Urinary incontinence

D. Hasanain Farhan
Definition

is the involuntary loss of urine that is objectively demonstrated with social and hygienic problem.
Classification

- Anatomic or genuine urinary stress incontinence
- Urge incontinence
- Neuropathic incontinence
- Congenital incontinence
- False (overflow) incontinence
- Iatrogenic incontinence
- Fistulous incontinence
Stress incontinence

- is an involuntary loss of urine that occurs during physical activity, such as coughing, sneezing, laughing, sudden changes of position or exercise.

- bet. 15-30% of women over age 65 yr have urinary incontinence & stress incontinence is the most common type

- 30% to 50% of women with stress incontinence also complain of urinary frequency, urgency, and/or urge incontinence
Types

- Classic or genuine stress incontinence is caused by pelvic prolapse, urethral hyper mobility or displacement of the urethra and bladder neck from their normal anatomic alignment (also called anatomic stress incontinence).

- Stress incontinence can also occur as a result of intrinsic sphincter deficiency, in which the sphincter is weak because of neurologic insult, previous surgery, estrogen deficiency, radiation damage or trauma.
Anatomy:

- The anatomic feature is that of hypermobility or a lowering of the position of the VU segment.
- Various relations between the urethra, bladder, and bony landmarks have been studied:
  - Posterior vesicourethral angle
  - Axis of inclination (urethral line vs. vertical plane)
  - UV junction and the SCIPP
Risk Factors

1) Gender: urinary incontinence is much more common in women than men.

2) Genetics: several studies suggested genetic predisposition for stress incontinence.

3) Race, culture, and environment—stress incontinence was reported to be more common in whites than blacks.

4) Overweight: causes more pressure on pelvic floor.
5) Pregnancy & Childbirth:

*increasing weight of baby* puts extra stress on the pelvic floor, the *hormone relaxin* softens the muscles of the pelvic floor ready for the birth. In *vaginal delivery* the nerves around pelvic floor become stretched and bruised, women who'd had a *tear or episiotomy* had a three-fold risk of developing urinary incontinence.
6) **Smoking:** a chronic cough puts pressure on the pelvic floor and makes SUI worse.

7) **Age:** stress incontinence is not a normal part of aging; physical changes associated with aging as the weakening of the muscles make elderly more susceptible to stress incontinence.

8) **Medications:** can affect the pelvic floor. Examples are alpha-blockers used to treat high blood pressure, some antidepressants and sedatives, and some muscle-relaxant drugs.
causes of transient incontinence should be ruled out

1) Drug side effects
2) Delirium or hypoxia
3) Impaired mobility
4) Urinary tract infection
5) Atrophic vaginitis
6) Psychological problems
7) Excessive fluid intake
8) Recent prostatectomy
9) Stool impaction.

EVALUATION include:

- History
- Physical examination
- Urinalysis
- Measurement of postvoid residual (PVR) urine volume
- Micturition Diary
- Pad Test
- Urodynamic Evaluation
History

- is important in assessing the characteristics and severity of incontinence as well as its impact on quality of life.
- It is also important in identifying risk factors and/or transient causes of incontinence.
- Patient history alone is not an accurate tool in the diagnosis of sphincteric incontinence and should not be used as the sole determinant of diagnosis or treatment.
Physical Examination

- Neourologic examination begins by observing the patient’s gait
  - The lumbosacral nerve roots should be assessed by checking deep tendon reflexes, lower extremity strength, sensation, anal sphincter tone & genital sensation.

- The abdomen and flanks should be examined for masses, ascites & organomegaly which can influence intra-abdominal pressure.
Rectal examination will disclose the size and consistency of the prostate & anal sphincter tone

Cough test: the bladder full in the lithotomy position, the patient is asked to cough in an attempt to reproduce the incontinence

the Q-Tip test: assess the degree of urethral hypermobility by inserting a lubricated sterile cotton-tipped applicator gently through the urethra into the bladder, the patient is then asked to strain and the degree of rotation is assessed. Hypermobility is defined as a resting or straining angle of greater than 30 degrees from the horizontal.
Vaginal examination:

- Anterior vaginal wall is examined to assess cystocele.
- Posterior vaginal wall and vault are examined for the presence of a rectocele or enterocele.
- Pelvic floor strength is assessed.
- Because the urethra and trigone are estrogen-dependent tissues. The most common signs of inadequate estrogen levels are thinning and paleness of the vaginal epithelium, loss of rugae, disappearance of the labia minora and presence of a urethral carbuncle.
Urinalysis

Urinalysis can identify acute urinary tract infection, the condition reversible with treatment.

Residual Urine Measurement

It is usually measured by catheterization or ultrasonography. A postvoid residual of less than 50 ml is considered normal (in Stress incontinence), and a postvoid residual of more than 200 ml is considered abnormal. Values between 50 and 200 ml require clinical correlation in interpreting the results.
Micturition Diary

- Micturition diaries and pad tests make it possible to document voiding patterns in the patient's own environment and during various daily activities.
- The following measurements to be included in a micturition diary: time of micturition, time and type of incontinence, and voided volume.
- 24-hour studies are adequate for the evaluation of lower urinary tract symptoms.
Pad Test

a semiobjective measurement of urine loss over a given period of time.

- A weight gain a sanitary towel of up to 8 g over a 24-hour pad test is considered normal.
Urethral Pressure Profilometry

The classical pressure changes in stress incontinence:

1) Low urethral closure pressure.
2) Short urethral functional length
3) Weak response to stress.

Cystometry

leak with cough

Flowmetry
TREATMENT

Nonsurgical Treatment

1) Behavior Modification
2) Pelvic Floor Exercises
3) Biofeedback
4) Electrical Stimulation
   have all been reported to cause improvement in 30% to 75% of patients.
5) $\alpha$-adrenergic agonists, SRI
6) Estrogens
Surgical Treatment

- If hypermobility, treatment is:
  - Suspension of the bladder neck & proximal urethra which is either
    1) Retropubic Suspensions Marshall-Marchetti-Krantz (MMK) and Burch colposuspension or
    2) Transvaginal suspensions
if (ISD) exists

suspension alone is not adequate & treatment is:

1) Pubovaginal sling (Autologous Tissues as Rectus Fascia or Nonautologous Tissues as pericardium or Synthetic Materials as Monofilament Polypropylene Tape the tension-free vaginal tape (TVT) procedure or TOT

2) Periurethral injections

3) Sphincter prostheses
Urge Incontinence

- The basic feature is detrusor instability and loss of urine while attempting to inhibit micturition.
- The bladder is described to be overactive with clinical symptoms of urgency, frequency, and nocturia.
- The bladder overactivity can be idiopathic or result from bladder inflammation, tumour, obstruction, neurological and trauma.
Urodynamic Features

- **Flowmetry** High flow rate
- **Cystometry** Detrusor hyperirritability with increase intravesical pressure, decrease capacity and uninhibited contraction
- **Urethral closure pressure** Normal or high, normal response to stress and normal urethral functional length
Treatment

- Behavior Modification.
- Anticholenergic drugs.
- Intravesical botulinum toxin injection.
- Surgery
  SNS, augmentation cystoplasty, and diversion.
THE END
THANK YOU