

#394 Comparison and analysis of urodynamics between central neurogenic bladder and peripheral neurogenic bladder in the elderly over 60 years old

QingBin, Jian Guo Wen, et al

The First Affiliated Hospital of Xinxiang Medical University;
Urodynamic Center of First Affiliated Hospital of Zhengzhou University; China

ICS 2022
VIENNA

ICS 2022
VIENNA

Abstract

Aims of study:

To compare the results of urodynamic examination between patients with central neurogenic bladder and patients with peripheral neurogenic bladder.

Methods and Materials

57 elderly patients (aged 60-83 year) of the First Affiliated Hospital of Zhengzhou University in China with NB were included.

Clinical data include age, sex, onset time, and classification of nerve injury.

The parameter of urodynamic examination including:
①maximum urinary flow rate (Qmax)②maximum cystometric capacity (MCC) ③post-void residual urine volume (PRV)④Safe bladder capacity(SBC)⑤detrusor overactivity(DO) ⑥bladder sensation (BE) .

Results

Table1 Basic information of patients in 2 groups

Group	CNB	PNB	P-value
Number of cases(%)	24 (42.1)	33(57.9)	
average age (year,mean±s)	68.5±5.3	68.7±7.1	>0.05
Gender(%)			
Man	18 (75)	20 (60.6)	
Woman	6 (25)	13 (39.4)	
Average onset time(month,mean±s)	57.20±46.27	76.06±90.66	
Incidence rate of DO(%)	66.7	36.7	<0.05

Table2 Comparison of urodynamics between CNB group and PNB group

	CNB组 (n=23)	PNB组 (n=33)	t	P-value
Qmax (ml)	9.6±4.8	10.1±4.1	-2.87	0.775
maximum cystometric capacity (ml)	277.8±101.0	348.1±93.2	-2.74	0.08
post-void residual urine volume(ml)	41.5±49.3	48.2±45.7	-5.26	0.601
Voided volume (ml)	165.8±89.4	222.0±144.1	-1.69	0.097
Safe bladder capacity(ml)	283.2±28.8	348.6±34.0	-7.64	0.000

Results

Table3 Bladder safety capacity of patients with different bladder sensations in two groups(ml,mean±s)

group	Number of cases	Safe bladder volume
Bladder sensation of CNB	24	283.21±28.81
Normal	8	292.00±27.91
Disappear	4	266.00±37.48
Fade	10	280.30±27.42
sensitive	2	297.00±19.80
Bladder sensation of PNB	33	348.58±33.96
Normal	9	338.22±32.14
Disappear	8	359.88±29.42
Fade	14	346.50±34.96
sensitive	2	364.50±64.35

Table 1 show that there is a significant difference between CNB group and PNB group in detrusor activity rate ($P < 0.05$), and there is no significant difference in age, sex and onset time ($P > 0.05$).

Table2 show that there were significant differences in bladder safe capacity between the two groups ($P < 0.05$). There was no significant difference in the incidence of maximum cystometric capacity,maximum urinary flow rate,post-void residual urine volume between the two groups ($P > 0.05$)

Table 3 show In CNB group, bladder sensation was normal in 8 cases, disappeared in 4 cases, decreased in 10 cases and sensitive in 2 cases; In PNB group, bladder sensation was normal in 9 cases, disappeared in 8 cases, decreased in 14 cases and sensitive in 2 cases. There was no significant difference in the safe bladder volume between groups and within groups ($P > 0.05$).

Discussion

The results show that CNB patients are more likely to have overactive detrusor and reduced safe bladder capacity, which is consistent with the relevant literature.

On the one hand, the nerve pathway above the brain stem is damaged. Although the nerve reflex pathway of the lower urinary tract is complete and does not change the neurophysiological characteristics of detrusor contraction during micturition, the cerebral cortex cannot perceive bladder filling and cannot control micturition at will. When the detrusor contraction occurs, the myoelectric activity of the external sphincter of the urethra disappears and reflex micturition occurs in most patients.

On the other hand, the outlet of the urethra, The decline of muscle strength, abnormal muscle tension or dyskinesia of pelvic floor muscle denervation are also important factors, but there are few pelvic floor research data for such patients.

Conclusions

There are differences in urodynamic characteristics between elderly patients with central neurogenic bladder and peripheral neurogenic bladder. Patients in CNB group were more likely to have neurogenic bladder dysfunction and detrusor activity, and early treatment should be strengthened.