

Approach to a woman with urinary incontinence

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Abstract

Urinary incontinence is a bothersome situation to the ailing woman. Many times, the woman does not come to medicos due to shyness, and if she comes also she does not reveal all the information. Hence, a sympathetic and structured approach will help to provide judicious management to these women. When a woman with the complaint of urinary incontinence approaches us, we should collect maximum information with the help of structured questionnaire and protocol. Structured questionnaire provides most of the information pertinent to the urinary incontinence. Associated medical disorders are also looked for. Past obstetrical performance can have implication on this ailment. Pelvic organ prolapse, mass lower abdominal, etc., also can lead to urinary incontinence. Adverse effect of some medicines causes urinary incontinence. During general physical examination, attention has to be paid toward body mass index, joint hypermobility, spine, etc. During local examination, stress test, Bonney test, Q-tip test, etc., may help to some extent. The levator ani muscle is assessed of its strength. Neurological evaluation is to be done for all the patients with urinary incontinence. Urinary culture and sensitivity are routinely done. Once urinary infection is ruled out, then the woman is subjected to frequency/volume diary, ultrasonography, urodynamic study, cystoscopy, etc., depending on the necessity. A systematic approach to urinary incontinence will provide the best comfort to these ailing women.

Keywords: Examination, levator ani, neurological, pelvic organ prolapse, questionnaire

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INTRODUCTION

Urinary incontinence is a troublesome condition for a woman, though many times they do not seek medical assistance out of shyness. More than 50% of women suffering from urinary incontinence never seek medical treatment.^[1] Hence, while taking a history, often, it becomes necessary to put leading questions to these women to extract the information. A thorough history-taking help us to reach the 50% of the diagnosis, next 25% reaches by physical examination, and the rest 25% comes from the investigation – thus 100% of final diagnosis reached.

HISTORY

Type of incontinence is often diagnosed by history, with confirmation by office evaluation or urodynamic testing.^[2] To take proper urinary incontinence history, many questionnaires are available. It is desirable that whichever questionnaire has been used, it should be translated to the local language and get validated before using. One validated questionnaire is described here.

The Questionnaire for female Urinary Incontinence Diagnosis^[3] [Table 1] Scoring: each item scores 0 (none

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of the time), 1 (rarely), 2 (once in a while), 3 (often), 4 (most of the time), or 5 (all of the time). Responses to items 1, 2, and 3 are summed for the stress score, and responses to items 4, 5, and 6 are summed for the urge score. Score range: stress – (0–15) and urge – (0–15). Larger values indicate worse urinary incontinence.

Associated medical disorders that may contribute to cause urinary incontinence are to be found out, for example, diabetes, stroke, chronic pulmonary disease, lumbar disc disease, fecal impaction, cognitive impairment, etc. Patient with multiple sclerosis, a central nervous system disorder, suffers from overactive bladder. Mental agony/trauma due to sudden death of husband, relative, any other near and dear one; problem in family life; and job area can cause an increase in urinary frequency and urgency.

Obstetrical and gynecological history has paramount importance. Multigravida, less interval in between deliveries, difficult vaginal delivery, forceps delivery, prolonged labor, etc., – all these may cause weakening of the bladder neck and urethral support which may result in stress urinary incontinence (SUI). Obstructed labor can cause fistula (true urinary incontinence). Increased

frequency of micturition may be observed in cystocele due to stimulation of stretch receptors. Space-occupying lesion and adhesions in the lower abdominal and pelvis can increase the frequency by mechanical compression on the bladder preventing its enlargement. Endometriosis of bladder, anterior vaginal wall, anterior cervix, etc., can irritate the bladder (especially trigone) and cause urinary frequency.

Past surgical history

Radical hysterectomy and other pelvic operations may cause detrusor dysfunction due to disturbance of the nerve supply of the bladder.

Medications

Urinary incontinence may be due to the adverse effects of certain drugs [Table 2].

EXAMINATION

A thorough general physical examination and systemic examination have to be done like any other illness with special focus on the following:

- a. Body mass index – Obesity can lead to incontinence mainly SUI

Table 1: Questionnaire for female urinary incontinence diagnosis

| | None of the time | Rarely | Once in a while | Often | Most of the time | All of the time |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Do you leak urine (even small drops), wet yourself or wet your pads or undergarments | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1. When you cough or sneeze? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. When you bend down or lift something up? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. When you walk quickly, jog, or exercise? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. While you are undressing to use the toilet? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Do you get such a strong and uncomfortable need to urinate that you leak urine (even small drops) or wet yourself before reaching the toilet? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Do you have to rush to the bathroom because you get a sudden, strong need to urinate? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Scoring: Each item scores 0 (none of the time), 1 (rarely), 2 (once in a while), 3 (often), 4 (most of the time), or 5 (all of the time). Responses to items 1, 2, and 3 are summed for the stress score, and responses to items 4, 5, and 6 are summed for the urge score. Score range: Stress - (0-15), urge - (0-15). Larger values indicate worse urinary incontinence. Bradley *et al.*^[3]

