ISSN NO: 2770-2936
November 2024

Diagnosis And Treatment Of Obstructive Uropathy In Children

Kodirov Khusanboy Solievich
Senior teacher of the "Pediatrics" department for the
medical faculty of ASMI

Abstract. The work is based on the results of examination and treatment of 444 children with congenital obstructive diseases of the urinary tract. Based on their results, differentiated treatment was prescribed. Children with functionally conditioned hydronephrosis and bladder-dependent variant of urodynamic disorder in obstructive megaureter received conservative treatment. In case of ureteral variant of functional form of obstructive megaureter and vesicoureteral reflux (VUR) of II–III degree, minimally invasive endoscopic treatment methods were used.
Keywords: children, obstructive uropathies, method, endoscopic treatment.

INTRODUCTION

The term "obstructive uropathy" (OU) unites a complex of structural and functional changes in the renal parenchyma, mainly of the tubulointerstitial type, which develop as a result of impaired urine passage of functional or organic genesis at the level of the calyceal pelvis, ureteral pelvis, vesicoureteral segments or are a consequence of infravesical obstruction [1-3]. OU in children most often includes hydronephrosis, vesicoureteral reflux (VUR) and obstructive megaureter (OMU). OU without timely diagnosis and adequate treatment is accompanied by a delay in the functional development of the kidneys, and with the addition of secondary changes - a complete loss of renal function. Therefore, the assessment of the degree of preservation of renal function determines both the choice of treatment method for OU and the prognosis of this disease. At the same time, the degree of preservation of renal function directly depends on the state of renal hemodynamics [4–5].

MATERIALS AND METHODS

The work is based on the results of examination and treatment of 444 children with congenital obstructive diseases of the urinary tract, who were in the urology department of JSC NRCMD since August 2007. Of these, 202 (45.5%) were diagnosed with hydronephrosis, 79 (17.8%) - megaureter, 163 (36.7%) - PMr (Table 1). As can be seen from Table 1, children under 3 years of age predominated - 212 (47.7%).

Table 1

Distribution of children with mental retardation depending on nosology, gender and age

Nosological form of the disease	*Up to 3 years*		*4–7 years*		*8–11 years*		*12–15 years*		*Total*
	boys	girls	boys	girls	boys	girls	boys	girls	
Hydronephrosis	*69*	*28*	*38*	*9*	*24*	*10*	*12*	*12*	*202 (45,5)*
Megaureter	*36*	*19*	*4*	*10*	*3*	*4*	*2*	*1*	*79 (17,8)*
PMr	*38*	*22*	*6*	*39*	*11*	*24*	*9*	*14*	*163 (36,7)*
in total ...	*143*	*69*	*48*	*58*	*38*	*38*	*23*	*27*	*444 (100)*

Results And Discussion

In case of functional obstruction of the ureteropelvic junction and ureterovesical junction zone, maximum expansion of the pelvis was observed at the 15th minute of the study, but it did not exceed 30% of the initial parameters, and a return to the initial size occurred by the 45th–60th minute.

ISSN NO: 2770-2936
November 2024

On the Dopplerogram of the renal vessels: the vascular tree is preserved, blood flow is determined in all parts of the parenchyma. Renal blood flow was assessed by the resistance index (IR). Normally, IR values fluctuated within 0.78 in children of the first months of life, 0.68 in older children. The spread of IR values at different levels of the renal artery did not exceed 0.03.

Dopplerography of the ureterovesical urine output was performed in all children. emissions from the ureter were characterized by unchanged qualitative characteristics and frequency of emission, the direction of emissions was oriented toward the opposite wall of the bladder, their trajectories intersected in the projection of the midline and were of an alternating, independent nature.

In grades I–II PMR, the echographic and Dopplerographic parameters of the kidneys corresponded to the standards. In children with grade III PMR, the size of the kidneys on the affected side was reduced, and differentiation into the cortical and medullary layers of the parenchyma was unclear. With CDC and ED, diffuse or focal depletion of blood flow was determined. In order to determine the nature of renal vascularization, we used high-tech, minimally invasive and informative methods: magnetic resonance urography with angiographic phase. The advantage of this technique, in addition to improving the visualization of the renal pelvis and ureters, was that after the administration of the diuretic, an acceleration of blood flow in the renal vessels was noted, including in the accessory vessels, which in turn significantly improved the conditions for visualizing the vessels and made it possible in most cases (78%) to diagnose an accessory vessel in the renal pelvic-ureteral segment or in the upper third of the ureter.

