

WHAT KIND OF NEUROLOGICAL DISEASE DOES UROLOGIST OFTEN MEET IN ROUTINE WORK?

Hypothesis / aims of study

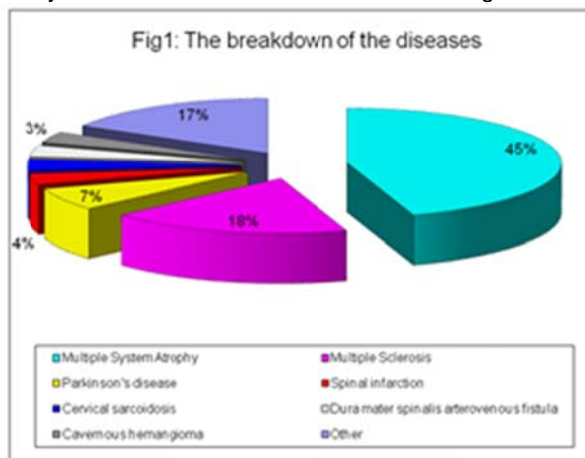
There are many types of neurological diseases. There are also many types of diseases that are complicated with LUTS but with differences in complication rates. Coming to reports related to the period when LUTS appears, in 17% of the multiple system atrophy (MSA) cases LUTS alone occurred without being accompanied by other neurological symptoms 1). Some MSA patients were diagnosed with benign prostatic hyperplasia (BPH) 2). Multiple sclerosis (MS) reports reveal that there are 2% of cases where LUTS occurs alone the first time 3). As shown in these reports, we have experienced cases where LUTS occurred arising from neurological diseases but was then overlooked at neurology, ending in inappropriate treatment. In order to reveal the neurological diseases that are likely to be overlooked during routine work, we performed examination using cases with a history of visiting urology prior to visiting neurology.

Study design, materials and methods

We performed examination retrospectively for 60 cases with histories of visiting the urological section prior to visiting neurology and being suspected of having neurological diseases. We first performed examination on the breakdown of disease, diagnosis at urology, LUTS, associated symptoms, treatment at urology, etc. Then, we performed examination by categorizing the compromised areas into central nervous system (CNS) and spinal cord regarding the evolving speed of LUTS and presence/absence of disease specificity, and calculating the period (A) from the time when LUTS appeared till the first visit to the urology, and the period (B) from the first visit at the urology till confirmation of the diagnosis at neurology. We also performed detailed examination on cases where UDS was performed prior to visiting neurology and on cases where surgery was performed.

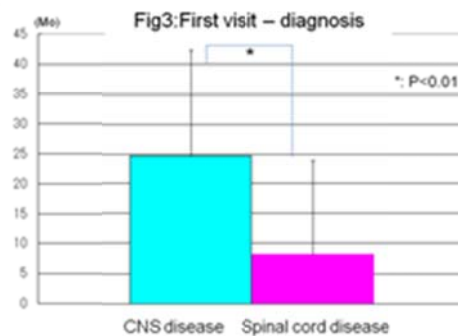
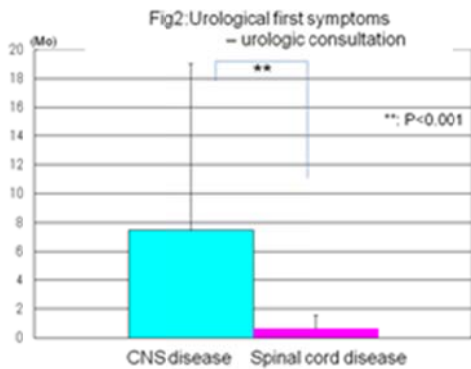
Results

The breakdown of the diseases includes 27 of MSA, 11 of MS, and four cases of Parkinson's disease (Fig1). On the first visit, LUTS had 46(77%) of dysuria (urinary retention 12), 14(23%) of incontinence, etc. The diagnosis of the urology had 26 of neurogenic bladders, 13 of BPH, nine of complications of both, and four of incontinence. Six cases were diagnosed as nothing peculiar. Associated symptoms included 33 of gait disturbances, 20 of lower limbs dysesthesia, 11 of orthostatic hypotension, and 10 of parkinsonism while associated symptoms were not observed for 10 cases(17%). Regarding treatment by the urology, many were conservative treatments while surgeries were performed for eight cases(13%).