Table 2: Adverse effect of medications causing urinary incontinence

| Drugs | Mechanism causing urinary incontinence |
|--|--|
| Antihypertensives | |
| α-blockers | Decreases urethral closure pressure and cause SUI |
| ACE inhibitors | Results in chronic cough and SUI |
| Diuretics | Increases urinary frequency |
| Antidepressant - amitriptyline, desipramine, haloperidol, etc. | Affects the elasticity of the bladder and prevent it from contracting, ultimately resulting in chronic retention of urine |
| Opioid painkillers, for example, morphine, meperidine, codeine, oxycodone, etc. | Relaxes the bladder leading to chronic retention of urine; difficulty in starting, straining during voiding, and poor stream urination; constipation (side effect of the drug) |
| Sedatives and muscle relaxants, for example, chlordiazepoxide, diazepam, lorazepam, etc. | desensitizes bladder and worsens urgency incontinence Causes relaxation of the urethra resulting in urinary frequency, SUI |
| HRT - oral | Triggers and worsens SUI as well as urgency incontinence, but topical use is beneficial |
| Antihistaminics, for example, chlorpheniramine, diphenhydramine, etc. | Causes relaxation of the bladder and chronic retention of urine |

SUI: Stress urinary incontinence, HRT: Hormone-replacement therapy, ACE: Angiotensin converting enzyme

- b. Per abdominal examination: the presence of striae may be an indication of collagen disorder. Weak collagen may reduce the strength of urethral support, thus causing stress incontinence
- c. Examination of the spine – Palpate the vertebra from top to bottom, i.e., from the neck to coccyx and look for any swelling, gap, tenderness, etc. Any doubtful finding requires further evaluation by imaging studies. Spinal cord lesion may be reflected as urinary incontinence
- d. Hypermobility of the joints: it may cause urinary incontinence. Suspicion of this problem is more in case of nulliparous unexplained SUI. Hypermobility is caused by collagen disorder. The Brighton criteria diagnose hypermobility syndrome. Disorders that may present as hypermobility syndrome are benign joint hypermobility syndrome (BJHS), Marfan's syndrome, Ehlers–Danlos syndrome, and osteogenesis imperfecta. In BJHS, many joints get involved with chronic pain. In addition to generalized joint hypermobility, Marfan's syndrome patient has other marfanoid features (tall, thin body, arachnodactyly, myopia, and dislocation of lens) also. There is an increase degree of wrist dorsiflexion and palmar flexion in Ehlers–Danlos syndrome.¹⁴ Woman with osteogenesis imperfecta has thin blue sclera and fragile bone, leading to multiple fracture and deformity, along with joint hypermobility.

Stress test

Observation of loss of urine with cough or Valsalva maneuver interprets the test as positive. Usually, the test is done in a dorsal position. If not demonstrable on dorsal position, then the test can be repeated in squatting position. If still not demonstrable, then in standing position asking her to keep her feet on the ground at shoulder distance, lift the saree/gown and looking for urine loss on the floor in between her feet or trickling down of urine through the thighs.

Bonney's test

Positive stress test patient undergoes this test. The patient lies in the dorsal position. Middle and index fingers are placed in the anterior vaginal wall on either sides of the urethra and push upward and backward to restore the posterior urethra-vesical angle and stabilizing the urethra. Next, the patient is asked to cough and observed for loss of urine. If there is no urine loss, then the test is positive (that means distortion of posterior urethra-vesical angle is responsible for SUI). However, this test has limited value in stress incontinence evaluation.

Urethral hypermobility test

1. Inspection – The patient is observed while coughing or doing Valsalva maneuver. If there is urethral hypermobility, then the anterior vaginal wall will rotate outward, and external urethral meatus will rotate upward toward the ceiling
2. Q-tip test/cotton swab test – This test is done in dorsal/dorsal lithotomy position. Sterile lubricated cotton-tipped swab is introduced per urethra to the bladder and withdrawn up to the level of urethrovesical junction. Position of the cotton swab in relation to the horizontal is seen – usually resting angle is 0° or nearer to 0°. Next, the patient is asked to cough or do Valsalva and movement of the swab stick is observed. If the straining makes an angle of 30° or more, i.e., moving away from the horizontal, it is diagnosed with hypermobile urethra. The mere presence of hypermobile urethra does not clinch the diagnosis of SUI, but this test has prognostic value if the operation is contemplated.

