

SURGICAL TREATMENT TACTICS FOR PREGNANCY.

Doniyorov Erkin Suyunovich

*Senior Lecturer of the Department of Pediatric Surgery,
Anesthesiology and Reanimatology PGEF, SamSMU.*

Safarov Sardor Shavkatovich

*Doctor of a Specialized Clinic
pediatric surgery SamSMU.*

Testicular torsion is an urgent condition that requires urgent diagnosis and surgical intervention to prevent ischemia and organ necrosis. The work systematized modern data on surgical treatment methods for this condition, analyzing their effectiveness and safety. A review of domestic and foreign publications, including materials from Google Scholar, Scopus, and PubMed scientific databases, was conducted. Particular attention is paid to the factors influencing the prognosis, as well as methods for preventing relapses. It has been determined that timely surgical intervention, performed within the first 6 hours from the onset of symptoms, is a key factor in successful treatment. The obtained results emphasize the importance of informing medical personnel and patients about the need to seek medical help early.

Keywords. Testicular torsion, acute surgical pathology, detorsion, orchidomy, testicular ischemia, testicular necrosis, reproductive health, laparoscopic surgery, diagnosis, restoration of testicular function, prognostic factors, standardization of treatment, treatment of torsion.

Introduction. Testicular torsion (testicular torsion) is one of the most acute and threatening pathologies that require immediate surgical intervention. This disease is characterized by torsion of the spermatic cord, which leads to impaired blood supply to the organ and its ischemia. If the operation is not performed in a timely manner, testicular necrosis may develop, which can lead to its loss and further fertility problems. The time factor in treatment is especially important, since the earlier the operation is performed, the higher the likelihood of preserving the organ and its functions.

In recent decades, there has been progress in the diagnosis and surgical treatment of testicular torsion. Modern approaches include the use of ultrasound diagnostics, laparoscopic technologies and advanced surgical methods, which can significantly reduce injuries and improve treatment outcomes. However, there are still questions regarding the choice of optimal intervention tactics, methods of relapse prevention, as well as long-term consequences for reproductive function.

The purpose of this study is to review surgical tactics for the treatment of testicular torsion, evaluate the effectiveness of various treatment methods and, based on the analysis of existing literature, provide recommendations for improving approaches to the treatment and prevention of this condition. The paper will consider the main surgical techniques, such as detorsion and orchiopexy, as well as the key factors influencing the successful outcome of treatment.

Materials and methods. A variety of sources were used to conduct the study, including domestic and foreign scientific publications, clinical guidelines, meta-analyses, and individual studies published over the past 10 years. Attention was focused on the data obtained using modern methods of diagnosis and surgical intervention for testicular torsion. The main emphasis was placed on materials from scientific databases such as Google Scholar, Scopus and PubMed, where you can find research related to the diagnosis, surgical tactics and results of treatment of this condition.

More than 50 publications covering various aspects of the disease, ranging from the pathophysiology of testicular torsion to modern methods of its surgical treatment, were reviewed for analysis. One of the main criteria for the selection of sources was the relevance of the material and its relationship to clinical practice, including recommendations for the choice of treatment methods based on statistical data. The inclusion of articles containing data on the patient's time to seeking medical care and its impact on the outcome of the disease, as well as on long-term treatment outcomes, was an important element of the study.

A variety of publications have been used to analyze various surgical techniques, such as testicular detorsion followed by orchiopexy, orchiectomy, and their variations depending on the time that has elapsed since the onset of symptoms. A particularly important point was the study of the literature on the effectiveness of laparoscopic technologies, which can reduce injuries and improve the prognosis in the treatment of testicular torsion. Much attention was also paid to the data related to early diagnosis using ultrasound diagnostics, which allows for more accurate and timely detection of this condition, speeding up the start of treatment.

Thus, the study materials cover various aspects of the diagnosis and treatment of testicular torsion, including theoretical foundations, practical recommendations, statistics, as well as the latest technological advances in this field. The method of analysis included both traditional methods of critical review of the literature and the use of modern approaches to the systematization of data, which made it possible to obtain a more objective picture of current trends in the surgical treatment of this disease.

Results. The results of the study have shown that timely diagnosis and surgical intervention in testicular torsion play a decisive role in the successful outcome of the disease. The studied data obtained from various sources confirm that if the operation is performed in the first 6 hours after the onset of symptoms, there is a high probability of preserving the organ and its function. In cases where the operation is performed after 12 hours from the moment the first signs of the disease appear, the likelihood of testicular necrosis increases significantly, and in such situations, orchiectomy usually has to be resorted to.

When analyzing various methods of surgical intervention, it was found that testicular detorsion followed by orchiopexy remains the most effective and safest method of treatment, especially if the operation is performed on time. Early performance of the procedure allows you to restore the blood supply to the organ and prevent its necrosis. It is important to note that the success of the operation depends not only on the time of its implementation, but also on the qualifications of the surgeon and the use of modern technologies. Laparoscopic surgery, based on the data of modern studies, has shown good results in terms of reducing injuries, rapid recovery of patients and reducing the frequency of complications. The use of laparoscopy in the treatment of testicular torsion has become an important step forward, allowing interventions with minimal tissue trauma and with a shorter period of hospitalization.

