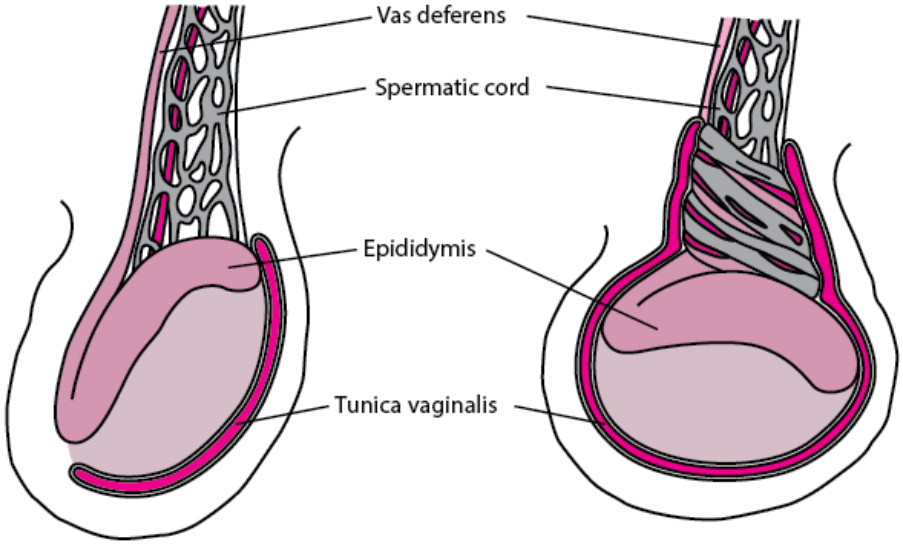
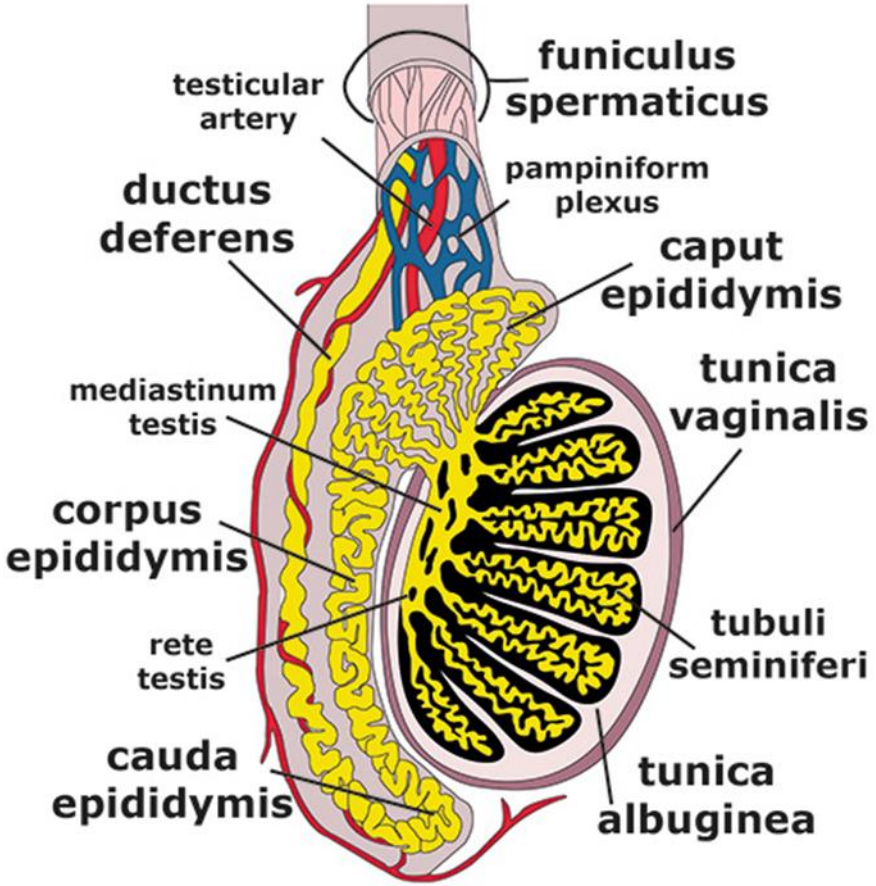
Testicular torsion

