

PROBLEM OF TREATMENT OF PATIENTS WITH HYPOSPADIAS

(literature review)

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Introduction

Hypospadias -malformation of the penis of boys, in which there is a curvature of the penis towards the scrotum as a result of underdevelopment of the spongy part of the urethra. The external opening is located on the lower surface of the glans penis, scrotum or perineum of boys. The penis is deformed and bent downwards. Hypospadias develops as a result of a violation of embryogenesis at 7-14 weeks of intrauterine development of the fetus. Severe forms of hypospadias can be combined with impaired development of the internal genital organs. There are 3 main forms of hypospadias, capitate, stem, scrotum. In about 45% of cases, it is combined with other anomalies, among which the first place is occupied by cryptorchidism, meatostenosis, and inguinal hernia. According to Yu, F. Isakov hypospadias is the most common anomaly of the urethra and occurs in 1 in 150 newborn boys.

Keywords: hypospadias, urethroplasty, penile malformation, genital reconstruction.

Story.Based on the above statistical data, we can say that hypospadias is quite widespread among boys. There are different theories about the history of hypospadias, one theory says that the fusion of the urethral folds extends the entire length of the urethral body to the top of the head, the other suggests that the growth of the epidermis "channels" the capitate of the urethra [3]. The accumulated experience of surgical correction of penile curvature, a number of histological studies of urethral tissues forced researchers to reconsider the principles of surgical treatment of hypospadias and approaches to it [20]. The severity of changes in hypospadias can vary from minimal - a slight displacement of the opening of the urethra on the glans penis and to a severe degree with severe deformity of the penis



and localization of the urethra in the perineum. The problem remains relevant, because it has not only a medical but also a social aspect, associated with a man's ability to create a family and with his reproductive ability. Techniques have been developed that preserve tissue from the hypospadiac meatus to the apex of the glans penis [15, 20]. Thanks to the work of J. Duckett and his colleagues, the term urethral platform was developed, which later a number of supporters of this idea began to denote what was previously called the notochord. With a normal signal, normal development and differentiation of the genital tubercle was noted (determined by the presence of cartilage), the removal of the developing epithelium greatly slowed down the growth of the genital tubercle. The study of the growth patterns of the penis has led to a revision of the embryology of the development of the urethra [1,2,5 The main causes of hypospadias are considered to be genetic disorders and hormonal changes in the mother during pregnancy. Previously it was believed that the tissue along the ventral surface of the penis in proximal hypospadias is the main cause of ventral curvature and should be completely resected. Less attention was paid directly to the elimination of the curvature of the penis than to the issues of urethroplasty. Issues of hypospadias have not been studied enough, it is believed that hypospadias may be due to trauma caused by amniotic bands, or early urinary excretion by the kidneys.

Thus, with the underlying mesenchymal signal during the development of the capitate urethra, the differentiation of the urothelium into a stratified squamous epithelium occurs.

Etiology. Hypospadias is a malformation of the penis, in which there is an incomplete fusion of the ureteral folds with the ectopia of the urethral outlet, which is associated with shortening and changes in the organ. This pathology is quite rare: the frequency of occurrence is one in 150-300 newborn boys, but it is one of the most common anomalies in men, in addition, there has recently been a persistent trend towards an increase in the incidence of hypospadias. If in the 80–90s of the last century the incidence of hypospadias in newborn boys was 1:400–500, then at present it is already 1:125–150 cases. we can talk about a more than threefold increase in the incidence of this disease over the past 30–40 years. The hereditary form of hypospadias in relation to non-hereditary occurs in a ratio of approximately 1:3. Most often, the development of the defect is associated with a violation of the



hormonal process of the mother of the child. Environmental factors, the use of various chemicals, dyes, bad habits, and alcohol consumption also play an important role in etiology. According to the publications of various authors, over the past 40 years there has been a significant increase in this pathology. Hormonal status is also of great importance in the development of hypospadias. The formation of the external genital organs from embryonic rudiments requires a sufficient level of androgens. Under their influence, the genital tubercle transforms into the penis, and the genital folds into the scrotum. The influence of hormones is most important at the 7-15th week of embryonic development, when the embryogenesis of the genital organs occurs. The causes of complications in the surgical treatment of this form of hypospadias, in the opinion of many researchers, are based on two important factors - a wide variability in the clinical forms of the anomaly and, as a result, a variety of methodological approaches in the surgical treatment of the defect. result . Despite the huge variety of described operations, they are far from always and often require repeated interventions. Thus, The success of the treatment of hypospadias in children depends not only on the correct choice of surgery, but equally on many nuances of postoperative management of the optimal method of diversion of urine by applying a bandage, the use of modern atraumatic suture material and microsurgical instruments significantly improves the results of surgical treatment of hypospadias.

