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LONG TERM RESULTS OF THE REPRODUCTIVE SYSTEM AFTER SURGICAL CORRECTION OF UNILATERAL CRYPTORCHIDISM

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ABSTRACT

This article examines the long-term results of the reproductive system after surgical treatment of 86 patients with cryptorchidism. The data obtained confirm the feasibility of an earlier surgical correction of cryptorchidism in children. There are several options for the incorrect location of the testicles. The situation when the testicle did not descend on only one side occurs 5 times more often than the undescendedness of both testicles. The results obtained in the study of the long-term results of surgical treatment of cryptorchidism in children showed that the brought down testicle lags behind in development compared with the healthy one, this is especially noticeable in testicular hypoplasia.

KEYWORDS: *Cryptorchidism, Reproductive System, Operation, Testicle, Hormonal Status, Infertility.*

INTRODUCTION

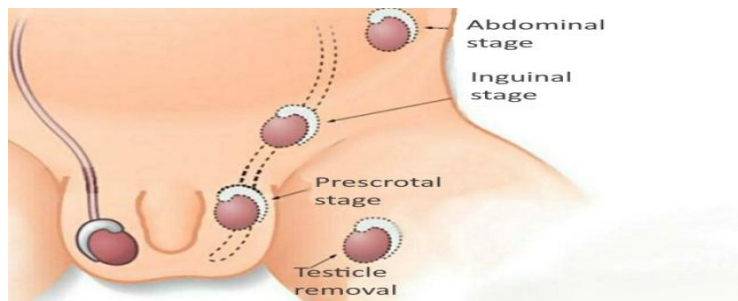
Reproductive health is one of the most important problems in medicine [13,1,3] . The anomaly of the location and structure of the gonads, cryptorchidism, which is widespread in childhood, has a direct connection with the state of the reproductive system. Cryptorchidism is a violation of the descent of the testicles into the scrotum. With normal intrauterine development of the child, prolapse occurs by the time of birth, in 2-3% of boys it occurs spontaneously during the first 3 months of life, in 0.5-1% of men it does not occur. There are several options for the incorrect location of the testicles. The situation when the testicle did not descend on only one side occurs 5

times more often than the undescendedness of both testicles. It has been proven that for normal development the testes must be in the scrotum. During intrauterine development, the testicle contains special (embryonic) cells that are responsible for the further development of sperm in an adult man. If the testicle has not descended into the scrotum, then, starting at 6 months, the number of these cells may decrease. The higher the testicle is, the fewer these cells are. This anomaly occurs in 30% of premature infants and 4% of full-term infants [2,5]. Among children of preschool and school age, the frequency of cryptorchidism, according to different authors, ranges from 0.1 to 11% [2]. Descent of the testicle is not always completed by the time the baby is born, especially with a low body weight - less than 1500g. Subsequently, during the first month of life, it independently descends into the scrotum in 10–20%, and over the next 6 months - in another 30% of newborns. These data must be taken into account when choosing a treatment strategy [6]. Unfortunately, even timely surgical treatment aimed at bringing the testicle into the scrotum does not guarantee the patient's future fertility. Thus, infertility affects from 80 to 100% of men operated on for bilateral cryptorchidism and 60% - with unilateral form [2,5].

In addition, the disease can give the following complications:

- increased risk of oncology: in such patients, the risk of developing seminoma increases 10 times;
- increased risk of testicular torsion: in addition to very severe pain, this is fraught with the death of the organ, if medical assistance is not provided in time.

In children operated on for cryptorchidism over the age of 7 years, the ability to conceive is reduced to 25%, spermatogenesis in undescended testes can be impaired already during the second year of a child's life [11,7]. The causes of this complication are still debated by urologists around the world [8].



A number of authors advocate the removal of a pathologically developed testicle [15,12]. But, despite the fact that in 12% of cases with a non-palpable testicle, the diagnosis of atrophy is confirmed intraoperatively [9], if it is possible to bring down, one way or another, a preserved testicle, orchipexy is often performed [4,16]. The relationship between cryptorchidism and subsequent infertility has been discussed by many researchers around the world for more than a dozen years. However, there is still no single view of the problem [14,10].

OBJECTIVE: To determine the state of the reproductive function of men operated on for unilateral cryptorchidism in Urgench branch of RSSPMCU in the period from 2012 to 2020 years.