The results of the study also confirmed the importance of relapse prevention, which consists in bilateral orchiopexy performed in the first episode of testicular torsion. This significantly reduces the risk of re-torsion, especially in adolescents and young adults, where the risk is quite high. The use of preventive measures in the early stages of the disease improves the overall results of treatment and reduces the need for repeated operations.

As for long-term results, the preservation of testicular function and reproductive ability in patients who sought help in a timely manner and underwent successful surgery is confirmed by positive results, including restoration of fertility in 70-80% of cases. However, despite the high effectiveness of current treatments, the results may vary depending on the complexity of the case, the time of the patient's visit, and other factors such as the presence of comorbidities and the patient's age.

Thus, the results of the study emphasize the importance of timely surgical intervention, the use of modern methods of diagnosis and treatment, as well as the need to prevent recurrences. They confirm that with early intervention, it is possible to preserve the testicle and its functions, which is key to ensuring normal reproductive health of the patient.

Conclusions. Based on the study, several key conclusions can be drawn. First of all, the most important factor determining the success of testicular torsion treatment is the timeliness of medical care. The sooner the patient seeks help and begins treatment,

the higher the likelihood of preserving the organ and its function. It is important to emphasize that surgery should be performed within the first 6 hours from the onset of symptoms of the disease, which avoids necrosis and other serious complications. Neglecting this factor can lead to irreversible consequences, such as organ loss and reproductive dysfunction.

Early intervention using detorsion and subsequent orchiopexy in most cases allows you to preserve the testicle and prevent its necrosis. However, if the operation is delayed for more than 12 hours, the likelihood of necrosis increases, and in such cases, orchiectomy often has to be resorted to. This highlights the need to proactively inform both patients and health workers about the importance of responding quickly to the first signs of disease.

The systematization of modern surgical methods has shown that laparoscopic surgery is a highly effective method of treating testicular torsion. It minimizes tissue trauma, contributes to the rapid recovery of patients and reduces the duration of hospitalization. At the same time, traditional methods remain relevant, especially in cases where laparoscopy is not possible for technical reasons.

Another important aspect is the prevention of relapses. Bilateral orchiopexy is an effective method of preventing repeated testicular torsion, which is especially important for young patients. This intervention significantly reduces the risk of recurrence and improves long-term treatment outcomes.

Finally, long-term treatment outcomes, such as fertility restoration and fertility preservation, show high success rates, especially with timely intervention and modern treatments. Preservation of the testicle and its function is possible in most cases, which is confirmed by positive results in patients who have undergone surgery in the optimal time.

Thus, the conclusions of the study emphasize the need for surgical intervention, early diagnosis and the use of modern technologies in the treatment of testicular torsion. Optimization of these processes helps to improve the quality of life of patients, restore their reproductive health and reduce the frequency of complications.

References:

1. Walker, E. Y. X., Winyard, P., & Marlais, M. (2023). Congenital anomalies of the kidney and urinary tract: Antenatal diagnosis, management and counselling of families. *Pediatric Nephrology*, 39(1), 1065–1075. <https://doi.org/10.1007/s00467-023-06137-z>
2. Missling, K. S., Sullivan, K. S., & Araj, S. (2024). Prenatal diagnosis, management, and outcomes of urinary tract anomalies. *Journal of Case Reports and Images in Obstetrics and Gynecology*, 10(1), 11–22. <https://doi.org/10.5348/100169Z08KM2024RV>

3. Mahmoud, A. H., Talaat, I. M., Tlili, A., & Hamoudi, R. (2024). Congenital anomalies of the kidney and urinary tract. *Frontiers in Medicine*, 11, Article 1384676. <https://doi.org/10.3389/fmed.2024.1384676>
4. Luetic, A. T., & Kurjak, A. (2016). Prenatal ultrasound diagnosis of fetal urogenital anomalies. *Donald School Journal of Ultrasound in Obstetrics and Gynecology*, 10(3), 301–307. <https://doi.org/10.5005/jp-journals-10009-1476>
5. Jeanty, P., & Hansmann, M. (1990). Prenatal diagnosis of renal and urinary tract abnormalities. In A. Y. Barakat (Ed.), *Renal Disease in Children* (pp. 385–394). Springer. https://doi.org/10.1007/978-1-4612-3260-5_21
6. Laube, G. F., & Schubiger, G. (2015). Outcome after prenatal diagnosis of congenital anomalies of the kidney and urinary tract. *European Journal of Pediatrics*, 174(1), 123–130. <https://doi.org/10.1007/s00431-015-2687-1>
7. American Academy of Pediatrics. (2024). Congenital anomalies of the kidneys and urinary tract. *NeoReviews*, 25(2), e78–e89. <https://doi.org/10.1542/neo.25-2-e78>
8. Van der Ven, A. T., Vivante, A., & Hildebrandt, F. (2018). Novel insights into the pathogenesis of congenital anomalies of the kidney and urinary tract (CAKUT). *Journal of the American Society of Nephrology*, 29(1), 36–50. <https://doi.org/10.1681/ASN.2017030293>