

Urinary incontinence

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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

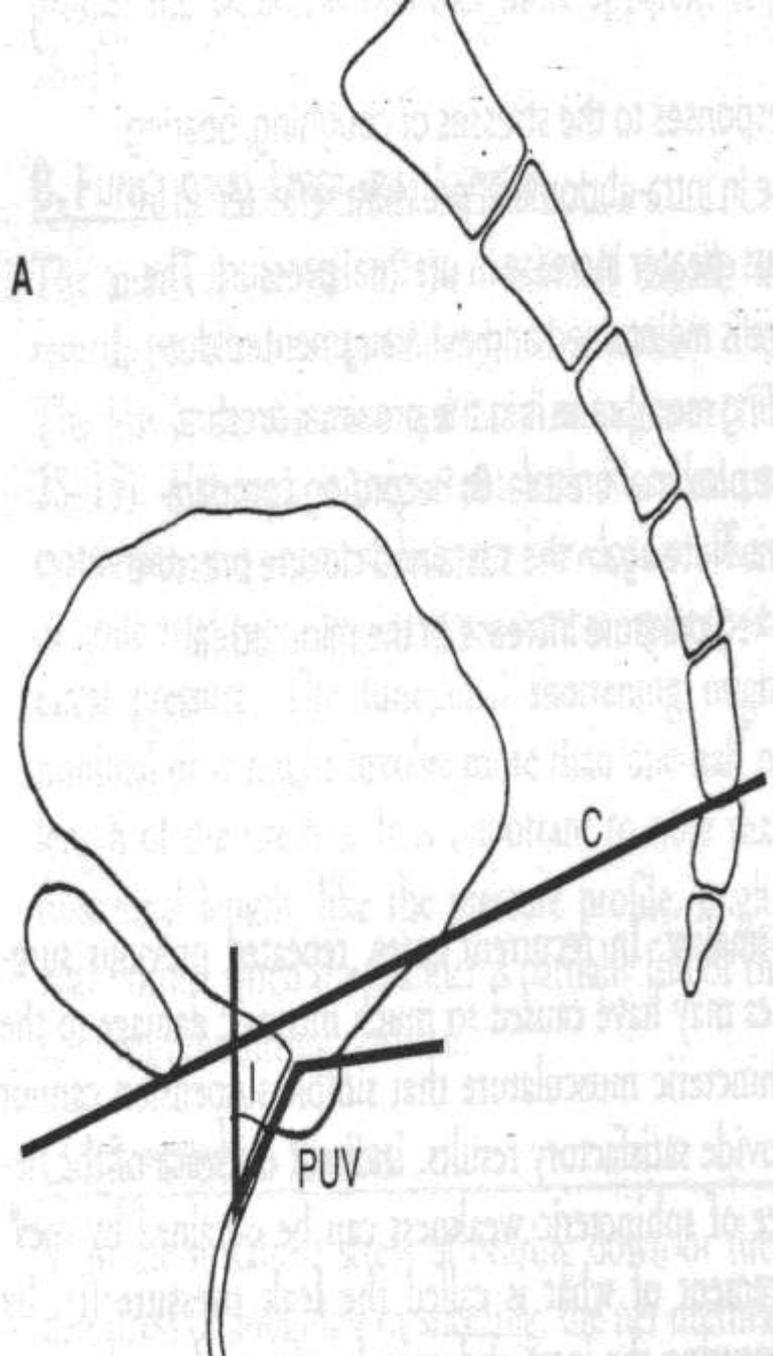
Types

- **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.**

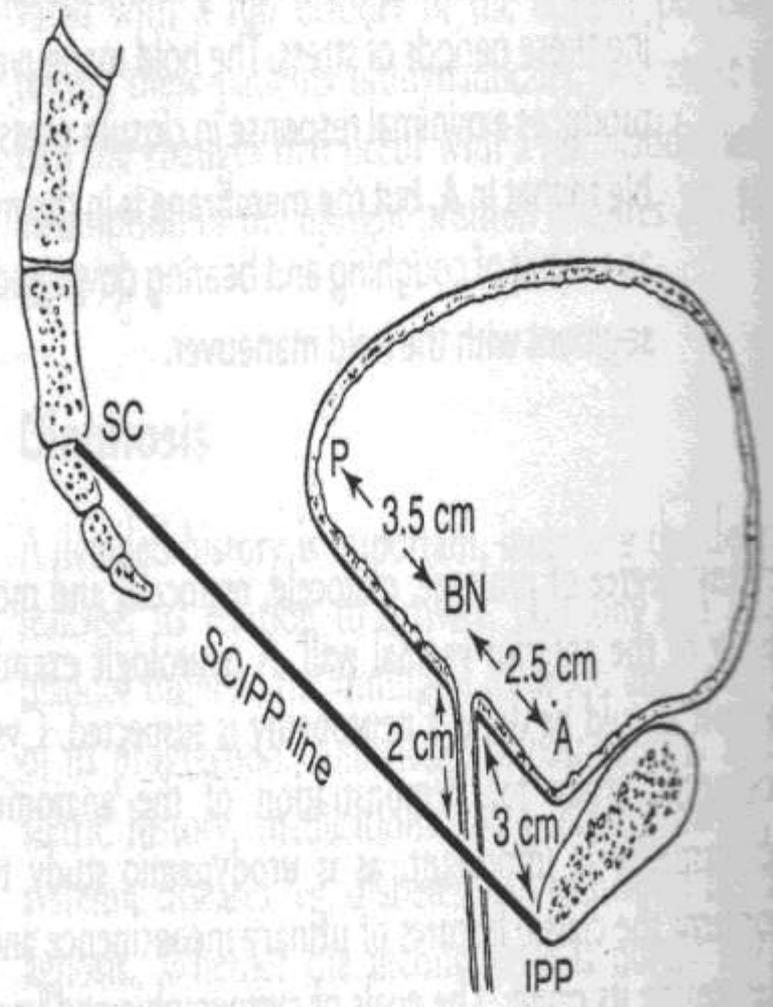
Anatomy:

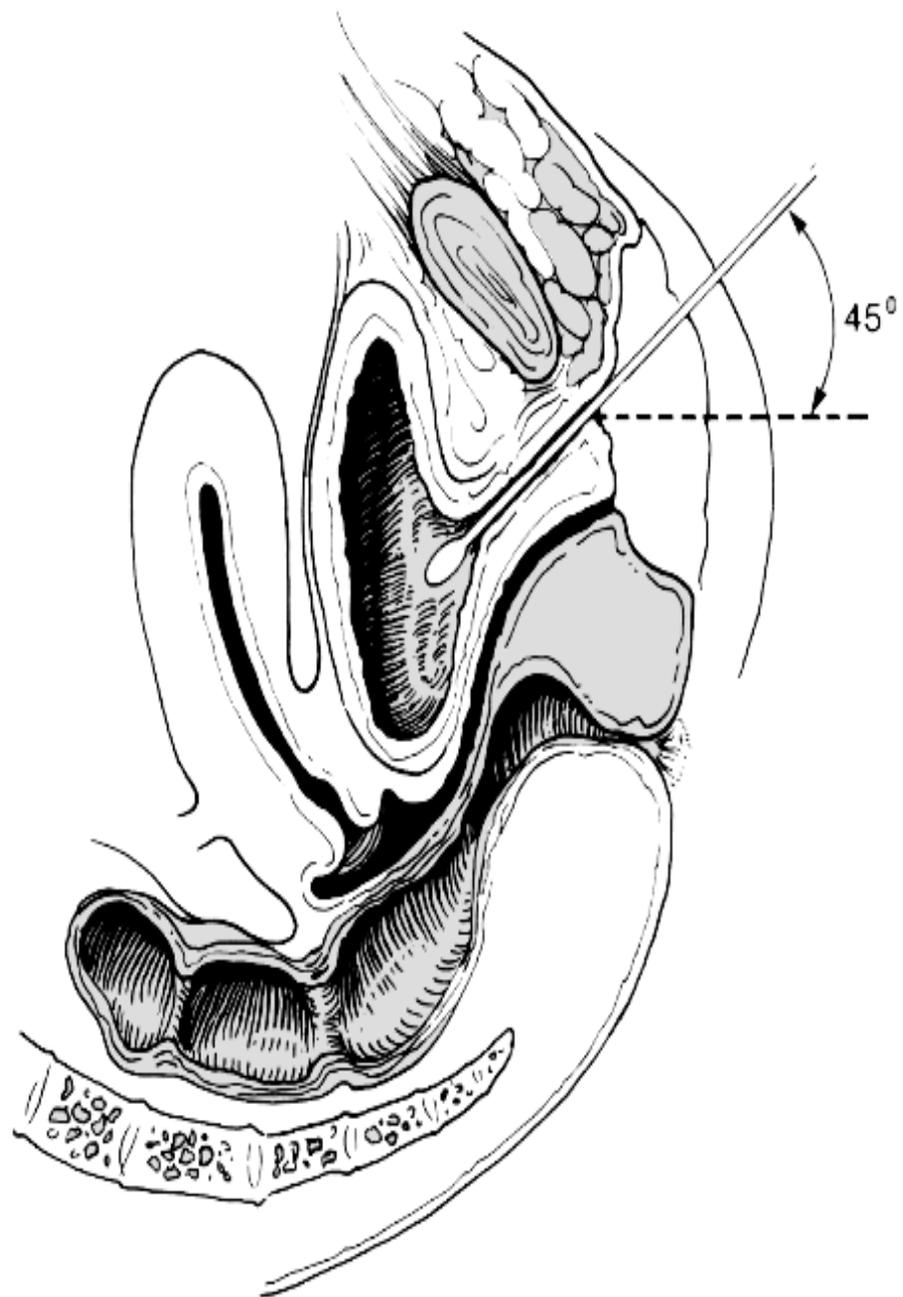
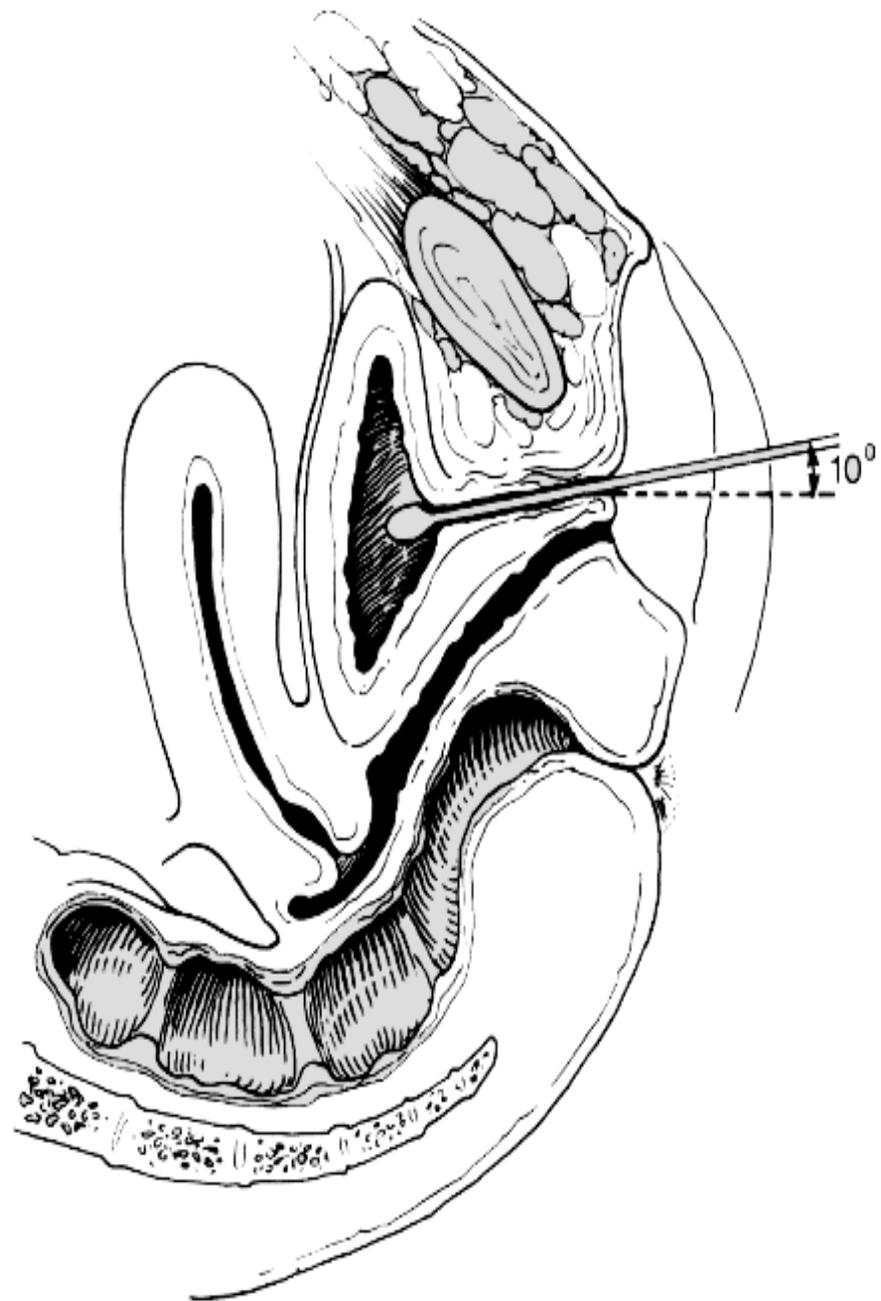
- ✓ **The anatomic feature is that of hypermobility or a lowering of the position of the VU segment**
- ✓ **Various relations between the urethra, bladder, and bony landmarks have been studied**
 - **Posterior vesicourethral angle**
 - **Axis of inclination (urethral line vs. vertical plane)**
 - **UV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

