

DETERMINING THOSE PATIENTS WHO STILL REQUIRE REGULAR DETAILED-EVALUATION OF BLADDER FUNCTION THROUGH URODYNAMIC STUDY AMONG GOOD-ADHERENCE ADULT PATIENTS WITH SPINA BIFIDA.

Hypothesis / aims of study

Clean intermittent catheterization (CIC) has been contributing to the improvement of life expectancy in patients with spina bifida (SB). However, prevention of febrile urinary tract infection (fUTI) during a patient's lifetime, and bladder instability by secondary tethered cord syndrome (sTCS), is an important element of urological management. Previously, the author reported the importance of urodynamic study (UDS) examination for early detection of sTCS (ICS 2015). The author consider UDS a central point of examinations, although UDS needs human resources, time and comes at a cost, and it is more of a burden on patients in comparison to ultrasonography or urinalysis. In long-term follow-up, the author experienced that good-adherence SB patients suffered fUTI for the first time upon commencement of work. In this study, we determined those patients who have displayed risk factors of deterioration of renal function and require UDS examination post-adolescence among SB patients tracked at our institute from infancy.

Study design, materials and methods

A total of 199 SB patients who were admitted to our department from 2000 to 2013 were retrospectively reviewed. Medical records of the patients, urological symptoms, results of examinations and treatment for urological symptoms, including medicine and surgery, were investigated. In the cohort, 56 patients have been continuously tracked from infancy, 22 of those were over 18 years old. Twenty-two of the 56 patients over 18 years were divided into two groups, according to whether they had still UDS examination regularly or not (UDS: non-UDS=7:15, respectively).

Results

The cohort includes 29 male patients and 27 females from the age of 12 to 29 years (median 17 years) with underlying diseases of myelomeningocele (38 patients) and spinal lipoma (18 patients). Fifty-two of the 56 patients used CIC for bladder management. Twenty-three of the 56 patients were prescribed anticholinergic agents regularly and 11 patients had vesicoureteral reflex (VUR). Twenty-five patients had asymptomatic pyuria and 9 of those 25 patients have been receiving fUTI treatments in the last 3 years. The significant risk factors for UDS examination for those over 18 years old were fUTI ($p=0.006$) and VUR ($p<0.001$), but not pyuria ($p=0.083$) (Table 1).

Interpretation of results

Adult SB patient with VUR or a fUTI episode have received regular UDS examination even after they stopped growing, while adolescent patients who don't have these factors avoided UDS examination. Asymptomatic pyuria wasn't a crucial factor in continuous UDS evaluation.

This implies that adult SB patient with VUR or a fUTI episode still have a risk of deterioration of renal function, even though they have visited the hospital regularly and been treated with CIC and anticholinergic agent. The author assumes that the regular school routine allows patients to manage urination strictly and prevent fUTI in spite of having VUR or pyuria.

Concluding message

When Adult SB patients have VUR or a treatment episode of fUTI, health providers should focus especially on management of urination and prevention of deteriorating renal function. In order to evaluate bladder function particularly, UDS should be a central point among examinations. On the other hand, a regular UDS examination can be avoided when SB patients stop growing and get used to managing their urination without VUR or a fUTI episode. Moreover, we should not hesitate to perform invasive treatments including bladder augmentation for the patient suffering repeated-fUTI and/or VUR.

Table 1 Univariate analysis of the necessity of UDS versus various factors

	UDS			nUDS			
	Male	Female		Male	Female		
Gender	6	1		8	7		0.1932
	Y	N	n/a	Y	N	n/a	
fUTI	5	2		2	13		0.006
Ant-Ch	6	1		5	10		0.22
sTCS	3	5		4	10		0.82
Pyuria	1	6		7	8		0.083
VUR	7	0		0	15		<0.001

Disclosures

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