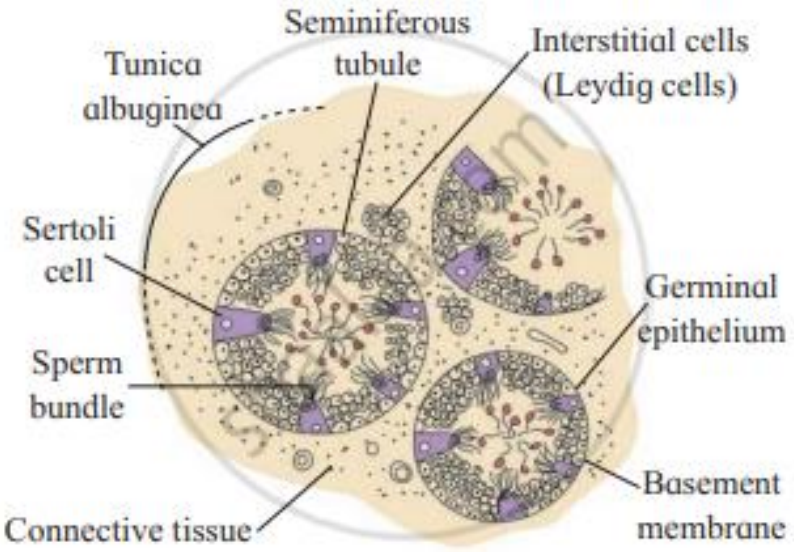


Anatomy

- Testicular artery - from the abdominal aorta just below the renal arteries
- Testicular veins drain into the renal vein on the left and the inferior vena cava on the right
- Lymphatic drainage- para-aortic nodes that are the draining lymph nodes



- Testicle is divided into lobules by loose connective tissue bands
- Lobules are composed of tubules lined by stratified epithelium composed of maturing germ cells and Sertoli cells
- Leydig or interstitial cells- present between seminiferous tubules-testosterone secretion



Testicular torsion

- Surgical emergency
- Occurs due to anatomical variants in testicular anatomy

e.g. ‘bell clapper’ testicle with pronounced meso-orchium allowing rotation within the tunica vaginalis

- Peak age of incidence 12–18y
- Speed of presentation, diagnosis, and treatment are all important
- Torsion greater than 360* lasting longer than 24h results in near universal complete or severe atrophy

Epidemiology

- Extravaginal torsion constitutes approximately 5% of all torsions

Of these cases of testicular torsion, 70% occur prenatally and 30% occur postnatally

- Intravaginal torsion constitutes approximately 16% of cases

Most often observed in males younger than 30 years, with most aged 12-18 years

Bilateral cases account for 2% of all torsions

- The incidence of torsion in males younger than 25 years is approximately 1 in 4000

Predisposing factors

- Inversion of the testis (Extra vaginal) – common
- High investment of tunica vaginalis

(clapper in bell)

- Separation of epididymis

Pathophysiology

- Contraction of abdominal muscle- contraction of cremaster muscle
- May occur during straining at stool, lifting a heavy weight, coitus
- Also occur during sleep

Pathophysiology

Torsion

↓

Venous obstruction

↓

Prolonged increased venous pressure

↓

Arterial compression

↓

Testicle rapidly develops irreversible ischaemia and necrosis

↓

Spermatogenic cells are more susceptible to ischaemia

↓

Subfertility

Clinical features

- Sudden onset of moderate to severe, constant, unilateral scrotal pain
- Nausea, vomiting, and abdominal pain
- May have been preceding episodes of intermittent pain that suddenly resolved
- Testis is globally tender, high in the scrotum, transverse axis, slightly enlarged
- Scrotal wall oedema and tenderness
- Absence of ipsilateral cremasteric reflex

Differential diagnosis

- Epididymo-orchitis in the older patient - there will usually be
- dysuria associated with the accompanying urinary infection
- Torsion of a testicular appendage - sometimes be visible through the scrotal wall as a small dark spot
- Mumps orchitis - cord is not particularly thickened

and often bilateral

- Idiopathic scrotal oedema - scrotum is very swollen but there is little pain or tenderness

The swelling is usually bilateral and may extend into the perineum, groin and penis

Emergency management

- Resuscitation
- Give analgesia (e.g. morphine 5–10mg IV)
- Establish a diagnosis
- Immediate surgical exploration is indicated for all cases where the diagnosis of torsion is considered
- Testicular colour duplex ultrasound

Used if immediately available or where symptoms have been present for days and testicularviability is unlikely if torted

- MSU, urethral swab, chlamydia serology if suspected infection

Definitive management

- Management of the case should be determined primarily on clinical grounds
- Urgent scrotal exploration is indicated
- A viable testicle is detorted and fixed – 3 point fixation
- A clearly non-viable testicle is excised - orchidectomy
- The opposite testicle is fixed (orchidopexy) to prevent the opposite side torting in future

- Scrotal exploration with transverse scrotal incision
- If the testis is viable when the cord is untwisted
- Fixation with three non-absorbable sutures between the tunica albuginea of the testis and the scrotal raphe - prevented from twisting again
- Use of absorbable sutures risks the possibility of recurrent torsion
- Other testis should also be fixed because the anatomical predisposition is likely to be bilateral

- Clinical doubt as to testicular viability after detorsion of the testis,
- It should be wrapped in a warm swab and observed over a few minutes
- If a small incision in the tunica albuginea demonstrates bright red arterial bleeding
- Then the testis may survive
- An infarcted testis should be removed – the patient can be counselled later about a prosthetic replacement

Prognosis

- The time elapsed between onset of pain and performance of detorsion, and the corresponding salvage rate,
- < 6 hours – 90-100% salvage rate
- 12-24 hours – 20-50%
- >24 hours – 0-10%

Consequences of testicular torsion

- Infarction of testicle
- Loss of testicle
- Infection
- Infertility secondary to loss of testicle
- Cosmetic deformity