A



B



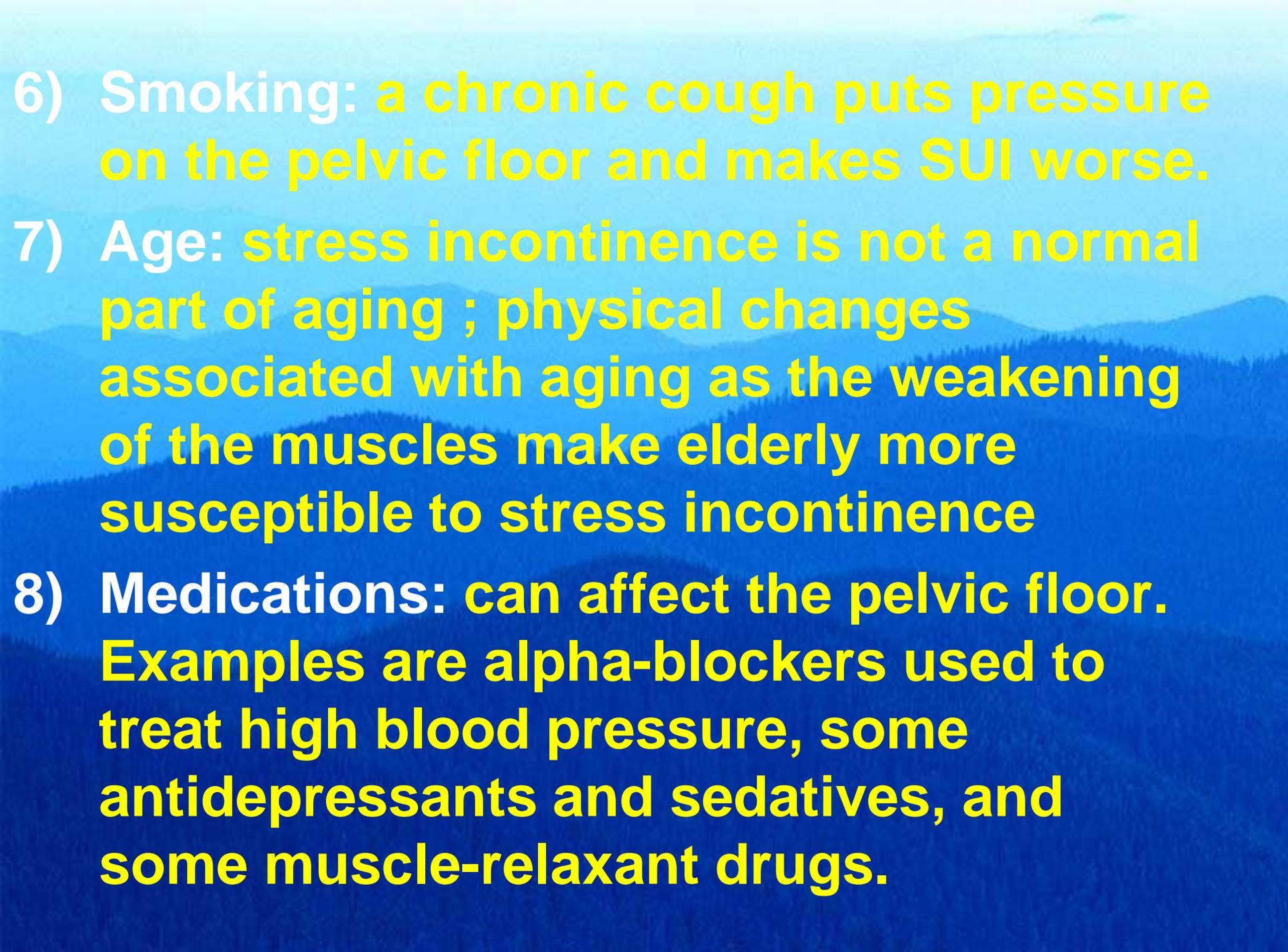


Risk Factors

- 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 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.

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- 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.

DIAGNOSTIC EVALUATION

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

- Neurourologic 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) α -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.
- Anticholinergic drugs.
- Intravesical botulinum toxin injection.
- Surgery
 - SNS, augmentation cystoplasty, and diversion.



THE END
THANK YOU