HYDROCELE TESTIS
Testicular Hydrocele

An accumulation of clear fluid in the tunica vaginalis, the most internal of membranes containing a testicle.

⚠️ Risk factor ♂ Male

About Hydrocele testis

Hydrocele testis is an accumulation of clear fluid between the tunica vaginalis and testis. Adult-onset primary noncommunicating hydrocele testis causes progressive swelling and local discomfort on the affected side of the scrotum, and this has been attributed to the enhanced secretion and defective absorption of fluid in the space between the tunica vaginalis and testis. The cause is generally unknown. A secondary hydrocele testis is secondary to either inflammation or a neoplasm in the scrotum.

A hydrocele usually occurs on one side, but can also affect both sides. The accumulation can be a marker of physical trauma, infection, tumor or varicocele's surgery, but the cause is usually not clear.

Primary hydroceles

The swelling is soft and non-tender, large in size on examination and the testis cannot usually be felt. These hydroceles can reach a huge size, containing large amount of fluid, as these are painless and are often ignored. However, the long continued presence of large hydroceles causes atrophy of testis due to compression or by obstructing blood supply. In most cases, the hydrocele, when diagnosed early during complete physical examination, are small and the testis can easily be palpated within a lax hydrocele but an ultrasound imaging is necessary to visualize the testis if the hydrocele sac is dense, to reveal the primary abnormality. A common method of diagnosing a hydrocele is by attempting to shine a strong light (transillumination) through the enlarged scrotum. A hydrocele will usually pass light, while a tumor will not (except in the case of a malignancy with reactive hydrocele).

Secondary hydroceles

Secondary hydrocele due to testicular diseases, can be the result of, cancer, trauma (such as a hernia), or orchitis (inflammation of testis), and can also occur in infants undergoing peritoneal dialysis. A hydrocele is not a cancer but it should be excluded clinically if a presence of a testicular tumor is suspected. Secondary hydrocele is most frequently associated with acute or chronic epididymo-orchitis. It is also seen with torsion of the testis and with some testicular tumors. A secondary hydrocele is usually lax and of moderate size: the underlying testis is palpable. A secondary hydrocele subsides when the primary lesion resolves.

Infantile hydroceles

In infants and children, a hydrocele is usually an expression of a patent processus vaginalis (PPV). The tunica and the processus vaginalis are distended to the inguinal ring but there is no connection with the peritoneal cavity.

Congenital hydroceles

The processus vaginalis is patent and connects with the general peritoneal cavity. The communication is usually too small
to allow herniation of intra-abdominal contents. Digital pressure on the hydrocele does not usually empty it, but the hydrocele fluid may drain into the peritoneal cavity when the child is lying down. Ascites or even ascitic tuberculous peritonitis should be considered if the swellings are bilateral.

**Encysted hydrocele of the cord**

There is a smooth oval swelling near the spermatic cord which is liable to be mistaken for an inguinal hernia. The swelling moves downwards and becomes less mobile if the testis is pulled gently downwards. Rarely, a hydrocele develops in a remnant of the processus vaginalis somewhere along the course of the spermatic cord. This hydrocele also transilluminates, and is known as an encysted hydrocele of the cord.

The accuracy of the diagnosis must be ascertained. Great care must be taken to differentiate a hydrocele from a scrotal hernia or tumor of the testicle. Ultrasound imaging can be very useful in these cases. A hernia usually can be reduced, transmits a cough impulse, and is not translucent. A hydrocele cannot be reduced into the inguinal canal and gives no impulse on coughing unless a hernia is also present. In young children a hydrocele is often associated with a complete congenital type of hernial sac.

**Associated disease**

- inguinal hernia
- testicular cancer
- atrophy of testes
- epididymo-orchitis
- cryptorchid testis
- hypospadias
- liver disease with ascites
- cystic fibrosis

**Complications**

- Herniation of the hydrocele sac through the dartos muscle sometimes occurs in long-standing cases.
- Transformation into a haematocoele occurs if there is spontaneous bleeding into the sac or as a result of trauma. Acute haemorrhage into the tunica vaginalis sometimes results from testicular trauma and it may be difficult without exploration to decide whether the testis has been ruptured. If the haematocoele is not drained, a clotted haematocoele usually results.
- The sac may calcify. Clotted hydrocele may result from a slow spontaneous ooze of blood into the tunica vaginalis. It is usually painless and by the time the patient seeks help, it may be difficult to be sure that the swelling is not due to a testicular tumour. Indeed a tumour may present as a haematocoele.
- The hydrocele fluid can be aspirated with a needle and syringe. Occasionally, severe infection can be introduced by aspiration. Simple aspiration, however, often may be used as a temporary measure in those cases where surgery is contraindicated or must be postponed.
- Posthernorrhaphy hydrocele is a relatively rare complication of inguinal hernia repair. It is possibly due to interruption to the lymphatics draining the scrotal contents.
- Infection which may lead to pyocele.
- Atrophy of testis in long standing cases.

**Risk factors**

- prematurely born babies
- scrotal injury
- infection, trauma
- torsion

**Prevention**

Non-existing.

**How it can affect fertility**

Scientists believe that main impact of hydrocele on fertility is when hydrocele oppresses testes, which affects blood circulation and then affects process of spermatogenesis. The testicular blood supply could be affected by an extremely large hydrocele. The result is testicular ischemia which could leads to testicular atrophy and subsequent impairment of fertility. Also when hydrocele is too large, it leads to enveloping of penile scrotal skin and it does not conducive to the normal sexual intercourse.
Prognosis

Hydrocele is rather than a symptom an actual pathological condition. There is no strong correlation with later infertility. Even if hydrocele does not require immediate surgery as a practical recommendation, surgery is still recommended in these men, which have a certain associated pathology.

Gallery

Testes
Layers of testes.

Ultrasound scan
An ultrasound scan of hydrocele.

Sources

“Overexpression of Aquaporin 1 in the Tunica Vaginalis May Contribute to Adult-Onset Primary Hydrocele Testis” — by Hattori et al. licensed under CC BY 3.0

“Hydrocele testis” — sourced from Wikipedia licensed under CC BY-SA 3.0

“Hydrocele” — sourced from Wikipedia licensed under CC BY-SA 3.0

“Testicles” — by Carter and Gray licensed under CC0

“Ultrasound” — by Dilmen licensed under CC BY-SA 3.0