

Prevalence Of Hypospadias In The Population Of Children In Andizhan

Mamasaliev N.S., Nurmatov Y.Kh., Alimov M.M., Tursunov Kh.Kh., Kalandarov D.M.
Andijan State Medical Institute, Uzbekistan

ABSTRACT. An analysis of available approaches to the management of patients with hypospadias was carried out, as well as some controversial issues regarding diagnosis in this category of patients. As available data show, surgical treatment of hypospadias has not yet led to the restoration of aesthetic and functional components, as a result of which the optimization of surgical treatment in modern conditions continues to remain relevant the task of pediatric reconstructive plastic surgery. Attention is paid to such areas as standardization of approaches to surgical treatment of hypospadias, unification of methods of urethroplasty and correction of penile curvature. Data from clinical studies on the use of various surgical techniques are presented.

Key words: hypospadias, urethroplasty, penile malformation, pediatric urology, genital reconstruction

The aim of the study: to study the prevalence, improve the effectiveness of prevention and surgical treatment of hypospadias based on our own innovative developments in children of the Fergana Valley.

Materials and methods: The object of the study were 914 children with hypospadias in the Fergana Valley (in the Andijan region - 202, in the Namangan region - 467 and in the Fergana region 245) aged 0 - 18 years.

The subject of the study was venous and capillary blood, urine, analysis of subjective and objective data, assessment of risk factors, materials, digital rectal examination of the prostate gland, data from drug therapy and surgical treatment, as well as endoscopic and urodynamic equipment.

Research methods. To achieve the goal of the dissertation and fulfill the set tasks, subjective, physical, survey, clinical, biochemical, pharmacoepidemiological, instrumental, special (digital rectal, echographic, transrectal ultrasound, uroflowmetric, urethrocystoscopic, surgical) and statistical methods were used.

Results and discussion. We studied in a comparative aspect the epidemiological features of the detection of capitate hypospadias (CH) and its individual clinical forms of PCH, DSH and MSH in children of the Andijan region of the Fergana Valley (the obtained data are presented in Table 1 and Fig. 1).

The following prevalence levels of CH (n = 113) were established depending on the age of the examined children: 3.54% at 0–1 years, 69.03% at 2–4 years, 23.01% at 5–9 years, 2.65% at 10–14 years, and 1.77% at 15–18 years. The detection rate in relation to age varies by 68.3%, with its highest levels occurring in the age groups of 2–4 years and 5–9 years [Xi2 15.507; Df = 8; P < 0.05].

Comparative frequency of prevalence of various forms of capitate hypospadias in children of Andijan
Table No. 1

Age (years)	Prevalence of glans hypospadias							
	PCH (n=3)		DSH (n=99)		MSH (n=11)		Total CH (n=113)	
	N	%	N	%	N	%	N	%
0 – 1	0	0,00	3	75,00	1	25,00	4	3,54
2 – 4	2	2,56	71	91,03	5	6,41	78	69,03
5 – 9	1	3,85	22	84,62	3	11,54	26	23,01
10 – 14	0	0,00	2	66,67	1	33,33	3	2,65
15 -18	0	0,00	1	50,00	1	50,00	2	1,77

0 - 18	3	2,65	99	87,61	11	9,73	113	100,00
Statistics $\chi^2=15,507$; Df=8; P < 0,05								

Note:

- CH – capitate hypospadias;
- PCH – peri-coronal form of capitate hypospadias;
- DSH – distal stem form of capitate hypospadias;
- MSH – middle stem form of capitate hypospadias.

