

# MODERN ASPECTS OF NEUROMUSCULAR DYSFUNCTION OF THE BLADDER IN CHILDREN

*Danylov A., Shevchuk D.*

P.L. Shupyk National Medical Academy of Postgraduate Education, Kyiv,  
Ukraine

Zhytomyr Regional Children Clinical Hospital, Ukraine

Zhytomyr State University named after Ivan Franko, Ukraine

Neuromuscular dysfunction of the bladder (NMDB) - multifaceted disease whose main manifestations is a violation of accumulation and/or evacuation bladder function requires careful diagnosis and long-term comprehensive treatment, which is not always quite effective. Particularly noteworthy refractory NMDB in children. The most common causes of dysfunction mainly consider congenital malformations (myelodysplasia, extrophy/epispadias etc.). In the US myelodysplasia occurs with a frequency of 1 in 1000 births and in 95% of cases accompanied NMDB [11]. While 30% of children with disorders of voiding in case myelodysplasia to primary surgery had urodynamic disorders and other complications associated with spinal cord defect [8]. The big problem is the condition in those countries where the law prohibits abortion even in the case of antenatal diagnosed anomalies of the spine and spinal cord (e.g., Poland). Each year in the United States for treatment NMDB spent 26.3 billion dollars, indicating that the huge economic importance of this disease [14].

These aspects of the disease, the lack of standardized whole complex (except conservative therapy) treatments determine the relevance of the search for additional methods of complex treatment NMDB.

Increasingly conduct research activities on urinary incontinence, more common takes neurourology. Searching methods treatment of this disease, which would enable to achieve long-term normalization of voiding that contributes to the physiological and social adaptation patient [5, 10].

The study protocol NMDB children should consist of ultrasound of the kidneys and SM voiding cystography and urodynamic research. Some authors suggest benefits performance uroflowmetry at home that makes it possible to get the best results of the study [6]. If a combination of neurogenic dysfunction of recurrent urinary tract infection should conduct DMSA to determine the degree of kidney damage. Great importance is

attached neuroimaging methods of diagnosis of pelvic floor (CT and MRI).

So, determined that only 37.2% of children with myelodysplasia have renal disease, and 78% of those who observed pathology of the upper urinary ways had bladder-ureteral reflux (mostly high degree) [4, 7, 9, 12].

Given the nature NMDB, it should be noted that in 37% of cases - a lack of sphincter apparatus of urine bladder and deficit its capacity, 22% - only lack of sphincter apparatus, 11% - high pressure in bladder background spastic contraction sphincter, 4% - detrusor overactivity in 26% of patients causes urinary incontinence were mixed. Revealed that 69.4% of patients with urinary incontinence myelodysplasia [2, 7]. Other authors emphasize that urodynamic studies indicate that 62% of patients with myelodysplasia with detrusor contraction and discoordination sphincter, and in some cases sufficient to apply permanent catheterization and anticholinergic drugs. In 45% of patients observed violations locking properties sphincter [5].

Violations urine bladder innervations leads to severe hypoxic changes its walls that worsens impact of drug use means for correcting the pathology urodynamics [5, 9].

Results of treatment of patients with NMDB indicate the need for an integrated approach to problem-solving treatment of severe urinary incontinence in children. The most important aspect NMDB treatment - is prevention of kidney damage. The effectiveness of neurosurgical treatment of urinary incontinence during myelodysplasia achieved only in 28.6% of cases [3, 9].

Only 22.1% for patients with myelodysplasia social adaptation rather complex conservative treatment, patients need rest various surgical correction (not only urological but neurosurgical) [9]. Others authors [1, 5] argue that the positive effect conservative therapy can achieve in 72% of patients, but this positive effect is regarded as an adequate preoperative preparation. Some authors emphasize that in the absence effect of conservative therapy NMDB children with myelodysplasia for 18 months there is a need in the surgical treatment of defects [7].

By the choice of surgical treatment should be approached strictly individually, taking into account the type of incontinence, a condition wall NMDB and central nervous system treatments which were applied in individual patients [13].

Thus, for successful treatment NMDB, particularly in myelodysplasia required hard work urologist, and it is very useful collaboration with neurosurgeon. Only when patients and/or their relatives

aware of the need, importance and complexity of surgical treatment NMDB then can be a satisfactory outcome.

## REFERENCES

1. Борисова С.А. Оптимизация лечения нейрогенной дисфункции мочевого пузыря у детей: Автореф. дис. ...к. мед. н.— М., 2006.
2. Бурханов В.В. Хирургическая коррекция нижних мочевыводящих путей при недержании мочи у детей: Автореф. дис. ...к. мед. н.— СПб, 2009.
3. Бурханов В.В., Осипов И.Б., Лебедев Д.А. Вестник Санкт-петербургского университета. Сер. 11.— Прил. К.— 2008.— Вып. 1.— С. 184—195.
4. Гаджиев Т.В. Урофлоуметрический мониторинг в диагностике нарушений мочеиспускания у детей с хирургическими заболеваниями нижних мочевых путей: Автореф. ...к. мед. н.— М., 2006.
5. Гусева Н.Б. Коррекция нарушений функции мочевого пузыря в консервативном и оперативном лечении детей с недержанием мочи при миелодисплазии: Автореф. дис. ...д. мед. н.— М., 2007.
6. Данилов В.В., Вольных И.Ю. Уродинамические исследования в отборе больных и оценке результатов операции TVT у женщин с недержанием мочи // *Pacific Medical Journal*.— 2004.— N 1.— P. 65—69.
7. Еликбаева Г.М. Система диагностики и дифференцированного хирургического лечения миелодисплазии у детей: Автореф. дис. ...д. мед. н.— СПб, 2009.
8. Николаев С.Н., Меновщикова Л.Б., Шмыров О.С. и др. Принципы хирургического лечения детей с миелодисплазией и недержанием мочи в раннем возрасте // *Детская хирургия*.— 2005.— № 4.— С. 4—8.
9. Осипов И.Б., Хачатрян В.А., Сарычев С.А. и др. Диагностика и лечение миелодисплазии у детей с урологическими осложнениями // *Педиатрия және бала хирургиясы*.— 2008.— № 1.— С. 14—17.
10. Шмыров О.С. Реконструкция сфинктерного аппарата нижних мочевыводящих путей у детей с недержанием мочи при миелодисплазии: Автореф. дис. ...к. мед. н.— М., 2007.
11. Bauer S.B. Neurogenic bladder dysfunction // *Pediatric Clin. North. Am.*— 1987.— Vol. 34.— P. 1121—1132.
12. Joao Luiz Pippi Salle Bladder Neck Reconstruction for the Treatment of Refractory Urinary Incontinence in Children // [http://ww2.ttmed.com/sinsecc.cfm?Http://ww2.ttmed.com/arg\\_sida/texto\\_art\\_long.cfm?ID\\_dis=212&ID\\_Cou=20&ID\\_Art=1633&comecover=Y&ID\\_dis=212&ID\\_cou=20](http://ww2.ttmed.com/sinsecc.cfm?Http://ww2.ttmed.com/arg_sida/texto_art_long.cfm?ID_dis=212&ID_Cou=20&ID_Art=1633&comecover=Y&ID_dis=212&ID_cou=20).
13. Schulte-Baukloh H., Michael T., Schobert J. et al. Efficacy of botulinum-a toxin in children with detrusor hyperreflexia due to myelomeningocele: preliminary results // *Urology*.— 2002.— Vol. 59 (3).— Vol. 325—327.
14. Wagner T.H., Hu T.W. Economic course of urinary incontinence in 1995 // *Urology*.— 1998.— Vol. 51.— P. 355.