

VARICOCELE

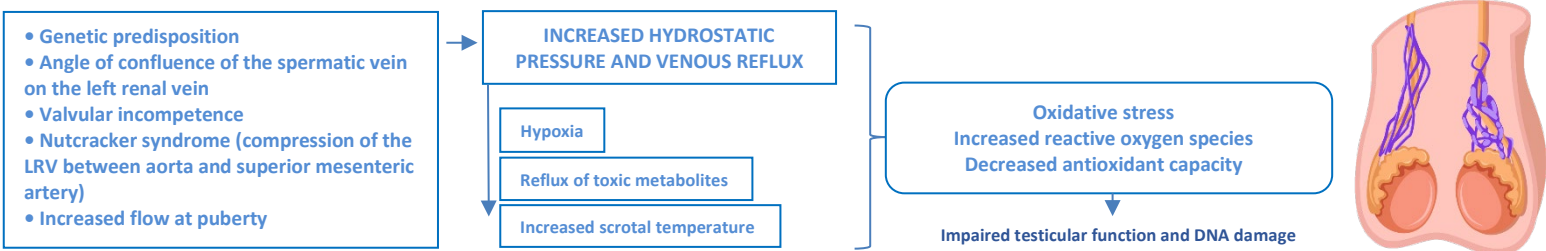
OVERVIEW

Varicocele is a common congenital abnormality that causes dilation and tortuosity of the internal spermatic veins within the pampiniform plexus. It may be associated with the following andrological conditions: male sub-fertility, failure of ipsilateral testicular growth and development, symptoms of discomfort and pain, and hypogonadism.

EPIDEMIOLOGY AND PATHOGENESIS

It is rarely diagnosed before school age. Varicocele is present in **almost 15% of the normal male population, 25% of men with abnormal seminal parameters, and 35-40% of men presenting with infertility**. From 7 to 17% it can be bilateral.

Its physiopathogenesis is unknown but several theories were postulated that would generate dilation and its consequences:



CLASSIFICATION: Dubin and Amelar

Subclinical	Not palpable or visible at rest or during Valsalva manoeuvre, but can be shown by special tests (Doppler US)
Grade I	Palpable during Valsalva manoeuvre
Grade II	Palpable at rest
Grade III	Visible and palpable at rest



DIAGNOSTIC EVALUATION

The diagnosis of varicocele is made through physical examination: inspection and bilateral scrotal palpation, at rest, in the supine position and standing, and with the Valsalva manoeuvre. The objective is to see and / or palpate the dilated and tortuous veins ("bag of worms" sign). It is also important to document testicular size.

Scrotal Doppler ultrasound is indicated if the physical examination is inconclusive or if the semen analysis remains unsatisfactory after varicocele repair, in order to find persistent or recurrent varicocele.

A maximum venous diameter of **> 3 mm in a vertical position and during the Valsalva manoeuvre and a venous reflux lasting > 2 seconds** → clinically significant varicocele.

BASIC CONSIDERATIONS

- ✓ Impairment of fertility might be associated with DNA damage. Improvement was demonstrated in most cases, after surgical correction of the varicocele, as well as seminal parameters. By improving the integrity of sperm DNA, better results were also seen in assisted reproduction techniques.
- ✓ Evidence also suggests that men with clinical varicocele and hypogonadism may benefit from the intervention (as it improves parameters related to Leydig cells).

DISEASE MANAGEMENT

Main indications for treatment: significant testicular hypotrophy, pain, alteration in seminal parameters and unexplained subfertility. There are several therapeutic options available. **Current evidence indicates that the microsurgical approach is the most effective technique, with less complications and lower recurrence rates compared to other techniques.**

Treatment	Recurrence Persistence %	Overall complications	Specific complications
Open approach			
Scrotal approach	-	Testicular atrophy, arterial damage with risk of devascularisation and testicular gangrene, scrotal haematoma, post-operative hydrocele.	
Inguinal approach	2.6 – 13	Hydrocele (7.3%), testicular atrophy, epididymo-orchitis, wound complications.	Post-operative pain due to incision of external oblique fascia, genitofemoral nerve damage.
Open retroperitoneal high ligation	15 – 29	Hydrocele (5-10%), testicular atrophy, scrotal edema.	External spermatic vein ligation failure.
Microsurgical inguinal or subinguinal	0.4	Hydrocele (0.44%), scrotal haematoma.	
Laparoscopy	3 – 6	Hydrocele (7-43%) epididymitis, wound infection, testicular atrophy due to injury of testicular artery, bleeding.	External spermatic vein ligation failure, intestinal, vascular and nerve damage; pulmonary embolism; pneumo-scrotum; peritonitis; post-operative pain in right shoulder.
Percutaneous approach			
Antegrade sclerotherapy	5 – 9	Hydrocele (5.5%), haematoma, infection, scrotal pain, testicular atrophy, epididymitis.	Technical failure 1-9%, left-flank erythema.
Retrograde sclerotherapy	6 – 9.8	Hydrocele (3.3%), wound infection, scrotal pain.	Technical failure 6-7.5%, adverse reaction to contrast medium, flank pain, persistent thrombophlebitis, venous perforation.
Retrograde embolization	3 – 11	Hydrocele (10%), haematoma, wound infection.	Technical failure 7-27%, pain due to thrombophlebitis, reaction to contrast media, misplacement or migration of coils, retroperitoneal haemorrhage, fibrosis, ureteric obstruction, venous perforation.