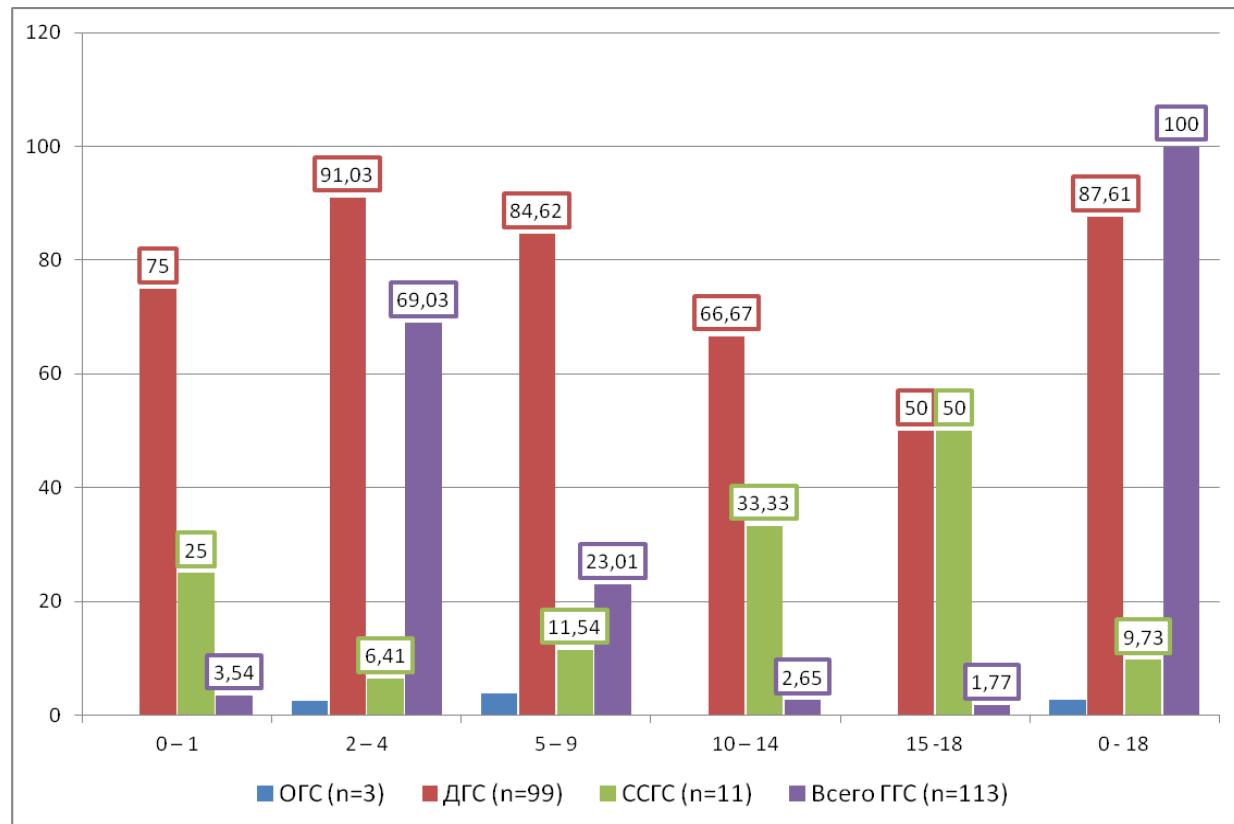


Fig. 1. Epidemiological features of glans hypospadias in children of the Andijan region of the Fergana Valley

The prevalence rate of CH in individual age groups of children was: 0.00% in 0–1 years, 2.56% in 2–4 years, 3.85% in 5–9 years, 0.00% in 10–14 years, 0.00% in 15–18 years, and 2.65% in 0–18 years. High prevalence was noted among children aged 5–9 years.

Depending on the age of the examined children of Andijan, the frequency of detection of DSH (n = 99) and MSH (n = 11) was established at the following levels: at 0-1 years 75.0% and 25.00% (P < 0.01), at 2-4 years 91.03% and 6.41% (P < 0.001), at 5-9 years 64.62% and 11.54% (P < 0.001), at 10-14 years 66.67% and 33.33% (P < 0.01), at 15-18 years 50.00% and 50.00%, at 0-18 years 87.61% and 9.73 (P < 0.001), respectively.

