# Scrotal swellings

## Major causes

*Intratesticular lesions*

• Malignant testicular tumors.

• Benign intratesticular lesions. Simple intratesticular cyst or epidermoid cysts and benign teratoma (especially in the prepubertal testis).

*Inflammatory lesions*

• Acute epididymo-orchitis or viral orchitis.

• Chronic tuberculous epididymo-orchitis, schistosomal epididymitis, sperm granuloma.

*Traumatic lesions*

• Scrotal hematoma.

• Hematocele (hematoma within tunica vaginalis).

• Testicular hematoma (within tunica albuginea testis).

*Derangement of testicular, adnexal, or cord anatomy*

• Epididymal cysts or spermatocele of the epididymis.

• Varicocele (varicosities of the pampiniform plexus).

• Inguinal hernia (patent processus vaginalis in children).

• Hydrocele (vagina = within tunica vaginalis or cordal).

• Late (missed) or prenatal torsion of the spermatic cord.

• Persistence of embryological vestigial structures.

• Müllerian duct remnant (appendix testis).

• Wolffian duct remnants (appendix epididymis, vas aberrans of Haller, paradidymis).

*Miscellaneous*

• Acute idiopathic scrotal edema.

• Cutaneous lesions, e.g. sebaceous cysts.

• Henoch–Schönlein purpura.

## Clinical features/diagnosis

• Testicular tumors:

• Firm intratesticular or progressively enlarging lesions are tumors until proven otherwise.

• Do not be misled by painful testicular swelling following relatively trivial trauma; tumors may present this way.

• Tuberculous epididymitis may occur with or without evidence of pulmonary, systemic, or other genitourinary involvement.

• Hydroceles, patent processus vaginalis, and large spermatoceles are transilluminable, may be fluctuant, and are usually confined to the scrotum.

• Varicocele. Often associated with subfertility or dragging discomfort that worsens on standing and settles when recumbent. More obvious as a fluctuant swelling with the patient standing. A cough impulse may be felt. Ipsilateral testis may be atrophied. Examine the abdomen to exclude an associated renal tumor.

• Inguinal hernias tend to be intermittent, associated with groin discomfort, and when 'out', the examining hand cannot 'get above' the swelling in the cord/inguinal canal. A history of longstanding enlargement is typical.

## Investigations

• Urinalysis for M,C,&S.

• Blood tests. Consider tumor markers (AFP, β-HCG), inflammatory markers (CRP, WCC).

• Ultrasound scanning of the scrotal contents has several important uses.

• Distinguishes intratesticular from paratesticular swellings, solid from cystic lesions, cellulitis from abscess, etc.

• Can examine impalpable testes, e.g. within large hydroceles.

• Can identify rupture of the tunica albuginea testis.

• Examination of the abdomen can identify renal mass associated with varicocele or ascites with hydrocele/scrotal oedema, etc.

• Colour flow Doppler ultrasound can identify hyperaemia, underperfusion, and varicocele.

## Treatment

Testicular tumors, acute epididymo-orchitis.

• Suspected paratesticular tumors are approached surgically in the same way as testis tumors. Surgery may be conservative with benign testicular and paratesticular tumors.

• Sperm granuloma may be excised or epididymectomy may be performed. Reassurance may be all that is required in many cases.

Recurrence rates after surgery are high.

• Epididymal cysts/spermatocele may be aspirated, but recurrence is common. Excision risks loss of epididymal patency, is associated with risk of recurrence, and should probably be discouraged in men who have not completed their family.

• Hydroceles. Treat if symptomatic. Procedures usually reconfigure the serosal remnant of tunica vaginalis so as to allow lymphatic drainage via scrotal lymphatics. Reduction, inversion (Jaboulay), or imbrication (Lord's) of the tunica vaginalis is used.

• Embryological remnants. No treatment if asymptomatic.

• Varicocele. Treat if symptomatic, associated with infertility, or with failure of testicular growth. Venous embolization and retroperitoneal ligation (laparoscopic or open) of the testicular vein have similar results. Minimally invasive treatments are preferable. Gubernacular veins and other collaterals may account for failures. Open surgical ligations via an inguinal incision can deal with these.

• Acute idiopathic penoscrotal edema of childhood usually settles with conservative treatment. Antihistamines and antibiotics are frequently prescribed, but there is little evidence to support this.