General concepts and terminology Hypospadias is a combined anomaly in the development of the genital organs and urethra. Treatment of hypospadias in children is carried out only surgically. The variety of applied methods of treatment is due to the large number of complications and the search for the optimal method of surgery to correct hypospadias.. Genetic studies have not revealed significant deviations in the number of autosomes and the combination of sex chromosomes in patients with hypospadias. The set of sex chromosomes in most patients was the same as in healthy men. The localization of the external opening of the urethra is the defining feature in most classifications of hypospadias. The existing majority of classifications of hypospadias are based on specification of the location of the dystopian meatus and do not have a fundamental difference. Clinically, the degree of hypospadias is determined by the location of the urethral outlet, when the meatus opens in the region of the glans penis (I degree), its body (II degree), and the scrotal region (III degree). Currently, most use the classification of hypospadias according



to Barcat (1973), according to which the localization of the external opening of the urethra is determined after the elimination of the curvature of the penis. According to this classification, the following are distinguished: "anterior" hypospadias, including capitate, coronal and anterior stem forms; "middle" or middle-stem hypospadias; the most severe "posterior" hypospadias with posterior trunk, trunk-scrotal, scrotal and perineal forms. If a description of anatomy is given, then sometimes it contains a number of inaccuracies. In addition, almost always, the anatomical terminology used is difficult to compare with that given in the works of foreign authors. The description of the normal anatomy of the penis is given by Devine and Horton in their work [107], which is still considered fundamental in hypospadiology. When surgically correcting hypospadias, the following nuances of anatomy should be considered. The skin on the ventral surface of the trunk distal to the split spongy body is significantly thinned and can be intimately soldered to it and to the dysplastic distal urethra. Also, the underlying fascia (dartos and buck) on the ventral surface may be underdeveloped and soldered together. Sequential stages of development of the urethra, when there is a delay in the formation of the urethra, the timing of development is comparable to various forms of hypospadias. The delay in the development of the caudal end of the fetus at the 7th week leads to the development of proximal forms of hypospadias, after the 10–13th week, distal forms of the disease occur. In children of the same age, penis sizes often differ [7]. The degree of curvature of the penis must be taken into account by measuring it in degrees. Cosmetically significant are the shape of the scrotum and the severity of the transition between the womb and the penis, the scrotum and the penis, the peno-pubic and penoscrotal angles, respectively [2]. member from deeper structures and its displacement proximally [6]. The study of the size of the penis in patients with hypospadias after puberty showed that the length of the penis in patients with proximal forms is significantly shorter even in the absence of concomitant endocrinological problems, which means that hypospadias can be considered as a developmental pathology not of the urethra, but of the entire penis [10]. Given what has been said about the pathological anatomy in hypospadias, it is rather difficult to imagine a classification that would fully reflect all its aspects. Despite this, most authors adhere to the classification based on the position of the meatus [6]. Others suggest isolating hypospadias that has previously undergone surgical correction



[11]. All of the above dictates the need to improve the management of patients with hypospadias,

Survey methods. All patients (parents of children) complain of an incorrectly formed penis, most of them (92.0%) noted the wrong direction of the jet during urination. Curvature bothered 37.8% of patients, rotation - 14.7%. Only in 23.6% of children, parents paid attention to the narrowing of the jet during urination or prolonged urination. All patients underwent conventional clinical and laboratory tests (complete blood count, enzyme immunoassay for hepatitis C, and urinalysis) and specialist consultations (pediatrician, if necessary, narrow specialists) before elective surgery. Particular importance is attached to the examination of the external genital organs and a detailed assessment of the constituent elements of the defect. In differential diagnosis in order to establish the sex of a child in severe forms of hypospadias, one should be based on the typical structural features of the external genital organs. It is recommended to determine the size of the penis, the shape of the head and the severity of the navicular fossa, the degree of curvature, as well as the location of the meatus. Diagnosis of hypospadias is not difficult and relatively simple. Urofluometry is mandatory for all patients with hypospadias. [8, 12]. Based on the results of urofluometry and responses of patients, their parents and doctors in the course of filling out various kinds of questionnaires, an opinion is built on the effectiveness of surgical treatment in most clinics in the world. With a reduced rate of urination, the urination curve has the shape of a "plateau", and normally - the shape of a "bell".

Classification. The degree of curvature of the penis in hypospadias was reflected in the classification of N.E. Savchenko (1974) N. Barkat indicates that in order to choose the correct treatment regimen for a patient, not only the degree of dystopia of the external opening of the urethra and the degree of curvature of the penis is important, but also the distribution of the skin, which is local plastic material for the formation of the urethra.