Comparatively high prevalence rates of DGS were established in the age groups of children 2–4 years old, 5–9 years old, and 0–1 years old, and of MSH in the age groups of 15–18 years old, 10–14 years old, and 0–1 years old.

Table 2 and Fig. 2 show the epidemiological characteristics of proximal hypospadias (PHS) in the population of Andijan children.

Comparative frequency of prevalence of various forms of proximal hypospadias in children of Andijan
Table No. 2

Age (years)	Prevalence of proximal hypospadias									
	PSGS (n=20)		TSGS (n=19)		MHS (n=16)		Pr GS (n=15)		Total PHS (n=70)	
	N	%	N	%	N	%	N	%	N	%
0 – 1	3	15,0	2	10,5	1	6,3	1	6,7	7	10,0
2 – 4	8	40,0	9	47,4	7	43,8	7	46,7	31	44,3
5 – 9	6	30,0	5	26,3	4	25,0	5	33,3	20	28,6
10 – 14	2	10,0	2	10,5	3	18,8	1	6,7	8	11,4
15 – 18	1	5,0	1	5,3	1	6,3	1	6,7	4	5,7
0 – 18	20	28,6	19	27,1	16	22,9	15	21,4	70	100,0

Statistics: $\chi^2=2,433$; Df=12; P>0,05

Note: • PS GS – proximal stem hypospadias;
 • TSGS – trunk-scrotal proximal hypospadias;
 • MHS – scrotal proximal hypospadias;
 • Pr GS – perineal proximal hypospadias;
 • PHS – proximal hypospadias.

