Bladder Dysfunction in MS

Bladder dysfunction is common and can be an upsetting symptom. It can impact energy levels by interfering with sleep patterns, and the uncertainty associated with it can interfere with social activity. Fortunately, advances in bladder management strategies are making it possible for people with MS to carry out their daily activities at home and at work with confidence – secure in the knowledge that they have their bladder function under control.

Types of bladder dysfunction in MS

MS-related lesions (areas of inflammation, demyelination, scarring and/or neuronal damage) in the brain or spinal cord can disrupt the normal bladder process by interfering with the transmission of signals between the brain and urinary system.

Storage dysfunction

Failure to store urine is caused in part by an overactive detrusor muscle that begins to contract as soon as a small amount of urine has collected in the bladder. These contractions repeatedly signal the need to void, even though the bladder has not reached normal capacity. Because of demyelination, the spinal cord is unable to forward the signals from the bladder all the way to the brain resulting in the following symptoms:

> The **detrusor muscle** is the muscular portion of the bladder that contracts to expel urine from the bladder into the urethra and out of the body.

- **Urgency** – the inability to delay urination once the urge to void has been felt
- **Frequency** – the need to urinate in spite of having voided very recently
- **Nocturia** – the need to urinate during the night
- **Incontinence** – the inability to control the time and place of urination

Emptying dysfunction

Demyelination in the area of the spinal cord that signals the voiding reflex can also result in a failure to empty the bladder. Although the bladder fills with urine, the spinal cord is unable to send the appropriate message to the brain. The eventual result is an enlarged, flaccid (overly relaxed) bladder, accompanied by the following symptoms:

- **Urgency** – the inability to delay urination once the urge to void has been felt
- **Dribbling** – uncontrolled leakage of urine
- **Hesitancy** – delay in ability to initiate urination even though the need to void is felt
- **Incontinence** – the inability to control the time and place of urination

Combined dysfunction

Failure to store in combination with failure to empty results from a lack of coordination between the muscle groups of the urinary system. Instead of working in coordination with one another, the muscles contract simultaneously, trapping the urine in the bladder and can cause:

- **Urgency, hesitancy, dribbling, incontinence and urinary tract infection.**

In addition to these common types of bladder dysfunction, people with MS are at increased risk of urinary tract infections. Although anyone can develop an infection in the urinary tract, they appear to be more common in people who are unable to fully empty their bladder. Urine that remains in the bladder over a prolonged period of time breeds excessive bacteria, eventually leading to infection. Storage of urine also allows mineral deposits to settle and form stones that promote infection and irritate bladder tissues. The symptoms of a urinary tract infection can include:

- **Urgency, frequency, burning sensation, abdominal and/or lower back pain, fever, increased spasticity and dark-coloured, foul-smelling urine.**

Diagnosis and treatment

It is very important to report any bladder changes to your doctor. Your doctor will do the necessary tests and recommend a treatment regimen that is designed to relieve the symptoms, prevent unnecessary complications, and allow you to be more comfortable and confident in your daily life. A prompt, open discussion with your doctor is the fastest, safest, and most effective way to manage urinary dysfunction.

Management of storage dysfunction

Try to drink approximately 8 glasses of fluid per day – especially water to flush wastes, bacteria, and mineral deposits from the urinary system.

Limit intake of fluids that contain caffeine or alcohol. These substances act as bladder irritants and contribute to storage dysfunction. Also **limit intake of citrus juices**. Citrus juices make urine more alkaline than acidic, which favors the growth of bacteria.

Restrict fluid intake beginning approximately two hours before starting any activity where no bathroom will be available. Do not, however, restrict fluid intake on a continuous basis, as this increases the risk of infection by interfering with the normal flushing of the bladder.

Wear an absorbent pad for extra protection. A variety of products are available for women and for men. Some men may choose to use a condom catheter (an external device that consists of a condom-like sheath that fits over the penis and is connected to a drainage bag strapped to the leg inside the trousers).

Do regular pelvic floor (Kegel) exercises to help control incontinence in women (can also be adapted for use by men). A nurse or physical therapist can assist you to learn the proper technique, which involves contracting and relaxing the muscles that support the urethra, bladder, uterus, and rectum.

Plan to urinate approximately every three hours while awake. Timed voiding can help train the bladder and reduce overfilling.

Treatment of emptying dysfunction

If your doctor determines that you are retaining more than 100ml of urine after voiding your bladder, they may recommend intermittent self-catheterization (ISC). This relatively simple technique works quickly and effectively to eliminate residual urine. Your doctor or nurse will instruct you on the proper procedure to insert and remove the catheter.

Treatment of combined dysfunction

For those who experience problems with both emptying and storage, a combination of strategies is usually recommended that includes intermittent catheterization to remove the residual urine, and an anticholinergic or antimuscarinic medication to relax the bladder's detrusor muscle.

If treatments with medications do not successfully manage your overactive bladder, your doctor may recommend onabotulinumtoxinA (BOTOX®). BOTOX is approved as treatment of urinary incontinence due to neurogenic detrusor overactivity resulting from neurogenic bladder associated with multiple sclerosis or subcervical spinal cord injury in adults who had an inadequate response to or are intolerant of anticholinergic medications.

This powerful neurotoxin temporarily relaxes the overactive bladder muscle and is delivered by injection into the bladder muscle under cystoscopy --a procedure that allows the doctor to visualize the inside of the bladder. The effects of the medication typically last about nine months, at which time the injection can be repeated. The most common side effects with BOTOX include urinary tract infection and urinary retention.

Additional diagnostic measures

Should your bladder problems persist despite standard medications and self-care techniques, you will likely be referred to an urologist (a physician who specializes in problems of the urinary tract) for further testing.

Other medical considerations

Occasionally, bladder problems in a person with MS may be related to other MS symptoms, medications that the person is taking, or to conditions other than MS. People may have difficulty with bladder management due to fatigue, constipation, cognitive problems, or other MS-related changes.

Bladder problems can also result from medical conditions unrelated to MS, such as pregnancy, diabetes, prolapsed bladder or uterus, enlarged prostate, arthritis, or the post-menopause period. These will need to be assessed and treated in order for bladder management to improve.

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