

Varicocele: Acute Complications of a Chronic Disease

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Abstract: Depending on the degree of varicocele, treatment can be conservative or operative. If severe pain occurs as a result of thrombosis, phlebitis and rupture of the pampiniform plexus veins with the formation of a scrotal hematoma, surgical intervention must be performed urgently. Sometimes, with technical errors during surgery for iatrogenic varicocele (ligation or transection of the ureter, failure of ligatures on the vein stump), patients need emergency help. In case of urgent complications of varicocele due to its late diagnosis, patients also need emergency or urgent surgical care. These aspects of the problem in the urological literature are poorly covered and, therefore, practical urologists are almost not aware of them, therefore they are almost never diagnosed or under the auspices of other emergency testicular diseases (acute orchitis, epididymitis, testicular torsion, acute scrotum).

Keywords: thrombophlebitis of the veins of the testicle, rupture of the veins of the pampiniform plexus, hematoma of the scrotum, damage to the ureter.

Relevance. The following classification of varicocele is used in clinical practice:

- subclinical form: the veins of the spermatic cord are not palpated, there are no visible changes in the scrotum at rest and during the Valsalva test, but they are detected by special examination methods (ultrasound in Doppler mode);

Grade I: palpable only with a Valsalva sample;

Grade II: palpable at rest, there is no visible dilation of the veins of the spermatic cord;

Grade III: venous dilation is determined both visually and with palpation.

A meta-analysis of randomized and observational studies has shown that men with pathospermia have statistically significantly improved ejaculate parameters after surgical varicocelectomy.

Randomized studies of subclinical varicocele have shown the ineffectiveness of treatment in relation to pregnancy rates. In addition, randomized studies involving men with normal ejaculate parameters did not reveal the advantages of surgical treatment of varicocele before follow-up. In a review of the Cochrane database (2013), the authors concluded that there is evidence of an increase in the frequency of pregnancy after varicocelectomy in men with infertility that cannot be explained by other reasons.

In the analysis of subgroups of five randomized trials comparing the observation in men with clinically manifested varicocele, oligozoospermia and unexplained infertility, there was a tendency in favor of surgical treatment with a combined risk ratio of 2.39 (95% 1.56–3.66). A recent meta-analysis has shown that varicocelectomy improves spermogram results in men with oligozoospermia.

The main complications described in the literature after Ivanissevich's surgery are hydrocele, suppuration of the surgical wound and recurrence of varicocele. According to a number of authors, they occur in 5-33% of cases.

Unfortunately, both in the literature and in practice, serious complications arising after Ivanissevich's surgery and endovascular interventions are rarely covered and discussed very reluctantly. So, in the available literature there are only mentions of them. This is a ligation of the ureter or lymphatic vessels, as well as the external iliac vein.

Common disadvantages of endovascular methods include the effect of radiation exposure, pain syndrome, thrombosis, thrombophlebitis and hematomas, the likelihood of allergic reactions to X-ray contrast agents, etc. The recurrence rate is also quite high, however, by using antegrade arterial sclerotherapy through access in the immediate vicinity of the inguinal canal, good results were achieved in reducing the number of complications and relapses [Muslimov Sh.T., Bogdanov A.B., 2011].

The following is an example of a standard compiled by Allazov A. et al. (2015) concerning acute complications of varicocele. (table 1).

Table 1. Acute complications of varicocele.

№	Complications
1.	Pain syndrome: intense stabbing pains and burning in the testicle, acquiring the character of neuralgia
2.	Rupture of the wall of vein: a) with the formation of a hematoma b) with the formation of a varicose node in the scrotum
3.	Thrombosis
4.	Phlebitis
5.	Iatrogenic: a) bleeding after surgery b) ligation and dissection of the ureter

Scientists from Dehli Medical University describe the case of "Thrombosed varicocele" as a rare cause of acute scrotal pain: Acute scrotal pain has several causes, torsion of the testicle or its appendages and epididymoorchitis are common, whereas varicocele thrombosis is a rare cause. Varicocele thrombosis can occur after surgery or spontaneously. Spontaneous thrombosis can occur as a result of injury or in patients with blood clotting disorders [Bolat D., et al., 2016].

Sexual or athletic activity, infections, injuries, long-hour flights and drugs can cause varicocele thrombosis. Thrombosis in varicocele (both spontaneous and postoperative) is usually treated conservatively in all patients to date with medications (antibiotics and anti-inflammatory drugs) and scrotal suspension. There are conflicting reports regarding the timing and necessity of surgical intervention in patients with thrombosed varicocele. Consequently, the timing and necessity of surgical intervention in patients with thrombosed varicocele are becoming an extremely controversial issue. In vivo spontaneous blood clots have historically been mistaken for the formation of blood clots in the veins after varicocelectomy in vitro. The histopathological difference between these two separate micropreparations should be emphasized.