LUTS Evolving Speed and Disease Specificity

Explicit cases where the affected regions were obvious were extracted, and comparison was made among 36 of CNS and 16 of spinal cord. Regarding (A)(Fig2), 7.5 ± 11.5 is for CNS, and 0.63 ± 0.96 months is for spinal cord ($p < 0.001$); regarding (B)(Fig3), 24.8 ± 17.6 and 8.2 ± 15.8 months ($p < 0.01$), and a significantly short period was observed with spinal cord pathologies.



Examination on Cases where UDS Was Performed Prior to Visiting Neurology

According to UDS findings, there are 10 of decrease in bladder compliance, 14 of detrusor underactivity, and three cases of detrusor overactivity; no normal cases were found. In addition, there are four cases where LUTS alone is observed during the first visit. For treatment by the urology, surgeries were performed for four cases (TUR-P for three and TVT for one case) (Table1).

Table 1 : Cases where UDS Was Performed Prior to Visiting Neurology

No.	final diagnosis	subjective symptoms	diagnosis	therapy at the first visit	UDS data					
					straps/bladder	straps/urethra	voiding/bladder	FDV	CC	PVR
1	MSA-C	SUI	SUI	TVT	low compliance	normal study	underactivity	unknown	195	225
2	MSA	dysuria(*)	BPH,NB	TUR-P	low compliance	normal study	underactivity	unknown	151	300
3	Cavernous hemangioma	dysuria(*)	NB	CIC	low compliance	normal study	underactivity		93	160 (*)
4	MSA-P	UII	overflow incontinence	urinary catheterization	low compliance	normal study	underactivity		154	270 (*)
5	MSA	dysuria	BPH	TUR-P	low compliance	normal study	underactivity		92	327 0
6	MSA	pollakisuria,dysuria	NB	other drug	normal study	normal study	underactivity		145	330 12
7	MSA	pollakisuria	BPH_prostatis	oblocker	normal study	incompetent	underactivity		171	235 171
8	MS	UII	NB	no	low compliance	normal study	underactivity		300	630 100
9	MS	dysuria(*)	NB	urinary catheterization	low compliance	normal study	underactivity		72	500 (*)
10	MS	dysuria(*)	NB	urinary catheterization	low compliance	normal study	acostruction		421	700 (*)
11	MSA-C	UII	SUI,NB	oblocker	overactivity	incompetent	underactivity		17	102 (*)
12	MSA-P	UII	BPH,NB	TUR-P	low compliance	normal study	underactivity		97	112 61
13	MSA	dysuria,UII	BPH,NB	oblocker	low compliance	normal study	underactivity		179	212 240
14	PD	pollakisuria,dysuria	BPH	oblocker	overactivity	normal study	underactivity		170	181 110
15	MSA-C	MUI	MUI	anticholinergic drug	overactivity	normal study	underactivity		89	135 70

(*) urinary retention

Examination on Cases Where Surgeries Were Performed Prior to Visiting neurology

The breakdown of the eight cases includes seven of MSA and one of HAM. During the first visit, the associated symptoms were observed at the three but not observed at the other five cases, and most of them were diagnosed as BPH. There was only one case where subjective symptoms improved. In this case, although anuria was resolved, residual urine of 100ml or more was observed, and impending incontinence occurred.

Interpretation of results

Those with fast LUTS evolvement are diseases that have transverse myelopathy as the major symptom. It was considered that if the explanations do not get across as a urological disease, unneeded surgery can be avoided by suspecting neurological diseases and by detailed examination using history taking, UDS, etc.

Concluding message

In view of early diagnosis, deeper cooperation between urologists and neurologists is required. This is being reported for the first time, with the same examination not being seen in the past.

References

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2. Sakakibara R, Uchiyama T, Yoshiyama M and Hattori T: Urinary dysfunction. Clinical Neuroscience 19: 1285-1288. 2001
3. Miller H, Simpson C.A. amd Yeates W.K.: Bladder dysfunction in mltiple sclerosis. Br. Med. J., 1: 1265- 1269, 1965.

Specify source of funding or grant	In this examination, we do not receive the subsidy at all.
Is this a clinical trial?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	No
This study did not require ethics committee approval because	This report is the examination that is retrospective, and the permission of the ethical committee does not obtain it. However, we explain contents of this examination for the case that can be followed as much as possible and oral obtain its consent. We conformed to Helsinki Declaration and we considered human rights enough and examined this time.
Was the Declaration of Helsinki followed?	Yes

Was informed consent obtained from the patients?

Yes