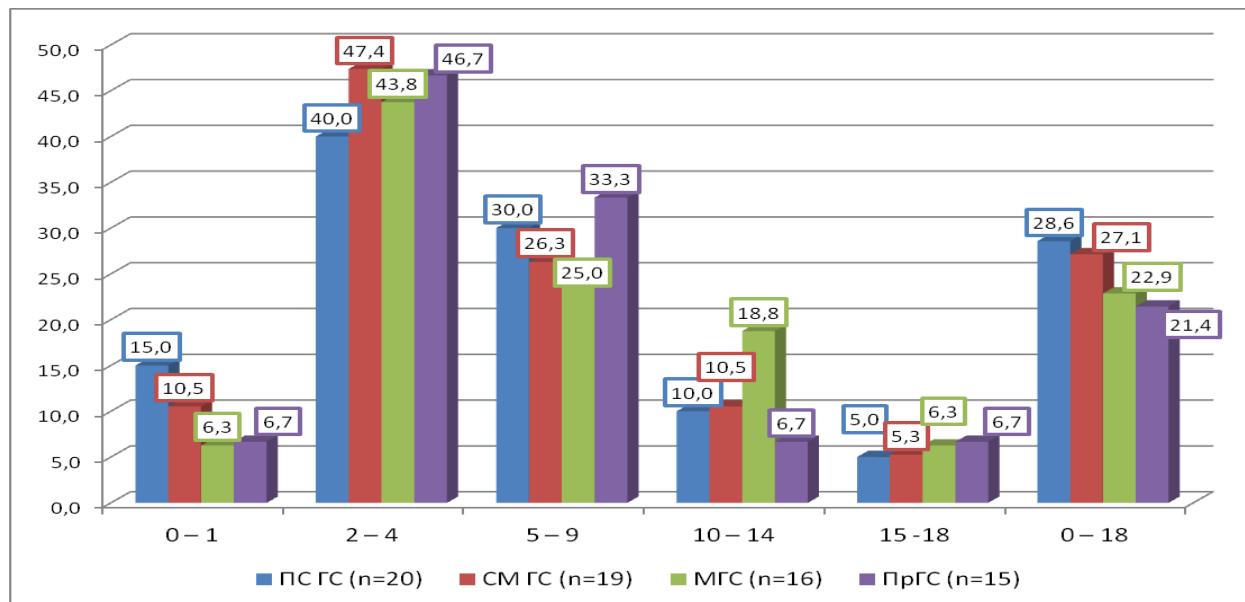


Fig. 2. Epidemiological characteristics of PHS in children in Andijan

From the results shown, it follows that proximal stem hypospadias (PSGS) and stem-scrotal proximal hypospadias (MHS) are confirmed in different age groups with the following prevalence rates: at 0–1 years old by 15.0% and 10.5% (P< 0.05), at 2–4 years old by 40.0% and 47.4% (P< 0.05), at 5–9 years old by 30.0% and 26.3% (P> 0.05), at 10–14 years old by 10.0% and 10.5%, at 15–18 years old by 5.0% and 5.3%, at 0–18 years old by 28.6% and 27.1% (P> 0.05).

The prevalence rates of scrotal proximal hypospadias (MHS) and perineal proximal hypospadias (Pr GS) in relation to age were: 6.3% and 6.7% at 0–1 years, 43.8% and 46.7% at 2–4 years, 25.0% and 33.3% at 5–9 years (P< 0.05), 18.8% and 6.7% at 10–14 years (P< 0.001), 6.3% and 6.7% at 15–18 years, and 22.9% and 21.4% at 0–18 years (P> 0.05).

In total, PGS (n = 70) depending on age is determined by prevalence with a difference of 39.6% or 8.8 times [Xu2 = 2.433; Df = 12; P> 0.05]. High frequency of detection is noted in groups of children 2–4 years old (44.33%) and 5.9 years old (28.6%); significantly lower prevalence of PHS is confirmed in the age groups of examined children 0–1 years (10.0), 10–14 years (11.4%) and 15–18 years (5.7%).

Next, we analyzed the epidemiological characteristics of congenital penile curvature (CPC) and its forms such as minimal congenital penile curvature (MCPC), penile rotation (CPRP), urethral wall dysplasia (URWD) and penoscrotal transposition of the proscrotal and perineal forms (Table 3 and Fig. 3).

Comparative frequency of prevalence of individual forms of congenital curvature of the penis in children of Andijan
Table No. 3

Age (years)	Prevalence of congenital penile curvatures									
	MCP (n=8)		VIPChr (n=4)		UWCdsu (n=3)		PenoTPPF (n=4)		HIV (total) (n=19)	
	N	%	N	%	N	%	N	%	N	%
0 – 1	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2 – 4	4	50,0	2	50,0	2	66,7	2	50,0	10	52,6
5 – 9	3	37,5	1	25,0	1	33,3	1	25,0	6	31,6
10 – 14	1	12,5	1	25,0	0	0,0	1	25,0	3	15,8
15 -18	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
0 - 18	8	42,1	4	21,1	3	15,8	4	21,1	19	100,0

Statistics: $\chi^2 = \text{NaN}$; Df=12; P > 0,05

Note: •MCP – minimal congenital penile curvature;
 • VIPChr – penile rotation;
 • UWCdsu – urethral wall dysplasia;
 • PenoTPPF – penoscrotal transposition of proscrotal and perineal forms.

