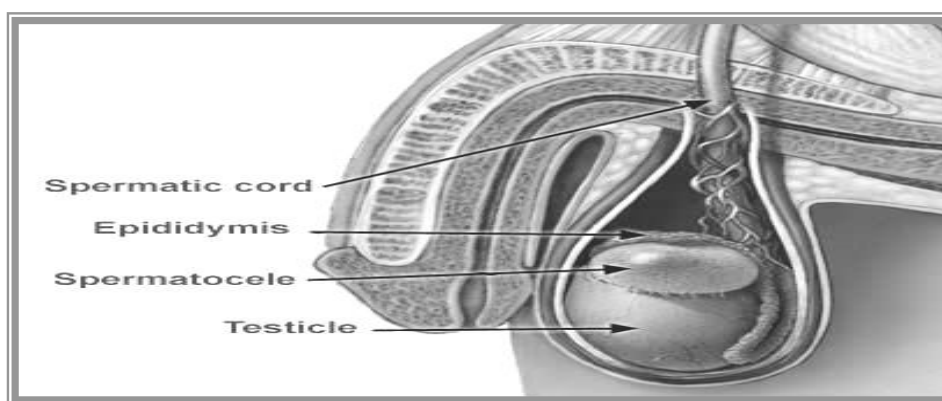


## Epididymal cysts

- They represent cystic degeneration of the epididymis.
- Filled with a crystal-clear fluid.
- Found in middle age
- The cysts are multilocular
- Excision may cause obstruction of the epididymis therefore it is better to leave it.

## Spermatocele

- A unilocular retention cyst derived from some portion of the sperm-conducting mechanism of the epididymis.
- Typically lies in the epididymal head above and behind the upper pole of the testis.
- The fluid contains spermatozoa
- Small spermatoceles can be ignored. Larger ones can be aspirated or excised through a scrotal incision.



**Thank You**

**2021-2022**