Savchenko classification:

1. Hypospadias of the penis.
 - A) Hypospadias of the coronary sulcus
 - C) Pericapital hypospadias.
 - C) hypospadias of the distal third of the penis



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- D) Hypospadias of the middle third of the penis
E) Hypospadias of the proximal third of the penis
F) Articular hypospadias
2. Scrotal hypospadias
A) Hypospadias of the distal third of the scrotum
B) Hypospadias of the middle third of the scrotum
3. Scrotal-intermediate hypospadias
4. Intermediate hypospadias
5. "Hypospadias without hypospadias"

Hypospadias classification according to Barcat:

- I. Anterior hypospadias:
a) capitate;
b) coronary;
c) anterior stem.
II. Middle hypospadias:
a) medium-stem.
III. Posterior hypospadias:
a) rear-stem;
b) trunk-scrotal;
c) scrotum;
d) perineum.

Thus, the variety of forms of hypospadias, characterized by the degree of dystopia of the external opening of the urethra along the length, the associated condition of the stem part of the penis, the degree of underdevelopment of the cavernous body of the urethra, the preputial sac of the glans penis are due to a violation of the complex process of formation of the urethral tube and its further evolution.

Treatment. The treatment of hypospadias is largely considered an aesthetic operation [2, 11-20], and in its treatment the surgeon prefers the method that gives the best cosmetic result [20].

Despite the fact that about 200 methods of surgical treatment of hypospadias are described in the modern literature, however, none of them is considered ideal, which encourages surgeons to continue searching for the optimal treatment option for

hypospadias [6]. Data from clinical studies show that in the late postoperative period, the incidence of complications and adverse events is 30-50%, which is a very high rate [14, 18, 20]. Promising are techniques that use the foreskin of the penis as a plastic material [12]. All types of surgical operations for hypospadias are divided into two large groups: one-stage and two-stage operations. One-stage consists in excision of the chord, expansion of the penis and skin grafting from the foreskin to the body of the penis, to further create the urethra. Two-stage (6 months after the first) urethroplasty is performed from the transplanted skin. The advantage of one-stage operations is the elimination of the defect during one surgical intervention, but it is not always ideal. Most modern authors consider single-stage techniques to be more preferable [5, 17, 18]. Two-stage operations are indicated for proximal forms of the defect, as well as for repeated operations, when there is a large deficit of plastic tissues. However, a large number of complications forced surgeons to significantly narrow the indications for their use [4, 19]. The most favorable results of surgical treatment are observed in patients with distal forms. If in the capitate, scrotal and stem forms the number of unsuccessful results is within 10-20%, then in the distal form the number of relapses has been reduced in recent years to 4-9% [8, 16]. Most of the authors found that for the treatment of distal forms, it is sufficient to use one-stage techniques, in particular, the MAGPI technique, as well as Matthew in case of underdevelopment of the urethral platform [3, 11]. method is being actively modernized. According to the MAGPI method with the use of a continuous screw-in suture, it will bring to a positive result in 80% of cases. In most patients, it is possible to successfully correct the defect, the analysis of publications of domestic and foreign authors shows that the frequency of complications in the postoperative period reaches 50% or more. that the use of the foreskin as a plastic material has been carried out for many years, so far the method has been actively modernized. According to the MAGPI method with the use of a continuous screw-in suture, it will bring to a positive result in 80% of cases. In most patients, it is possible to successfully correct the defect, the analysis of publications of domestic and foreign authors shows that the frequency of complications in the postoperative period reaches 50% or more. that the use of the foreskin as a plastic material has been carried out for many years, so far the method has been actively modernized. According to the MAGPI method with the use of a continuous screw-in suture, it



will bring to a positive result in 80% of cases. In most patients, it is possible to successfully correct the defect, the analysis of publications of domestic and foreign authors shows that the frequency of complications in the postoperative period reaches 50% or more. Thus, many issues related to hypospadias remain unresolved and require further research.study. This is especially true for aspects of surgical treatment, due to the fact that none of the methods proposed to date is perfect. It can be said that the absence of a direct correlation between the level of testosterone and the degree of vascularization of the prepuce skin in patients with hypospadias allows, along with genetic disorders, to assign a significant role to the process of dysangiogenesis in the development of this pathology. According to the results of the study, the stem form of hypospadias occurs more often than the proximal forms, in which the dystopic meatus is located in the middle third of the trunk of the hip, is stenotic and causes difficult urine outflow. Conducted instrumental - laboratory methods of research and surgical methods of treatment, aimed at correcting this anomaly using grafts of various tissues did not exclude the occurrence of common postoperative complications. Correction of hypospadias should be carried out at an early age, given the increased ability of tissues to regenerate in young children. Thus, the occurrence of postoperative complications suggests research to develop standardized approaches to the assessment of hypospadias and the choice of surgical treatment in order to improve the results of urethroplasty.

