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THE NONNEUROGENIC NEUROGENIC BLADDER IN CHILDREN: SPECTRUM OF DYSFUNCTIONAL VOIDING FROM EARLY INFANCY TO OLDER CHILDREN

Aims of Study:

Since the first report by Hinman in 1971, the nonneurogenic neurogenic bladder (NNB) has traditionally been considered to represent a disorder of older children in which urinary tract infections, urinary symptoms as well as uro-radiographic abnormalities of varying degrees are documented in the absence of neurological deficits [1]. Recently, however, NNB of early infancy has been reported [2]. We evaluated clinical features of NNB in children referred to our hospital to highlight the heterogeneity of patients characteristics and the urological management for these children.

Methods:

We retrospectively evaluated 15 children (9 boys, 6 girls, age at presentation 1 day to 14 years with a mean of 6.5 years) with NNB, the diagnosis of which was assigned when a child had the clinical, radiographic and urodynamics features of neurogenic bladder, but no neurological lesion on MRI or anatomical outflow obstruction on endoscopy was detected. Two children had Down syndrome and Williams syndrome, respectively, while mental retardation was noted in 6. Followup periods ranged from 1 to 16 years with a median of 7 years.

Results:

Presenting symptoms were urinary tract infection in 8 children, urinary incontinence in 4 and urinary retention in 3. Age at presentation was much younger in those who presented with urine retention (median 2 months) than others. Incidence of ureteral reflux and renal function impairment was 53% and 20%, respectively. On cystometry involuntary detrusor contraction or poor vesical compliance was noted in 80%, while 85% had detrusor-sphincter dyssynergia or high detrusor pressure during voiding. Due to significant urinary problems including dysfunctional voiding, all were managed with intermittent catheterization. Augmentation cystoplasty was later required in 2 children who had upper urinary tract deterioration refractory to maximum conservative treatment. Voiding function subsequently improved in 3 children and they were converted to voluntary self-voiding at the age of 8, 10, 12, respectively, without any urological complications.

Conclusions:

NNB in children represents a wide spectrum of vesicourethral dysfunction, consisting of reversible transient dysfunction at one end and irreversible, perpetual dysfunction at the other. Because of the potential severity of upper urinary tract problems in these children with NNB, appropriate urinary management should be instituted based on urodynamics findings. Long-term followup is mandatory to seek a possible improvement or normalization of dysfunctional voiding with conservative treatment.

References:

- [1] J Urol (1986), 136; 769-777
- [2] J Urol (1997), 158; 1281-1285

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THE EFFECTS OF INTRAVESICAL OXYBUTYNYN INSTILLATION THERAPY IN PATIENTS OF NEUROGENIC BLADDER STORAGE DYSFUNCTION

[Aims of Study] This therapy was performed to determine the effects of intravesical oxybutynin hydrochloride in patients of neurogenic bladder storage dysfunction.

[Methods] The subjects were nine patients of neurogenic bladder storage dysfunction that have a overactive and/or low compliance detrusor dysfunction. Their baseline diseases were four patients of chronic spinal cord injury, two of spina bifida and a transverse myelopathy, a multiple sclerosis, a unknown disease. We treated by dissolved water with four to six mg (mean five mg) oxybutynin hydrochloride. We examined a subjective symptom and objective parameters by urodynamic studies. There are a maximum bladder capacity, a maximum bladder static pressure, a maximum bladder pressure and bladder compliance.

[Results] We had seven cases of good effects in intravesical oxybutynin instillation therapy. But, one case had been a little effects and other one case had been no effects. In urodynamic parameters, bladder capacity after instillation increased than before one. But, it was not significant. Bladder compliance after instillation significantly improved.

[Conclusions] It was suggested that intravesical oxybutynin instillation therapy effects in detrusor relaxation and enlarged bladder capacity. I think that this effect is direct bladder infiltration of oxybutynin hydrochloride.

[Reference]

- 1) Blendler CB et al: Topical oxybutynin hydrochloride for relaxaion of dysfunctional bladder. *J Urol.* 141: 1350–1352, 1989.
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- 4) Kasabian NG et al: The use of intra vesical oxybutynin hydrochloride in patients with detrusor hyperreflexia. *J Urol.* 151: 944–945, 1994.
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