

S.O. Kupryakov, N.F. Stepanyuk, V.A. Savvina, V.A. Grigoriev,
A.R. Varfolomeyev, V.N. Nikolaev, Ya.G. Pavlov.

THE EXPERIENCE OF APPLICATION OF THE URETHROPLASTY BY SNODGRASS

ABSTRACT

The revolution in urethroplasty became the method of an American professor Warren Snodgrass, who proposed in 1996 to dissect the urethral area and form a urethra (TIP-tubularized incized plate) from it, and the formed defect healed by secondary tension. Currently, the operation by Snodgrass is the latest achievement of surgery, which cannot be performed by every doctor. In the presented work a new method of urethroplasty is analyzed and introduced into clinical practice, performed on the basis of the Urology department of the PC RHN¹-NCM.

Key words: hypospadias, children's urology, urethroplasty.

INTRODUCTION

The subject of this method is topical, as it is devoted to modern surgical aspects of treating patients with the malformation of the urinary system as hypospadias. Surgical treatment of this disease has undergone significant changes and nowadays there is no single approach to the treatment of congenital malformation [1, 2]. The number of different methods of urethroplasty exceeds 500 variants, this indicates that there is no «gold standard» in the treatment of hypospadias. But despite of it, in the last decade, the results of hypospadias treatment have significantly improved. First of all it involves the use of microsurgical instruments, modern ultra-thin synthetic material and optical zoom [3, 4, 5]. But the search for new variants of urethroplasty takes place.

Objective is to improve the results of surgical treatment of children with hypospadias by putting into practice modern methods of correction of defects, in particular, the technique of urethroplasty by Snodgrass into clinical practice of surgical treatment in children with hypospadias.

MATERIALS AND METHODS

Since January 2013, a new kind of urethroplasty by Snodgrass has been introduced in the Urological Department PC RHN¹-NCM. By January, 2016, 27 urethroplasties were performed using this method for children with hypospadias of capitate and stem forms. Children's age: 18 months - 6 years.

Complaints at admission: deformation of the penis, cosmetic defect of the foreskin, atypical urination (female type), difficulty urination.

Preoperative examination included: general clinical minimum (blood tests, urine tests), ultrasonic examination of the urinary system and pelvic organs.

In addition, according to the indications: urinal tests. Urine inoculation for sterility, determination of sexual

chromatin and content of 17 KS in the urine followed by consultation in the medical genetic laboratory, micturating cystography, urethroscopy, uroflowmetry.

The combination of hypospadias with congenital anomalies of the urinary system was noted in 11% of patients: inguinal hernia and dropsy of testicular membranes – 2, cryptorchidism - 1.

The preoperative examination changed the tactics of treatment in a number of patients with hypospadias.

All operations on the urethra plastic were performed after the elimination of the concomitant pathology (Table).

Two patients underwent recurrent operations. Indication for the operative correction of hypospadias was the elimination of the functional and cosmetic defect of the penis. Criteria for assessing the results of surgical treatment of patients:

1. Presence of complaints from the patient and parents;
2. Urodynamic characteristics: the direction of the urine stream and its characteristics (stress, duration of urination, etc.);
3. Cosmetic: appearance of the penis (the presence of deformity, the shape of balanus, the place and shape of the external urethral opening, etc.);
4. Socio-psychological (criticism of the patient to himself, problems in the team, etc.).

The purposes of the operation with hypospadias are:

1. Complete elimination of curvature of the penis and restoration of a normal erection;
2. Formation of the missing part of the urethra, free from hair, strictures and fistulas and movement of the external urethral opening on the penis balanus;
3. Restoration of the passage of urine on the urethra;
4. Restoration of the appearance of the penis;
5. Restoration of normal sexual

function.

The basic principle of all single-stage plastic used in the clinic is a full exposure of the cavernous body of the penis, which allows to excise fibrotic bands more carefully, to assess the degree of dysplasia of the skin and prepare the stock of plastic material for the main and final phase of the operation - the urethra plastic and closure of the penis.

Urethroplasty by Snodgrass consists in cutting out and mobilization of the flap at a site bordering urethral meatus (by Dupley type) and then a longitudinal incision of urethral plate to a depth of cavernous bodies is performed, which leads to a significant increase of the total area of urethral plate (to 2-3 times). Next urethroplasty on age-gauge catheter is performed without any tension of neourethry tissue and without the risk of the fistula formation in this place. In the future, the formed urethral defect is completely epithelialized, which reduces the likelihood of fistula formation. In the future, the trunk of the penis is closed by skin flaps from the foreskin. All operations were performed under optical magnification using atraumatic suture material.

In the postoperative period, we used polyvinylchloride urethral catheters for urinary diversion. The optimum was catheter insertion at 1-2 cm proximal to the internal sphincter, which allowed to produce a prolonged drainage of the bladder without signs of cystalgia. Transurethral derivation was carried out for 10 days.

At the end of the operation, a gauze pad impregnated with glycerin was applied.

Distribution of operated patients with different forms of hypospadias

Form	Number of patients, abs. number, %	Number of operations
Balanic	17 (63)	17
Penile	10 (37)	12
Total:	27 (100)	29

After that, the compression bandage was applied with a gauze or elastic bandage spiral, from the penis balanus to the base. Stitches in the postoperative period were not removed in view of lysis of the suture material within 2-3 months.

