Urinary Incontinence is an Underreported Condition

- Many patients do not seek help because they believe no effective treatment is available
- 73% of patients who seek treatment are currently not on medication
- 2 of every 3 patients report that symptoms affect daily living
- Many patients self-manage urinary incontinence by voiding frequently, reducing fluid intake, and wearing pads


Impact of Urinary Incontinence on Quality of Life

- Physical: Limitations of physical activities
  - Avoidance of sexual contact and intimacy
- Sexual: Loss of self-respect and dignity
  - Fear of being a burden
- Psychological: Loss of bladder control
  - Anxiety
- Occupational: Absence from work
  - Limited productivity
- Social: Reduction in social interaction
  - Alteration of travel plans
  - Risk of institutionalization of frail older persons
- Domestic: Requirements for specialized underwear, bedding
  - Special attention to clothing

Prevalence of Urinary Incontinence in Comparison to Other Chronic Conditions

2. Fantl JA et al. AHCPR Publication No 96-0682;1996.

STRESS INCONTINENCE
Leakage with increased abdominal pressure of laughing, coughing, sneezing, or exercise

- Anatomical: due to malposition of a "normal" sphincteric unit

URGE INCONTINENCE
Urgent need to pass urine and difficulty getting to a toilet in time

- Reflexive/Involuntary contractions: phasic changes of bladder pressure unrelated to volume—receptors in bladder wall stimulated due to infection, bladder stones, and tumors causing contraction and loss of urine
Urinary Incontinence

Diagnosis and Approaches to Treatment

Diagnosis

Most cases can be diagnosed based on:
- Patient history
- Physical examination
- Urinalysis

Differential Diagnosis

- Neurogenic
- Fluid intake, urinary output disorders
- UTI
- Anatomic
- Malignancy
- Post-surgical
- Medication side effects

HISTORY... the questions we ask

- Activity related
- Beverage related [quantities and caffeine use]
- No nocturnal incontinence
- Strain to void
- Infections
- Leakage
  - at the time of stress only
  - change position
  - with urgency
  - BPH

Medication History Is Important

Some medications may contribute to lower urinary tract dysfunction

- Diuretics
- Antidepressants
- α-agonist
- α-antagonist
- β-antagonist
- Sedatives
- Narcotics
- Analgesics

PHYSICAL EXAM

- Urethral and bladder prolapse
- Other prolapse
- Vaginal atrophy-sign of estrogen deficiency
- Leak with strain
- Hypermobility of urethra
- Sacral reflex-assesses S2-S4 nerve function
What is Pelvic Organ Prolapse?

- Pelvic organ prolapse occurs when the muscles and tissues holding the pelvic organs in place begin to weaken. As a result, the pelvic organs - uterus, bladder and rectum - may protrude into the vagina

- What are the symptoms?
  - Pelvic pressure. Some women report a “dropping” or “falling out” sensation
  - Urine leakage or difficulty in starting to urinate
  - Bowel problems, including constipation
  - Painful intercourse

Treatment of urinary incontinence

- Behavioral
- Pelvic exercise
- Biofeedback
- Medical
- Neuromodulation
- Surgical

BEHAVIORAL

- Fluid restriction (6-7 8oz glasses)
- Bladder Retraining/Timed voiding [scheduling bathroom visits ~2 ½ hrs as a goal]
- Dietary changes
  - avoid sipping throughout the day.
  - Drink at meal time only
  - Avoid caffeine, carbonated drinks, citrus, spicy foods, artificial sweeteners, CHOCOLATE
  - Stop drinking after supper time.
- Voiding Diary [keeping a log of what you drink and quantities of urination]

Daily Bladder Diary

<table>
<thead>
<tr>
<th>Time</th>
<th>Accidental leaks Did you feel a strong urge to go?</th>
<th>What were you doing at the time?</th>
<th>What kind?</th>
<th>How much?</th>
<th>How many times?</th>
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<tbody>
<tr>
<td>6-7 AM</td>
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<td>10-11 AM</td>
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<td>11-12 PM</td>
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PELVIC FLOOR EXCERCISE

- Able to suppress the voiding reflex
- Requires strong educational effort to recognize and isolate the pelvic musculature [levator muscles]
- Try to contract muscles needed to start/stop urination
- Problems with patient compliance
- Contract and relaxation phase
- Probably not long term cure

Biofeedback

- Allows feedback to the patient about how effectively they are able to exercise their pelvic floor muscles
- Is a method of positive reinforcement
- In the office, electrodes are placed on the abdomen and perineum
- A monitor and technician are present to show which muscles are contracting

Medical therapy

- Detrol (Tolteridine)—Anticholinergic
- Ditropan, (Oxybutynin)—Anticholinergic
- Enablex (Darifenacin)—Antimuscarinic
- Vesicar (Solifenacin)—Antimuscarinic
- Sanctura (Trospium Chloride)—Antimuscarinic
- Toviaz (Fesoterodine)
- Hytrin (terazosin)/Flomax(tamsulosin)—alpha blockers
- Imipramine and doxepin—TCA