Vaginal discharge

Sometimes, mucoid vaginal discharge may be confused with urine and the patient complained of urinary incontinence. Inspection of the vagina with speculum will rule out such possibility.

Pelvic organ prolapse

Associated prolapse is assessed by the Pelvic Organ Prolapse Quantifications staging. The presence of occult SUI (SUI normally absent, but demonstrable once the prolapse is reduced) has to be ruled out.

Pelvic mass

Per abdominal and per vaginal examination can find out any mass in the lower abdomen or pelvis which may be responsible for urinary incontinence.

Senility

Vaginal rugosity may be absent in postmenopausal woman; even vagina may be tender during digital examination. This is due to deficiency of estrogen and may be the cause of urinary incontinence.

Levator ani muscle strength assessment (digital palpation)

In dorsal position, P/V examination fingers are placed on the posterior vagina at least 2–4 cm above the hymenal ring. Both sides of levator ani muscles are palpated to know its bulk, resting tone, and spasticity, if any. Then, the patient is asked to contract the pelvic floor muscles maximally as long as possible. Rectus abdominis, adductors

of the thigh, and gluteus muscles are not supposed to be contracted. Now, levator ani is evaluated regarding muscle contraction (present/absent), strength and duration of contraction, and the ability to elevate the P/V fingers. Grading is done according to the modified Oxford Scale [Table 3].^[5]

Neurological evaluation^[6]

Sacral reflex – for the assessment of pudendal nerve integrity. Two reflexes are tested:

1. Anal reflex – Elicited by stroking the perianal skin lightly and looking for anal sphincter contraction. If the contraction is not seen, then feel it by palpation of the sphincter
2. Bulbocavernosus reflex – Elicited by tapping or squeezing the clitoris lightly and looking for contraction of the bulbocavernosus muscle and/or external anal sphincter.

The absence of one or both sacral reflexes signifies lower motor neuron lesion, usually resulting from trauma during delivery.

Perineal sensation

Evaluation of sensory function is done by assessing the discrimination capability between light touch, pinprick, and cold sensation. A cotton swab stick is broken into the middle. By the soft end, light touch sensation is tested, and by the sharp end, prick sensation is tested. Alcohol-soaked swab assesses the cold sensation.

Sensory dermatomes tested are as follows:

- Mons pubis and upper labia majora (L1-2)
- Perineal and perianal skin (S2-4)
- Front of the knees (L3-4) and
- Lateral part of the feet (S1).

Motor function of lower extremities

Hip, knee, and ankle joints are evaluated regarding their muscle strength according to the Oxford scale [Table 4].^[7]

The patient is asked to perform:

- Hip flexion (L2-3) and extension (L5-S1)
- Knee flexion (L5-S1) and extension (L3-4)
- Ankle dorsiflexion (L4-5) and plantar flexion (S1-2).

INVESTIGATION

After the completion of physical examination, different investigations are advised. First and foremost are the urine routine examination and culture and sensitivity. Pending the report, a course of antibiotic (may be norfloxacin/nitrofurantoin) can be prescribed. Once the report is available, appropriate antibiotic may be prescribed, if

Table 3: Levator ani muscle strength assessment (Modified Oxford Scale)

| Score | Levator ani strength |
|-------|--|
| 0/5 | No contraction |
| 1/5 | Flicker, barely perceptible |
| 2/5 | Loose hold, 1-2 s |
| 3/5 | Firmer hold, 1-2 s |
| 4/5 | Good squeeze, 3-4 s, pulls fingers in and up loosely |
| 5/5 | Stronger squeeze, 3-4 s, pulls finger in and up snugly |

Laycock et al.^[5]

Table 4: Grading of muscle strength (Oxford Scale)

| Grade | Description |
|-------|---|
| 0/5 | No muscle movement |
| 1/5 | Muscle movement without joint motion |
| 2/5 | Movement with gravity eliminated |
| 3/5 | Movement against gravity but not against resistance |
| 4/5 | Movement against gravity and light resistance |
| 5/5 | Normal strength |

Le Blond et al.^[7]

needed. After the infection is controlled, if the patient still complained of urinary incontinence, then only different specific investigations may be required, for example, frequency/volume diary, pad test, ultrasonography kidney, ureter, and bladder and pelvis, urodynamic study, cystourethroscopy, etc. Following this protocol will help to assess these patients easily and quickly.

CONCLUSION

A structured approach to a woman with urinary incontinence helps us to reach a proper diagnosis easily.

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Conflicts of interest

There are no conflicts of interest.

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