Thrombosed varicocele has been described as a rare cause of acute scrotal pain. Postoperative thrombosis in the pelvic plexuses is usually treated conservatively with antibiotics, analgesics, and scrotal elevation in compliance with bed rest [Zampieri N., et al., 2014]. To date, all cases mentioned in the literature have been treated conservatively without any indication of the surgical treatment needed in such cases. Summarizing all the reports, we came to the conclusion that drug treatment can be successful if only one superficial seminal vein is involved, and if most of the pampiniform plexus is thrombosed, surgical treatment will have the best result. This conclusion is similar to the conclusion of those who believed that treatment can be started

conservatively, in case of emergency failure with surgical intervention [Bolat D., et al., 2016]. Therefore, we believe that if severe pain persists despite adequate drug therapy (nonsteroidal anti-inflammatory drugs, scrotum elevation and rest for 7-10 days), such patients should be subjected to immediate surgical intervention.

Varicocelectomy provides complete pain relief and should be considered as the method of choice in this subgroup of patients who have not received relief from conservative treatment. Another controversial question is whether to simply ligate a vein or completely excise a segment of a thrombosed vein. Mallat [etal. (2014)] also reported a case where they performed a complete excision of a thrombosed vein [Mallat F., et al., 2014]. They also performed surgical excision of the thrombosed vein, as they believed that a simple dressing could not completely relieve the pain. Another worrying consideration is that a delay in performing a varicocelectomy is likely to lead to ischemic damage to the testicle. They postulate that in patients with severe scrotal pain that does not go away after 7 days of drug therapy, the possibility of varicocelectomy should be immediately considered, which may lead to the preservation of the testicle.

Scientists from the National Medical University of the USA provide a description of the “varicocele rupture” during sneezing based on a well-documented clinical case. Acute scrotal hematoma resulting from spontaneous rupture of the varicocele is rare in daily practice. Symptoms may be similar to testicular torsion, testicular appendix torsion, epididymoorchitis, or malignant neoplasm.

Acute scrotal hematoma, secondary to spontaneous varicocele rupture, is very rare in daily practice. Systematic literature search on PubMed, EMBASE and the Cochrane Library, using indexes of medical subject headings, keyword search engines and publication types, using the following keywords: varicocele rupture, or spermatic cord hematoma, or spermatic cord hematocele, three main causes can be differentiated, namely idiopathic, spontaneous hematomas [Akay S., et al., 2011; Vandana G., Maruti D., 2016; Kampel L., et al., 2010], as well as a result of blood clotting disorders. [Siegel R.L., et al., 2017].

According to a review of reported cases of idiopathic spontaneous scrotal hematomas, they are the result of a sudden increase in abdominal pressure that leads to varicocele. It is not known whether an abdominal injury can lead to increased pressure in the abdominal cavity, which will lead to rupture of the varicocele. Patients with left-sided varicocele develop increased venous pressure during the Valsalva maneuver.

Accurate differential diagnosis can be facilitated by collecting the patient's medical history with an emphasis on possible trigger events. The events preceding spontaneous scrotal hematoma in the literature could be narrowed down to an increase in abdominal pressure. The existing literature describes various types of activity preceding spontaneous scrotal hematoma: pressure during defecation, sexual intercourse, blunt abdominal trauma [Pepe P. et al., 2015], lifting weights, stretching in tight pants or after training on a centrifuge fighter pilot [Kampel L. et al., 2015], spontaneous hematoma after playing the saxophone.

Clinical manifestations of patients with spontaneous varicocele rupture have been reported in the form of acute pain (83%) and acute inguinal edema of the scrotum (100%), which are also difficult to distinguish from testicular torsion, appendage torsion or malignant neoplasm. It is important to note that patients with testicular cancer usually have a painless education. Only 10% of patients have acute symptoms such as pain, so in the presence of pain, malignant neoplasm becomes more unlikely. Unfortunately, no cremaster reflex has been reported in any of the clinical cases. With the exception of three cases, all spontaneous hematomas (83%) were found on the left side, which corresponds to a higher incidence of varicocele on the left. Diagnosing the cause of acute scrotal pain and edema can be difficult, and a differential diagnosis should include conditions such as testicular torsion, malignant neoplasms, epididymoorchitis or a pinched inguinal hernia [Pepe P. et al., 2015].

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