Undesired Effects of Antimuscarinics

- Tolerability/Safety
  - Dry mouth
  - Constipation
  - Ocular effects
  - CNS effects
  - Cardiac effects
  - Drug-drug interactions

Alpha Blockers

- Terazosin (Hytrin)
- Doxazosin (Cardura)
- Tamsulosin (Flomax)
- Alfuzosin (Uroxatral)

Alpha-blockers

- Inhibit alpha-receptors at bladder neck allowing for relaxation
- Take effect within a few days
- Side effects
  - Headache
  - Stuffy or runny nose
  - Low blood pressure
  - Reduced semen during ejaculation
Neuromodulation

InterStim Therapy

• Technique used to treat:
  • urinary retention [increase bladder emptying] and
  • overactive bladder [increase bladder storage] in patients failing to other more conservative therapy
  
  Implantable, programmable system

• Two stage therapy
  – Trial stimulation using quad electrode
  – Implantation of internal pulse generator

Implantation of the InterStim System

• Procedure done in operating room using conscious sedation
• Stimulator is implanted and connected to a lead that will stimulate your sacral nerve
• Stimulator is usually placed in upper buttock
• The entire InterStim System will reside under your skin
• Entire procedure takes 30-45 minutes

Minimally Invasive Approaches

• Durasphere perirurethral injection
• Injection into the Urethra to build up tissues to create a better seal.
• Pessaries are devices placed into the vagina to support pelvic organ prolapse.

Treatment of prolapse in Ancient Egypt

Surgical therapy

• Prolapse

Bladder Suspension

• Incision in the lower abdomen.
• Sutures through the tissue next to the vagina to help support the urethra and bladder firmly in place.
• This helps keep the urethra closed to prevent urine leakage.
Pubovaginal Sling

- The sling is most often used when the pelvic floor muscles and the urethral sphincter weaken.
- Incisions are made in the vaginal wall and in the lower part of the abdomen.
- Sling is usually from tissue from the abdomen or can be synthetic.
- Sling is placed like a hammock under the bladder and urethra.

Sling

- The Sling helps support the bladder and urethra firmly in place.
- This helps keep the urethra firmly in place to prevent leakage.

There is Treatment for Pelvic Organ Prolapse!

- Pelvic Reconstructive Surgery
- Self Management
- Pessaries

What are the Risks?

- All medical procedures present risk
- Although rare, complications include difficulty urinating, injury to blood vessels of the pelvic sidewall and abdominal wall, and bladder and bowel injury

Benefits

- Surgery takes one to two hours
- Can be performed under regional or general anesthesia.
- Many patients return to normal daily activities within three to four days. Most completely recover in a two to three week period.

Urinary tract infections

- Term applied to variety of clinical conditions ranging from asymptomatic bacteria in the urine to severe infection of the kidney with resultant sepsis.
- 150 millions patients are diagnosed with UTI yearly, resulting in at least $6 billion in health care expenditures.
Pathogenesis
- Periurethral bacteria ascending into the urinary tract causes most UTIs.
- Most cases of pyelonephritis are caused by the ascent of bacteria from the bladder through the ureter and into the renal parenchyma.
- Vesicointestinal or vesicovaginal fistulas.

Causative Pathogens
- Most UTIs are caused by a single bacterial species.
- E.coli causes up to 80% of uncomplicated UTIs and pyelonephritis.
- Other common species Klebsiella, Proteus and enterococcus

Host Defenses
- Urinary retention or reflux of urine into the upper urinary tract can promote bacterial growth and cause UTI.
- Anatomic or functional abnormalities such as pregnancy can cause obstructive conditions and lead to UTI.
- Foreign bodies such as kidney stones can seed UTIs

Case Study
- 80 year old man with no significant PMH, saw his PCP complaining of dysuria, frequency, Urine culture Staph Aureus tx Macrobid for 10 days.
- Also complained of BPH symptoms and Occasional urge incontinence for many months.
- Referred to urology
- Elevated PVR 175. Prostate international score 33/35 with bother score 5.

Case study
- Highest scores for incomplete emptying and weak urinary stream.
- Rectal exam enlarged prostate no nodules.
- Not following PSA at this point.
- Started Terazosin 1mg nightly for the first week then increase to 2mg nightly.
- Taught to straight catheterize 1-2 times daily for the next two weeks.
- Returned 2 months later, PVR 60, Prostate Int Symptom score 17. Symptoms much improved.
- Add on Vitamin c 500mg BID to acidify urine.

Case Study
- 68 y.o. female with Mixed urinary incontinence.
- Tried Detrol in past, not covered by insurance
- Drinking (6) 16 oz water bottles daily.
- PHM: Disk herniation, osteoporosis, hypercholesterolemia.
- Meds:, simvastatin
Case Study

• My exam: No prolapse, mild hypermobility of the urethra with cough.
• A&P: Timed voiding fluid management, 64 ounces daily maximum of fluid.
• Trospium 20mg bid

Summary

• Don’t be embarrassed...you are not alone!!
• Help is available in the form of minimally invasive surgical and non-surgical therapies