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EVALUATION OF LOWER URINARY TRACT SYMPTOMS
International Continence Society Classification

• Lower urinary tract:
  – Bladder and urethra

• Function: storage and emptying of urine
  – Filling/storage phase
  – Voiding phase
Lower Urinary Tract Symptoms (LUTS)

- Storage symptoms
- Voiding symptoms
- Post micturition symptoms

Bladder storage symptoms

- **Increased daytime urinary frequency:**
  - voids too often

- **Nocturia:**
  - complaint wake at night one or more time to void

- **Urgency:**
  - Complaint of a sudden, compelling desire to pass urine which is difficult to defer

- **Overactive bladder (OAB, Urgency) syndrome:**
  - Urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of UTI or other obvious pathology.
Urinary Incontinence Symptoms

- **Stress (urinary) incontinence:**
  - Involuntary loss of urine on effort or physical exertion (e.g., sporting activities), or on sneezing or coughing.

- **Urgency (urinary) incontinence:**
  - Involuntary loss of urine associated with urgency.

- **Mixed (urinary) incontinence:**
  - Involuntary loss of urine associated with urgency and also with effort or physical exertion or on sneezing or coughing.
Sensory symptoms

• **Increased bladder sensation:**
  – The desire to void during bladder filling occurs earlier or is more persistent to that previous experienced.

• **Reduced bladder sensation:**
  – The definite desire to void occurs later to that previously experienced despite an awareness that the bladder is filling.

• **Absent bladder sensation:**
  – Both the absence of the sensation of bladder filling and a definite desire to void.
Voiding symptoms

- **Hesitancy**: a delay in initiating micturition.

- **Slow stream**: urinary stream perceived as slower compared to previous performance or in comparison with others.

- **Intermittency**: urine flow that stops and starts on one or more occasions during voiding.

- **Straining to void**: need to make an intensive effort (by abdominal straining, Valsalva or suprapubic pressure) to either initiate, maintain, or improve the urinary stream.

- **Spraying (splitting) of urinary stream**: urine passage is a spray or split rather than a single discrete stream.
Voiding symptoms

• **Position-dependent micturition:**
  – having to take specific positions to be able to micturate spontaneously or to improve bladder emptying.

• **Dysuria:**
  – burning or other discomfort during micturition.

• **Urinary retention:**
  – inability to pass urine despite persistent effort.
Post micturition symptoms

• Feeling of incomplete (bladder) emptying:
  – Complaint that the bladder does not feel empty after micturition.

• Postmicturition leakage:
  – Complaint of a further involuntary passage of urine following the completion of micturition.
Investigations of lower urinary tract symptoms

- Detailed history
- Physical examination
- Urinalysis
- Bladder diary
- Pad test
- Urodynamic study
- Questionnaires
- Ultrasound
History

- Focus on medical, surgical, Gyn/obs, neurologic, and urological history

- Voiding patterns and symptoms
  - bladder diary

- Review medications

- Evaluate functional and mental status
Bladder diary

- Frequency, severity of symptom

- Volume and frequency of fluid intake and voiding

- 1- to 7-day or 3 day

- Episodes of urinary incontinence, associated symptoms, bed wetting etc.
Physical examination

- Anatomical and neurological abnormality.
- General, abdominal and neurologic exams
- Pelvic and rectal exams
- Observe for urine loss with stress (ex. cough, Valsalva)
- Pelvic organ prolapse
Laboratory tests

• Urinalysis
  – To rule out hematuria, pyuria, bacteriuria, glucosuria, proteinuria

• Blood work as appropriate
  – Glucose
  – Others
Pad test

- One hour pad test / modified 20-minute pad test

- Quantification of urinary leakage

- Useful for monitoring a therapeutic effect during a clinical trial
Urodynamic study

• It is appropriate to treat lower urinary tract symptoms based upon history and physical exam

• Reserve urodynamics for
  – Persistence despite appropriate therapy
  – Potential hazards of therapy
  – Incontinence
  – Outflow obstruction
  – neurogenic bladder
Why urodynamics

• To copy the function of lower urinary tract, storage and expulsion.
• An extension of history and PE.
• To obtain information of lower urinary tract function and dysfunction.
• To define the underlying pathophysiology.
• To confirm clinical diagnosis.
Uroflowmetry (UFM)

- Simplest
- Non-invasive
- Inexpensive
- Screening test for voiding difficulty
Urodynamic Study

- Uroflowmetry of spontaneous voiding
- Cystometry — filling & voiding phases
- Pressure flow study
- Urethral pressure profile
- EMG
Videourodynamics

• First described in late 1960s

• Combination of pressure-flow study and fluoroscopy

• Simultaneous evaluation of structure and function

• Providing information about lower urinary tract anatomy and function
Ultrasound in urogynecology

• Modalities in current routine clinical use:
  – Perineal
  – Introital
  – Transvaginal
  – Transabdominal
## Validated Questionnaires

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Symptoms evaluated</th>
<th>Goal of Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDI (Urogenital Distress Inventory)</td>
<td>Urinary incontinence</td>
<td>Symptom distress</td>
</tr>
<tr>
<td>IIQ (Incontinence Impact Questionnaire)</td>
<td>Urinary incontinence</td>
<td>Life impact</td>
</tr>
<tr>
<td>PFDI (Pelvic Floor Distress Inventory)</td>
<td>UI, POP, colorectal dysfunction</td>
<td>Symptom distress</td>
</tr>
<tr>
<td>PFIQ (Pelvic Floor Impact Questionnaire)</td>
<td>UI, POP, colorectal dysfunction</td>
<td>Life impact</td>
</tr>
<tr>
<td>PISQ (Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire)</td>
<td>Urinary incontinence, pelvic organ prolapse</td>
<td>Sexual function</td>
</tr>
<tr>
<td>OABSS</td>
<td>Overactive bladder</td>
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References
