

NEUROLOGIC DISEASES THAT CAUSE URINARY RETENTION IN WOMEN

Hypothesis / aims of study

The pathogenesis of female urinary retention is not well known 1). Hence, we systematically investigated the frequency of diseases that underlie female urinary retention in a urodynamic laboratory.

Study design, materials and methods

We analyzed data from 450 consecutive female patients. Data registries included the diagnosis, lower urinary tract symptom questionnaires, urodynamic study results, and neurologic exam observations. Complete urinary retention is defined as mean PVR volume > 100 ml with no voluntary void at all; whereas incomplete urinary retention is defined as mean PVR volume > 100 ml after voluntary partial void.

Results

Sixty of the 450 patients visiting our lab (13%) had urinary retention with 4 (6.7%) of these having complete retention and 36 (93.3%) having incomplete retention.

The most common underlying disease in these 60 patients was lumbar spondylosis (LS), 38.3% (with 16 patients having LS alone and 7 having LS & diabetic distal polyneuropathy [DPN]), multiple system atrophy (MSA), 18.3%, and DPN, 14.4% (with 2 patients having DPN alone and 7 having LS & DPN), followed by drug-induced retention (e.g., by antidepressants, anticholinergics), 8.3%, acute myelitis of possible demyelinating origin, 5.0%, meningitis-retention syndrome, multiple sclerosis spinal form, spinocerebellar ataxia and sacral herpes zoster, 3.3% (2 patients) each, respectively, and other etiologies, 13.3% (**Figure 1**).

A urodynamics revealed that an underactive detrusor was the major urodynamic findings in those patients (**Table 1**).

Interpretation of results

The present study revealed that, except for drug-induced cases, common etiologies for female urinary retention are neurologic. Among these, MSA is a degenerative disease characterized by glial cytoplasmic inclusions in the brain 2). Neuroimaging shows a pontine cross sign and putaminal slit sign. Clinically, MSA shows any combination of autonomic, extra-pyramidal and cerebellar symptoms. Bladder dysfunction in MSA can become a sole, initial presentation, showing a combination of detrusor overactivity during bladder filling and an underactive detrusor during voiding, with or without detrusor-sphincter dyssynergia, and common sphincter EMG abnormality.

LS is an age-related disease based on osteoporosis. Typical cases show cauda equina syndrome (preganglionic fiber neuropathy), e.g., intermittent claudication, saddle anesthesia, a low-compliance detrusor during bladder filling and an underactive detrusor, while in some cases LUTS can become a sole, initial presentation (central protrusion within the spinal canal) 3).

Type 2 diabetes is a common life-style disease, and DPN occurs in up to 50% of such patients 4). DPN is a postganglionic fiber neuropathy, showing glove and stocking type numbness and LUTS, e.g., impaired bladder sensation and an underactive detrusor. Since impaired sensation is common in DPN, LUTS often occurs insidiously.

Concluding message

The present study revealed that common etiologies for female urinary retention are neurologic, e.g., an underactive detrusor due to a neuro-degenerative disease MSA, age-related LS, and lifestyle-related DPN. Therefore, in addition to MSA, LS and DPN, both common diseases, should also become major treatment targets in order to maximize patients' quality of life.

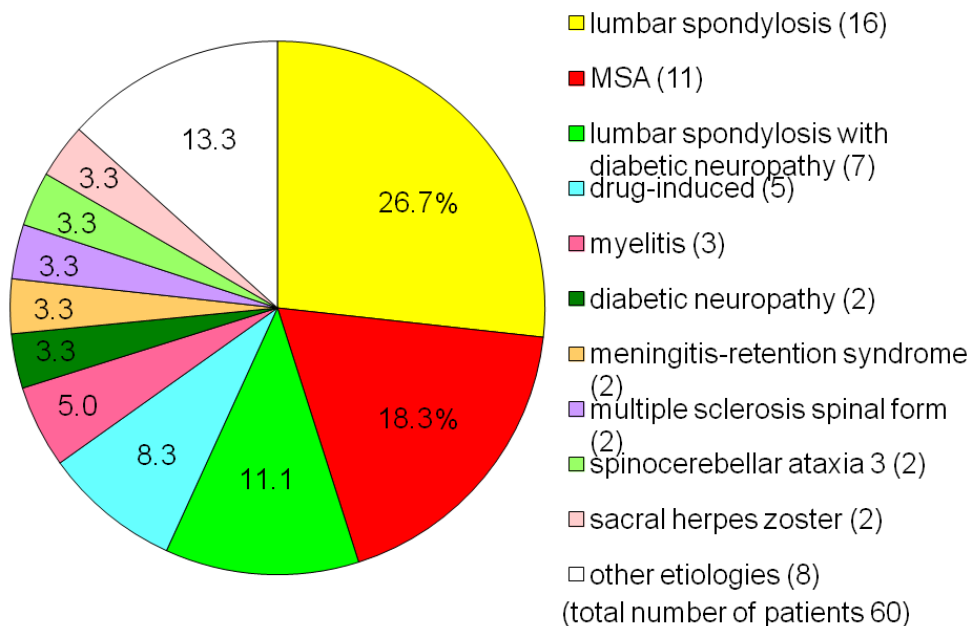


Figure 1 Etiologies of urinary retention in women.
MSA: multiple system atrophy

diseases	age (years)	retention complete	post-void residual (ml)	first sensation volume (ml)	bladder capacity volume (ml)	detrusor overactivity (%)	low compliance detrusor (%)	underactive detrusor (%)	neurogenic change in sphincter EMG (%)
multiple system atrophy N=11	67.4 (57-74)	0/11	164	134	286	63.6	9.1	72.7	75.0
lumbar spondylosis N=16	71.7 (58-82)	0/16	220	149	368	46.7	6.7	33.3	57.1
lumbar spondylosis + diabetic polyneuropathy N=7	71.1 (63-77)	0/7	222	149	361	42.9	0	57.1	75.0
diabetic polyneuropathy N=2	70.5 (64-77)	1/2	390	314	505	50	0	50.0	0

Table 1 Urodynamic findings in major neurologic diseases that cause urinary retention in women.
EMG: electromyography

References

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Disclosures

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