Considering the above, the surgical technique, suture material, cutting out flaps, instruments have an important effect.

Literature

1. Abekenov BD, Bishmanov RK. Correction of hypospadias in children home of the formation of an artificial neourethra. Bulletin of KazNMU. 2013;3:112-3.
2. Ashcraft K. U., Holder T. M. Pediatric surgery. T. III. St. Petersburg, 1999, pp. 28–50, 79–105.
3. Bolotova NV, Sharkov SM, Konovalova OL. Psychological disorders in boys with corrected hypospadias. Russian pediatricsky magazine.2015;1:20-4.
4. Barukhovich VYa. Laparoscopy in the diagnosis of formation disorders sex in children with hypospadias. Surgery for children. 2015;1-2:25-9.

5. Volkova O. V., Pekarsky M. I. Embryogenesis and age-related histology of human internal organs. Moscow, 1976.

6. Dubrov VI, Khmel RM, Strotsky AV. Etiology and prevalence hypospadias price Belarus | Healthcare. 2011;7:13-6.

7. Zharkimbaeva AD, Aubakirov MT, Dyusembaev AA. Comparative analysis methods of treatment of distal form of hypospadias in children. *Science and health protection*.2014;6:79-83.

8. Inoyatov ASH. Characteristics of the frequency of occurrence of congenital pathologies in Bukhara region. *Bulletin of problems of biology and medicine*. 2010;1:238-40.

9. Ivlieva IV, Polunin VS. Features of morbidity in boys with developmental anomalies and acquired pathology of the genital organs. *Practical medicine*.2011;5:102-5.

10. Lopatkin N. A., Pugachev A. G. Pediatric urology: A guide. Moscow, 1986, pp. 217–242.4

11. Lyulko A. V. Surgical andrology. Moscow, 2005, pp. 159–212.

12. Rudin YuE, Marukhnenko DV, Garmanova TN. The use of analog-digital scale for preoperative assessment of the condition of the penis in patients with hypospadias. *Experimental and clinical uro- gia*.2013;4:110-4.

13. Rudin YuE, Garmanova TN, Marukhnenko DV. Comparative evaluation of space results of urethral plastic surgery according to Snodgrass and Methieu using questionnaires in patients with hypospadias. *Experiment- tal and clinical urology*.2014;3:96-9.

14. Moskaleva N, Rudin Yu, Yarovoy S. Treatment of hypospadias in children. *Doctor*.2013;1:8-11.

15. Staroverov OV, Kazan IV. Prospects for the development of hypospadiology. *Andrology and genital surgery*.2016;2:76-83.

16. Savchenko N. E. Hypospadias and hermaphroditism. Minsk, 1974.

17. Severgina L. O. The role of dysangiogenesis in malformations of the genitourinary system // Abstract of diss. Moscow, 2014.

18. Tashpulatov B.K. Evaluation of hormonal status in children with hypospadias. Abstract of diss. Moscow, 2009.



19. Esembaev BI. Optimization of the treatment of hypospadias in children in the Kyrgyz Republic. Problems of modern science and education. 2010;17:122-6.

20. Baskin L. S., Himes K., Colborn T. Hypospadias and endocrine disruption: is there a connection? // environment. Health Perspect., 2011, Nov.109(11), pp.1175–1183.

21. Beleza-Meireles A., Lundberg F. FGFR2, FGF10 and BMP7 as candidate genes for hypospadias // Eur J. Genet, 2007, Apr15(4), P405–410

22. Brouwers MM, van der Zanden LFM, de Gier RPE, Barten EJ, Zielhuis GA, Feitz WFJ, et al. Hypospadias: risk factor patterns and different phenotypes. *BJU international*.2010;105(2):254-62.

24. Carmichael SL, Shaw GM, Lammer EJ. environmental and genetic contributors to hypospadias: a review of the epidemiologic evidence. *Birth Defects Res A Clin Mol Teratol*.2012;94(7):499-510.

25. Duckett J. W. Advances in hypospadias repair // Postgrad. Med. J., 1990, 66 Suppl.1, pp. 62–71.

26. Fisch H, Hyun G, Hensle TW. Rising hypospadias rates: disproving a myth. *Journal of Pediatric Urology*.2010;1:37-9.

27. Schönbucher VB, Weber DM, Landolt MA. psychosocial adjustment, health-related quality of life, and psychosexual development of boys with hypospadias: a systematic review. *Journal of Pediatric Psychology*. 2008;5:520-35.