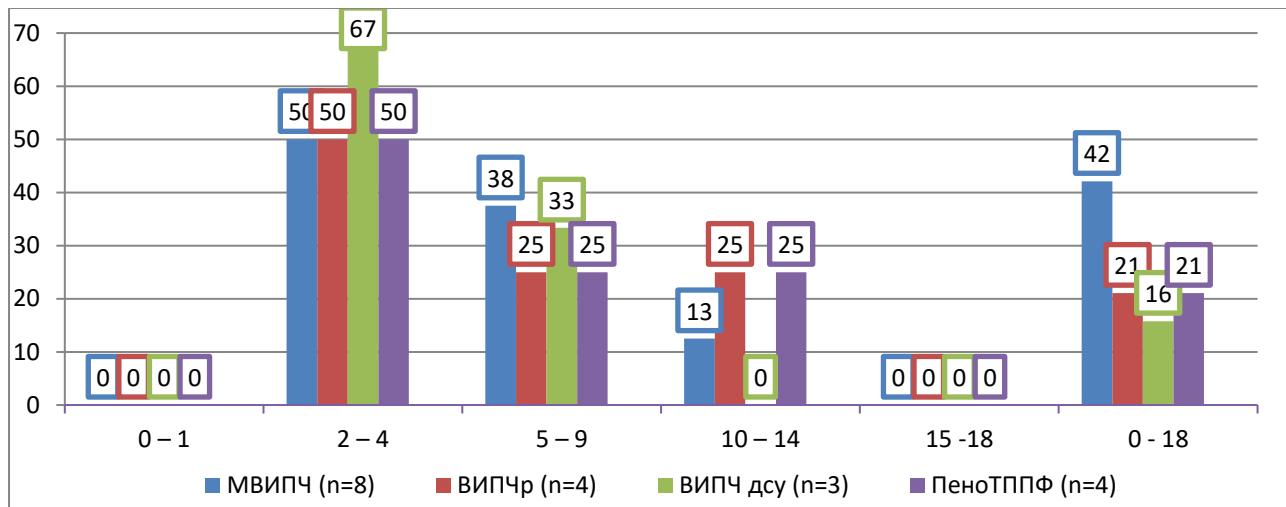


Fig. 3. Epidemiological characteristics of congenital curvatures of the cephalopendinus in children of Andijan

HIV in certain age groups of children is observed with a difference in prevalence of up to 52.6%. At the age of 0-1 years it is not detected (0.00%), at 2-4 years 52.6%, at 5-9 years 31.6%, at 10-14 years 15.8% and at 15-18 years 0.00% [Df = 12; P> 0.05].

The prevalence rates of MCP and VIPChr in relation to age were established at the following levels, respectively: at 0-1 years old by 0.00% and 0.00%, at 2-4 years old by 50.0% and 50.0%, at 5-9 years old by 37.5% and 25.0% (P< 0.05), at 10-14 years old by 12.5% and 25.0% (P< 0.05), at 15-18 years old by 0.0% and 0.0%, at 0-18 years old by 42.1% and 21.1% (P< 0.01).

In different age ranges of the population of children in Andijan, the prevalence of UWCdsu and PenoTPPF was noted with the following indicators: at 0-1 years old by 0.0% and 0.0%, at 2-4 years old by

66.7% and 50.0% ($P < 0.05$), at 5-9 years old by 33.3% and 25.0% ($P < 0.05$), at 10-14 years old by 0.0% and 25.0% ($P < 0.01$), at 15-18 by 0.0% and 0.0%, at 0-18 years old by 15.8% and 21.1% ($P < 0.05$).

In general, it can be summarized that in the population of Andijan children, hypospadias have some specific features of formation and their frequency of detection largely depends on age.

Conclusion

In the population of children aged 0-18 in the Fergana Valley [“Namangan + Fergana + Andijan”] all risk factors (increased number of pregnancies, hormone intake, environmental factors, risk of miscarriage, toxicosis, bleeding, nephropathy, previous infectious respiratory diseases, young or > 40 years of age, coincidence, twins, low body weight, presence of congenital developmental pathologies, pathology of testicular development, malformations of the urethra), both “maternal” (64.4%) and “Children's” (35.6) are determined with high prevalence levels.