The conducted comprehensive examination allowed us to take a differentiated approach to the choice of treatment tactics.

119 (59%) children with functionally conditioned hydronephrosis received a course of conservative treatment.

Of the 83 patients with the organic form of hydronephrosis, 67 underwent plastic surgery of the pyeloureteral segment using the Heins-Andersen method. The remaining 16 children underwent laparoscopic nephroureterectomy due to the absence of renal function. This approach allows local work in the area of the ureteropelvic segment without excessive trauma to the renal paranephrium. A positive effect from surgical treatment was obtained in 64 (95.5%) patients, of which 46 (71.9%) assessed it as good – complete restoration or significant improvement of urodynamics and renal functions, in 18 (28.1%) – as satisfactory – slight improvement or stabilization of the function of the operated kidney, preservation of preoperative obstructive manifestations of urodynamic insufficiency (expansion of the pelvis and impairment of its evacuation function). In 3 (4.4%) patients, deterioration of renal function was noted.

Bladder-dependent variant of urodynamics disorder in UMU caused by neurogenic dysfunction of the bladder of hyperreflexive type was revealed in 53 (67.1%) patients (Group 1). These patients received conservative treatment of neurogenic bladder. Ureteral variant of functional form of UMU was diagnosed in 16 (20.2%) patients (Group 2). These patients underwent endovideoscopic treatment (bougienage, dilation and stenting) of ureterovesical segment. In general, positive results of endovideosurgical treatment of UMU were obtained in 85% of cases. In all these children, course of chronic pyelonephritis from the stage of constant exacerbations passed to stable phase of remission, volume of antibacterial therapy was significantly reduced. The developed method of endosurgical treatment of the ureteral variant without resection of the ureterovesical segment made it possible to change the existing concept of active surgical treatment of children with urodynamic obstruction, in particular, to sharply limit the indications for open surgical treatment and expand the scope of endo-surgical interventions. Group 3 - children with an organic form of obstruction of urodynamic disorders, which was detected in 10 (12.7%) of them. Children with this pathology underwent various types of antireflux surgery.

CONCLUSION

According to our data, the effectiveness of endoscopic treatment for grades I–II PMR was 100% and 80% for grade III PMR, of which 45% of patients achieved PMR elimination with the first glycogel injection, another 20% had PMR eliminated with repeated injection after 3 months, and 15% required glycogel injection for the 3rd time due to persistent PMR, after which a positive result was obtained. At the same time, even with persistent PMR, almost all patients showed a decrease in its degree, as well as a decrease in bladder dysfunction and the frequency of pyelonephritis exacerbations. Thus, the use of an integrated approach to diagnostics using minimally invasive, highly informative methods made it possible to pathogenetically

ISSN NO: 2770-2936
November 2024

substantiate the choice of treatment tactics for OU in children and significantly improve the treatment results for this complex pathology.

REFERENCES

1. Gurevich A.I., Pykov M.I., Shmitkova E.V., Nikolaev S.N. //Materials of the III Russian Congress "Modern Technologies in Pediatrics and Pediatric Surgery". – M., 2013. – p. 552–553.

2. Menovshchikova L. B., Gurevich A. I., Severgina E. S., Nikolaev S. N. // Materials of the II Russian Congress "Modern Technologies in Pediatrics and Pediatric Surgery". – M., 2013. – p. 231.

3. Olkhova E. B. Ultrasound diagnosis of kidney diseases in children. – St. Petersburg, 2016.

4. Guide to Pediatrics / Ed. A. A. Baranova, B. s. Kaganova, P. P. Shilyaeva. – M., 2016.

5. Sabirzyanova Z. R., Kazanskaya I. V., Babanin I. L. // Materials of the IX Congress of Russian Pediatricians "Actual Problems of Pediatrics". – M., 2014. – p. 176–177.