Overflow Incontinence

Overflow incontinence is a form of urinary incontinence that is characterized by an involuntary, continuous loss of small amounts of urine due to a full bladder. Symptoms include increased urinary retention, involuntary urine dribble and urinary frequency. Treatment options include medication such as bethanechol, catheterization and sacral neuromodulation.



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Symptoms

Increased Residual Urine Volume
Up-arrow Residual Urine in bladder
A symptom of overflow incontinence is increased residual urine volume, or urinary retention This is often due to an inability to contract the detrusor muscle, autonomic neuropathy, or an outlet obstruction.

Involuntary Urine Dribble
Urine Dribble
Patients may experience continuous, involuntary urine leakage, even after voiding. This is because the urine may overflow from the bladder as the bladder pressure is higher than the urethral sphincter closure pressure.

Urinary Frequency
Urine Frequency-wave
Urinating more than 8 times in 24 hours is a symptom of urge incontinence. During urination, the patient will void only a small amount, even if they feel the sensation of having a full bladder.

Pathophysiology

Nerve Lesions Cause Bladder Atony
Nerves Causing Lesions on Weak Bladder
Autonomic neuropathy may cause an underactive bladder and result in overflow incontinence. This may be caused by spinal nerve damage which can decrease neural signals from the bladder, therefore inhibiting the bladder from contracting efficiently when voiding.

Bladder Outlet Obstruction
Bladder Outlet Obstructed
Narrowing or obstruction of the bladder neck may be caused by a tumor, kidney stones, or in men, benign prostate hyperplasia. Alpha-adrenergic agonist medications may also cause overflow incontinence by contracting the bladder neck, causing urinary retention.

Weak Detrusor Muscles
Baggy D-trousers
The detrusor muscle is in the wall of the bladder that allows the bladder to store urine, in addition to contracting when voiding to release urine. In patients with overflow incontinence, the detrusor muscle activity is decreased or weak, resulting in incomplete emptying of the bladder.

Treatment

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Bethanechol

Bath-Annie

Bethanechol is a cholinergic medication that may be used to treat overflow incontinence by activating muscarinic receptors in the bladder and stimulating muscle contraction to void. Though it is not always effective, it is still commonly used.

Catheterization

Catheter-cat

Catheterization may be used as a treatment to empty the bladder when it cannot empty because of weak muscle tone or spinal cord injury. Patients may often self-catheterize themselves multiple times each day to prevent overflow incontinence.

Sacral Neuromodulation

Nerve-mode-dial stimulating Sacral-area

Sacral neuromodulation is a form of electrical stimulation therapy that controls symptoms of urinary incontinence through direct modulation of the nerve activity. In this procedure, a generator device is usually placed through the sacral foramen to stimulate the S3 sacral nerve to regulate detrusor muscle contractions.

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