List Of Used Literature

1. Батрутдинов Р.Т., Морозова С.В., Александров С.В., Поляков П.И., Жарова Н.В. Уретропластика INLAY первичной и повторной гипоспадии: оценка результатов с помощью объективных бальных систем HOPE – и HOSE – и SCORE // Урологические ведомости, Научно – практический – журнал для врачей. – 2019. – Спец. выпуск. – С. 19
2. Гарманова Т.Н. Итальянские каникулы детских урологов // Дайдонет Урологии. Специальный выпуск. – 2013. - № 3. – С. 16 – 23.
3. Текчюл С. Главное в детской урологии – создание и внедрение образовательных программ // Дайджет Урологии. Специальный выпуск. – 2013. - № 3. – С. 7 – 14.
4. Anderson, M., et al. Hypospadias repair with tubularized incised plate: Does the obstructive flow pattern resolve spontaneously ? J Pediatr Urol, 2011. 7: 441.
5. Alexander. D.D. et al. Meta – Analysis of Long Chain Omega – 3 Polyunsaturated Fatty Acids (L Comega – 3 PUFA) and Prostate Cancer. Nutr CanCer. 2015. 67: 543.
6. Adams, J. et al. Reconstructive surgery for hypospadias: A systematic review of long – term patient satisfaction with cosmetic outcomes. Indian J Urol, 2016. 32:93.
7. Basros AN, Oliveira LR, Ferrarez CE, et al. Structural study of prepuce in hypospadias does topical treatment with testosterone produce alterations in prepuce vascularization ? J Urol 2011: 185: 2474 – 8.
8. Bergman J.E., Epidemiology of hypospadias in Europe: a registry – based study. WorldUrol. 2015. 33: 2159.
9. Belman, A.B., Hypospadias and chordee, In: Clinical Pediatric Urology A.B. Belman, L.R. King I. S.A. Kramer. Editors, 2002, Martin Dunitz: London.
10. Bell, K.J., et al. Prevalence of incidental prostate cancer: A systematic review of autopsy studies. Int J Cancer, 2015. 137: 1749.
11. Blanc – Lapierre, A. et al. Metabolic syndrome and prostate cancer risk a population – based casecontrol study in Montreal. Canada. BMC Public Health. 2015. 15: 913.
12. Breslow, N. et al. Latent carinoza of prostate at autopsy in seven areas. The International Agency for Research on Cancer, Lyons, France. Int J Cancer, 1977.20: 680.
13. Bratt, O., et al. Family History and Probability of Prostate Cancer, Differentiated by Risk Category: A Nationwide Population – Based Study. J Nati Cancer Inst, 2016. 108.
14. Bush N.C. DaJusta D, Snodgrass WT. Glans penis width in patients with hypospadias Compared to healthy controls. J Pediatr Urol 2013:9: 1188 – 91.
15. Chen, P., et al. Lycopene and rick of Prostate Cacer: A Systematic Review and Meta – Analysis Medicine (Baltimore). 2016. 94: e 1260.
16. Davies, N.M., et al. The effects of height and BMI on prostate cancer incidence and mortality: a Mendelian randomization study in 20,848 cases and 20,214 controls from the Practical Consortium. Cancer Causes Control. 2015.26: 1603.
17. Esposito, C., et al. Effect of metabolic syndrome and its components on prostate cancer risk: metaanalysis. J Endocrinol Invest. 2013.36:132.

18. Ferlay, J., et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GloBocan 2012. *Int J Cancer*, 2015. 136: E 359.
19. Freedland, S.J., et al. Statin use and risk of prostate cancer and high – grade prostate cancer: results from the REDUGE study. *Prostate Cancer Prostatitis Dis.* 2013. 16: 254.
20. Gorduza DB, Gay GL, de Mattos E Silva E, et al. Does androgen stimulation prior to hypospadias surgery increase the rate of healing complications – A preliminary report. *J Pediatr Urol* 2011; 7: 158 – 61.
21. Haid, B., et al. Penile appearance after hypospadias earrection from a parent's point of view: Comparison of the hypospadias objective penile evaluation score and parents penile perception score. *J Pediatr Urol.* 2016. 12: 33e1.