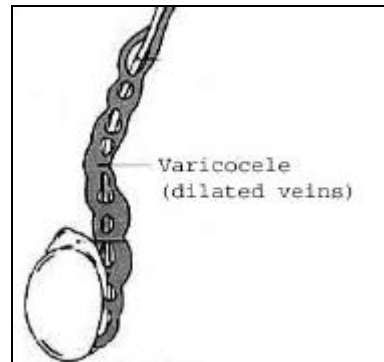
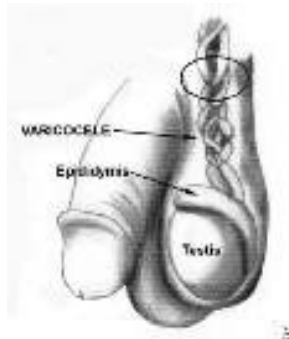


Adolescent Varicocele

Definition

Arteries bring blood to an organ and veins take the blood away. When these veins are dilated and engorged with blood, they are called varices. Testicular function (fertility) and growth can be affected by dilation of its veins.



Incidence

Approximately 15% of all *adult* males have a varicocele. Of these men, about 20% have problems with infertility. Adolescents appear to have a similar rate of varicocele but their effect on fertility is not known.

Anatomy / Physiology

Varicoceles appear on the left side in 90% of patients. By a complex mechanism of heat exchange, the blood going to the testicle is cooled from 37°C to 33°C. The varicocele appears to affect the blood cooling mechanism and creates higher temperatures in the scrotum. The increased temperature decreases sperm production. The varicocele may also affect hormonal balance in the testicle and oxygen delivery. There are two types of cells in the testicle, those that make sperm and those that make testosterone. Both appear to be affected by the varicocele. **In adolescents, the varicocele can affect testicular growth.** The varicocele has no affect upon erections, penile size, libido, virility or pubertal development.

Presentation

The vast majority of young men with varicoceles have no symptoms. Most are found incidentally during a physical examination. Some patients complain of heaviness or fullness. The varix feels like a “bag of worms” in the scrotum.

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| Grade 1 | The varicocele is only felt when the patient bears down. |
| Grade 2 | The varicocele can be felt, but not seen. |
| Grade 3 | The varicocele is large enough to be visible. |

Adolescents

During puberty the testicular volume (size) increases from 2ml to 16ml. The testicle can be measured by physical examination with an orchidometer or by ultrasound.

Indications for Treatment

For adolescents, a left testis which is 2-ml smaller than the right is considered significant. For an adult male, a varicocele should be corrected if there are semen abnormalities and issues of infertility. Other indications include very large size and/or discomfort. The size of the varicocele does correlate with semen quality and testis growth.

Types of Treatment

There are multiple techniques for correcting a varicocele. All of the methods involve ligating (closing with sutures) the testicular veins. The 3 popular techniques are laparoscopic, retroperitoneal and microscopic subinguinal. All require small incisions. All carry a risk of varicocele recurrence (2% to 15%) and hydrocele (water in scrotum) formation (1% to 10%). The laparoscopic technique carries a very small risk (< 1%) of intra-abdominal organ injury or bleeding. Other smaller risks include testicular atrophy (shrinkage), wound infection and prolonged pain.

All procedures are done on an outpatient basis. A general anesthetic is required. The surgery lasts about one hour. The patient will go home 1 to 2 hours after surgery.