RESULTS OF THE STUDY

27 urethroplasties were performed by Snodgrass. The average age of boys was 4 years. Age of 2 years is considered to be preferred age for urethroplasty, because in this case the penis becomes larger and the children underwent easier inpatient care. The duration of the operation was 55 minutes on average. The elastic bandage is applied for 5 days. The duration of the catheterization of the bladder is 10 days. Antibiotic therapy in the postoperative period was performed with the use of broad-spectrum antibiotics. Antibiotic treatment lasts until the catheter is removed, with the first injection of an antibiotic performed before the operation for the purpose of perioperative antibiotic prophylaxis. A week later uroseptics were prescribed for 10-14 days. The average duration of inpatient care after the operation is 12 days (dressings, physiotherapy). Complications took place in two patients (7.4%) in the form of a fistula urethra (1 case) and meatostenosis (1 case). These children underwent operations on suturing the fistula and meatotomy, dissection of external urethral opening. In the future the complications were not observed.

CONCLUSIONS

1. The method of one-stage correction of hypospadias by Snodgrass allows to eliminate malformation in the early periods practically at any distal and

average form of the defect.

2. Correction of hypospadias with the help of urethroplasty by Snodgrass causes postoperative complications with a low frequency (7.4%).

3. The effective method for postoperative urine diversion is transurethral urine derivation.

REFERENCES

1. Rudin Ju.Je. Rekonstruktivno-plasticheskie operacii pri lechenii gipospadii v detskom vozraste [Reconstructive plastic surgery in the treatment of hypospadias in childhood], 2004.
2. Rudin Ju.Je. Sposob odnomomentnoj korrekcii proksimal'noj gipospadii dejepitelizirovannym loskutom krajnej ploti [The method of simultaneous correction of proximal hypospadias with de-epithelialized flap of foreskin] Urologija [Urology], 2002, No. 5, p. 59-63.
3. Kagancov I.M. Hirurgicheskaja korrekciya tjazhelyh form gipospadii u detej [Surgical correction of severe forms of hypospadias in children] Kazanskij med. zhurnal [Kazan Medical Journal], 2012, No. 2, p. 255-260.
4. Fajzullin A.K., Kovarskij S.L., Menovshnikova L.B. et al. Operativnoe lechenie proksimal'nyh form gipospadii u detej s ispol'zovaniem bokovogo kozhnogo loskuta na sosudistoj nozhke [Operative treatment of proximal forms of hypospadias in children using a lateral cutaneous flap on the vascular pedicle] Det. hir. [Children surgery], 2003, No. 5, p. 34-35.
5. Shirjaev N.D., Kyrkalova T.I., Savenkov I.Ju. Hirurgicheskaja korrekciya distal'nyh form gipospadii u detej metodom Snodgrass [Surgical correction of distal hypospadias in children by Snodgrass method] Det. hir.

[Children surgery], 2011, No. 3, p. 4-8.

The authors

1. Kupryakov Sergey Olegovich, head of the Urological Department of the Pediatric Center, Republican Hospital №1, National Centre of Medicine, e-mail: skupryakov@yandex.ru;

2. Stepanjuk Nina Fedorovna, the doctor, pediatric urologist-andrologist of the Urological department of Pediatric center, Republican Hospital №1, National Centre of Medicine;

3. Grigoryev Vasilij Afanasevich, the doctor, pediatric urologist-andrologist of the Urological Department of the Pediatric Center, Republican Hospital №1, National Centre of Medicine;

4. Pavlov Jan Gryanovich, the doctor, pediatric urologist-andrologist of the Urological Department of the Pediatric Center, Republican Hospital №1, National Centre of Medicine;

5. Savvina Valentina Alekseevna, Doctor of Medical Sciences, Professor of the Department of Pediatrics and Pediatric Surgery, Medical Institute, North-Eastern Federal University named after M.K. Ammosov, the chief freelance pediatric surgeon, e-mail: SavvinaVA@mail.ru;

6. Varfolomejev Ahmed Romanovich, Doctor of Medical Sciences, Professor of the Department of Pediatrics and Pediatric Surgery, Medical Institute, North-Eastern Federal University named after M.K. Ammosov;

7. Nikolaev Valentin Nikolaevich, Associate Professor of the Department of Pediatrics and Pediatric Surgery, Medical Institute, North-Eastern Federal University named after M.K. Ammosov.

V.A. Savvina, A.Yu. Tarasov, V.N. Nikolaev, A.R. Varfolomeev, N.E. Petrova, K.K. Bozhedonov

LONG-TERM RESULTS OF TREATMENT OF SACRO-COCCYX AREA TERATOMAS

ABSTRACT

The article presents the results of treatment of sacro-coccygeal teratomas in newborns in the period from 2001 to 2015. In the majority of the newborns the pathology was detected prenatally. The level of AFP in the neonatal period is not a diagnostic criterion of malignancy, but it can serve as a screening method in the postoperative period. In the postoperative period, patients should be observed in a pediatric oncologist at any histological conclusion, as the probability of malignancy and recurrence of the tumor is high thereafter. In 30% of cases there is a malignant course of sacro-coccygeal teratoma.

Keywords: teratoma, malignancy.

Teratomas of the sacro-coccygeal area are one of the frequent malformations, which are more often detected in the period of newborn or antenatal. In large teratomas, a prenatal consultation is conducted to determine the mode of

delivery. Teratomas of predominantly retroperitoneal arrangement may appear later with a rectal compression clinic or dysuric symptoms. In most cases, the diagnosis of sacro-coccygeal teratomas does not cause difficulties, as a rule, early

surgical intervention is performed [1, 2]. Further tactics is decided by the results of a histological study of the removed tumor. But the statement of a benign tumor variant does not exclude careful observation of the child, since there are