Urinary Incontinence

By Magnus Murphy, MD [2]

Compounding Problems: • Embarrassment leads to silence • Time constraints lead to inadequate attention • Knowledge limits lead to patients accepting • Technology limits lead to inadequate investigation • Resource limits lead to inadequate access
Urogenital Damage/dysfunction:

- Vaginal delivery
- Aging
- Estrogen deficiency
- Neurological disease
- Psychological disease
Compounding Problems:

- Embarrassment leads to silence
- Time constraints lead to inadequate attention
- Knowledge limits lead to patients accepting
- Technology limits lead to inadequate investigation
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Myths: Urinary incontinence/prolapse is a natural part of aging
• Nothing can be done about it
• Surgery is the only solution
Urogenital Aging:

- Urogenital aging is a symptom complex with associated physical findings
- Involves the lower urinary and genital tracts and the pelvic floor
Symptoms:
- Frequency
- Nocturia
- Dysuria
- Incomplete emptying
- Incontinence
- Urgency
- Recurrent infections
- Dyspareunia
- Prolapse
### Prevalence of Urinary Incontinence

<table>
<thead>
<tr>
<th>Age (yr.)</th>
<th>Female*</th>
<th>Male*</th>
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</thead>
<tbody>
<tr>
<td>&lt;30</td>
<td>16-52%</td>
<td>6-10%</td>
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<tr>
<td>30-60</td>
<td>17-39%</td>
<td>2-12%</td>
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<tr>
<td>&gt;60</td>
<td>4.5-44%</td>
<td>4.6-24%</td>
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<tr>
<td>Institutionalized/ Impaired</td>
<td>22-90%</td>
<td>22-33%</td>
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</tbody>
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*broad prevalence ranges due to variability of UI definition

- Estimated at 10-35% of adults
- ≥50% of institutionalized patients

Statistics:
• 10-60% of women report urinary incontinence
• 50% of women that have had children develop prolapse
• Only 10-20% seek medical care
• Billions of dollars spent annually on incontinence products (in North America)
Statistics:

- 10-25% of women age 15-64 report urinary incontinence
- 15-40% of women over age 60 in the community report incontinence
- More than 50% of women in nursing homes are incontinent
- W.H.O. recognizes incontinence as an international health concern
Cost of Urinary Incontinence
1994 - Direct Costs
- $11.2 billion/year in the community
- $5.2 billion/year in nursing homes
• 60% greater than the 1990 estimate
• Does not count urgency/frequency along
1995 - Total Societal Costs
- individuals +65 - $26.3 billion/year
- per person cost - $3,565/year
(↑ 174% from 1884)
Quality of Life Impact:

- Impact on lifestyle and avoidance of activities
- Fear of losing bladder control
- Embarrassment
- Impact of relationships
- Increased dependence on caregivers
- Discomfort and skin irritation
Urinary Incontinence:

Dr. M. Murphy
Types of Urinary Incontinence:
• Genuine stress incontinence
• Urge incontinence
• Mixed
• Chronic urinary retention and overflow incontinence
• Functional incontinence
• Miscellaneous (UTI, dementia)
Genuine Stress Incontinence:

- Loss of urine with increases in abdominal pressure
- Caused by pelvic floor damage/weakness or weak sphincter(s)
- Symptoms include loss of urine with cough, laugh, sneeze, running, lifting, walking
Urinary Incontinence:

- Loss of urine due to involuntary bladder spasm (contraction)
- Complaints of urgency, frequency, inability to reach the toilet in time, up a lot at night to use the toilet
- Multiple triggers
Mixed Incontinence:
- Combination of stress and urge incontinence
- Common presentation of mixed symptoms
- Urodynamics necessary to confirm
Chronic Urinary Retention

- Outlet obstruction or bladder underactivity
- May be related to previous surgery, aging, development of bad bladder habits, or neurologic disorders
- Medication, such as antidepressants
- May present with symptoms of stress or urge incontinence, continuous leakage, or urinary tract infection
Functional and Transient Incontinence:

- Mostly in the elderly
- Urinary tract infection
- Restricted mobility
- Severe constipation
- Medication - diuretics, antipsychotics
- Psychological/cognitive deficiency
Unusual Causes of Urinary Incontinence:

- Urethral diverticulum
- Genitourinary fistula
- Congenital abnormalities (bladder extrophy, ectopic ureter)
- Detrusor hyperreflexia with impaired contractility
Urological Damage/dysfunction:

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Causes of Incontinence:
Inherited or genetic factors
- Race
- Anatomic differences
- Connective tissue
- Neurologic abnormalities
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Causes of Incontinence:
External factors
- Pregnancy and childbirth
- Aging
- Hormone effects
- Nonobstetric pelvic trauma and radical surgery
- Increase intra-abdominal pressure
- Drug effects
Pregnancy and Childbirth:
- Hormonal effects in pregnancy
- Pressure of the uterus and contents
- Denervation (stretch or crush injury to pudendal nerve)
- Connective tissue changes or injury (fascia)
- Mechanical disruption of muscles and sphincters
Urogenital Damage/dysfunction:

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Aging:
- Gravity
- Neurologic changes with aging
- Loss of estrogen
- Changes in connective tissue crosslinking and reduced elasticity
Hormone Effects:
- Common embryonic origin of bladder urethra and vagina from urogenital sinus
- High concentration of estrogen receptors in tissues of pelvic support
- General collagen deficiency state in postmenopausal women due to the lack of estrogen (Falconer et al., 1994)
- Urethral coaptation affected by loss of estrogen
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Increased Intra-abdominal Pressure:
- Pulmonary disease
- Constipation/straining
- Lifting
- Exercise
- Ascities/hepatomegaly
- Obesity
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Drug Effects:
Alpha-blocking agents
- Terazosin
- Prazosin
- Phenoxybenzamine
- Phenothiazines
- Metyldopa
- Benzodiazepines
Fecal Incontinence:

- Approximately 10% of women with urinary incontinence have incontinence of flatus or stool
Patient Evaluation:
• History
• Physical examination
• Urinalysis
• PVR - if indicated
• Symptoms of incomplete emptying
• Longstanding diabetes mellitus
• History of urinary retention
• Failure of pharmacologic therapy
• Pelvic floor prolapse
• Previous incontinence surgery

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Patient History:
- Focus on medical, neurologic, genitourinary history
- Review voiding patterns/fluid intake
- Voiding diary
- Review medications (rx and non-rx)
- Explore symptoms (duration, most bothersome, frequency, precipitants)
- Assess mental status and mobility
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Physical Examination:
- General examination
- Edema, neurologic abnormalities, mobility, cognition, dexterity
- Abdominal examination
- Pelvic and rectal exam - women
- Examination of back and lower limbs
- Observe urine loss with cough
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Urinalysis:
- Conditions associated with overactive bladder
- Hematuria
- Pyuria
- Bacteriuria
- Glucosuria
- Proteinuria
- Urine culture
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Postvoid Residual Volume (PVR):

- If clinically indicated accurate PVR can be done by
- Catheterization
- Ultrasound
- PVR of < 50 ml is considered adequate repetitive PVR > 200 ml is considered inadequate
- Use clinical judgement when interpreting PVR results in the intermediate range (50-199 ml)
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Conditions for Further Evaluation
Referral to Specialist
• Uncertain diagnosis/no clear treatment plan
• Unsuccessful therapy/patient requests further therapy
• Surgical intervention considered/previous surgery failed
• Hematuria without infection

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Conditions for Further Evaluation
Referral to Specialist (Cont.)
Existence of other comorbid conditions:
- Recurrent symptomatic urinary tract infection
- Persistent symptoms of difficult bladder emptying
- Symptomatic pelvic prolapse
- Suprapubic or pelvic pain
- Prostate nodule enlargement, asymmetry, suspicion of cancer
- Neurologic condition: multiple sclerosis, spinal cord lesions/injury
- History of previous radical pelvic or anti-incontinence surgery
- Diabetes mellitus

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Treatment: Non-surgical
- Fluid management
- Reduce caffeine, alcohol, and smoking
- Bladder retraining
- Pelvic floor exercises
- Pessaries
- Continence devices
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Treatment: Non-surgical

- Hormone replacement therapy
- Medication to help strengthen the urethra
- Medication to help relax the bladder
Non-surgical Treatment:
Fluid management
- Avoid caffeine and alcohol
- Avoid drinking a lot of fluids in the evening
Non-surgical Treatment:
Bladder retraining
- Regular voiding by the clock
- Gradual increase in time between voids
- Double voiding

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Non-surgical Treatment:
Physiotherapy
- Pelvic floor exercises
- Vaginal cones
- Devices for reinforcement
Myths:

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- Nothing can be done about it
- Surgery is the only solution

Non-surgical Treatment:

Pessaries
- Support devices to correct the prolapse
- Pessaries to hold up the bladder
Myths:

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Non-surgical Treatment:
Hormone replacement
  - Systemic
  - Local
Vaginal cream
Vaginal estrogen ring
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Non-surgical Treatment:
Medication to strengthen the urethra
  - Cold medication
    - Ornade
Myths:

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Non-surgical Treatment:
Medication to relax the bladder
- Oxybutynin (ditropan)
- Toteridien (detrol)
- Flavoxate (urispas)
- Imipramine (elavil)
Myths:

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Surgery:
- For stress incontinence
- Theories:
  - 1) Bladder neck evaluation
  - 2) Integral theory (Ulmsten)
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**Surgery:**
- Burch repair
- Marshall-marchetti-krantz repair
- Sling
- Needle suspension
- Injections
- Tension free vaginal tape

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