MATERIAL AND METHODS

The study was based on 120 patients who received surgical treatment at the Urgench branch of the RSSPMCU . Depending on the condition of the testicle, the patients were divided into two groups: Group I - 40 (34%) patients who were diagnosed with testicular hypoplasia during the operation. At the same time, 23 (57%) had right-sided cryptorchidism, 17 (43%) had left-sided. Abdominal retention was found in 6 (15%) patients. In other cases, the testicle was in the inguinal canal. In the II group - 80 (66%) patients with testicular dimensions resp t update themselves age norm. Of these, 49 (62%) had left-sided and 31 (28%) right-sided cryptorchidism. The abdominal form of testicular retention was found in 9 (12%) patients. All patients underwent reduction and orchidopexy. Studies conducted in the long-term period included: clinical examination, study of hormonal status (testosterone, free testosterone, follicle-stimulating hormone (FSH), lutinizing hormone (LH) and prolactin), Doppler sonography of the scrotal organs (Sono Scape SSI - 5000 Sono apparatus , Japan) , analysis of spermograms by WHO .

RESULTS

Group I included patients operated on at the age of: from 2 to 5 years - 22 (54%); from 6 to 8 years old - 14 (35%); from 9 to 15 years - 4 (11%) patients. In the second group, these indicators were as follows: from 2 to 5 years - 48 (60%); from 6 to 8 years old - 29 (36%); from 9 to 15 years old - 3 (4%).

Long-term results of treatment were studied on average from 8 to 12 years after surgery in 86 (72%) patients from 120: 30 (75%) from group I and 56 (70%) from group 2.

The age of the patients at the time of the study of long-term results ranged from 18 to 26 years, on average 21,6 years.

When interviewed, all patients denied erectile dysfunction. On an objective examination, the development of secondary sexual characteristics corresponded to the age criteria. On palpation in the first group in all patients (100%), the brought down testicle was pulled to the root of the scrotum and testicular hypoplasia was revealed. And in the second group, hypoplasia was detected in 11 (20%) patients.

When analyzing the hormonal status, the level of testosterone and free testosterone in 5 (16,7%) patients of the first group and in 4 (7,1%) patients of the second group showed a decrease from normal values. And the level of FSH, LH and prolactin in all patients remained within the normal range.

Ultrasound examination of the scrotal organs revealed that in group I of the examined the average size of the brought down testicle significantly lagged behind in development compared with the norm. In group II, the average testicle dimensions, although different, were close to the lower limit of the standard indicators.

TABLE 1

Testicle size, cm	Group I (n = 30)	Group II (n = 56)
Length (n = 4.0 - 4.5)	2.56 ± 0.34	3.7 ± 0.8
Width (n = 2.5 - 3.5)	1.43 ± 0.68	2.2 ± 0.54

Thickness (n = 2.0 -3.0)	1.2 ± 0.41	1.56 ± 0.31
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One of the main criteria for reproductive health is spermogram indices. All examined patients underwent sperm analysis according to WHO

TABLE 2

Indicators	I group (n = 30)	II group (n = 56)
Ejaculate volume (2-5 ml)	1.7 ± 1.1	2.9 ± 1.3
Sperm concentration (> 60.0x10 / ml)	40.1 ± 2.3	45.3 ± 1.7
Mobility sperm (50%):		
Actively mobile	37.2 ± 1.8	43.3 ± 1.5
Sedentary	21.3 ± 0.6	24.6 ± 1.8
Stationary	32.9 ± 3.8	29.6 ± 2.9
Normal sperm (70%)	48.2 ± 3.2	67.5 ± 1.3
Pathological forms (19%)	33.1 ± 2.5	27.2 ± 2.2
Live sperm count (75%)	41.2 ± 4.9	64.4 ± 4.2

As can be seen from the data given in the table in both groups there was a decrease in indicators compared to the norm. The volume of ejaculant was below normal, the percentage of normal sperm in group I was almost 2 times lower than normal, of which actively motile ones reach 37.2%, with a norm of 50%, there is a high percentage of pathological forms - 48.2% (the norm is up to 19%), the number of living people was 41.2%, which is significantly lower than the standard indicators. In group II, these indicators, although they were reduced, on average approached the lower line of normal indicators.

CONCLUSIONS

The results obtained in the study of the long-term results of surgical treatment of cryptorchidism in children showed that the brought down testicle lags behind in development compared with the healthy one, this is especially noticeable in testicular hypoplasia. Testicular functional activity is also reduced, which negatively affects reproductive health. In addition, the risk of developing malignant cryptorchid testis is several times higher than that of a testicle located in the scrotum. This once again confirms the advisability of an earlier surgical correction of cryptorchidism in children.

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