Female Urinary Incontinence

We Don’t Ask, They Don’t Tell: How to Fix the Leak

SGIM National Conference 2011
Phoenix, AZ
Objectives

• Obtain a proper history and physical
• Differentiate between types of incontinence
• Describe the treatment options
• Know when to refer a patient to a specialist
Workshop Overview

- Urinary Incontinence – Setting the scene
- Treatment options – What we can offer
- Referral to specialist – When to know to refer
Meet the patient - Linda

• Linda is a 31-year-old white female, G2P2, complaining of wetting herself
• Embarrassed and has stopped going to the gym or running, something she really enjoys
Discussion 1
Overview of Urinary Incontinence

Sonya Borrero, MD MS
Prevalence

- Increases with age (but it is not a part of normal aging)
- 25-30% of community dwelling older women
- 50% of nursing home residents; often associated with dementia, fecal incontinence, inability to walk and transfer independently

Anger, JT J Urol 2006; 175:601
Impact

- Underreported and underdiagnosed
- 32% of PCPs routinely ask about symptoms
- 50-75% of patients do not report symptoms
- Major economic and psychosocial burden
  - $19 billion/year

Thom, DH J Urol 2005; 173:1295
Anatomy

Bladder and Sphincter Muscles

- Bladder muscle
- Urine
- Urethra opening
- Urethra
- Sphincter muscles

Image Source: National Kidney and Urological Diseases Information Clearinghouse.
Normal Bladder Function

- Normal bladder contraction is caused by release of ACh from cholinergic nerves.
- Stimulation of muscarinic receptors on the detrusor smooth muscle.
Types of Urinary Incontinence
Prevalence in women

Minassian & Drutz, 2003
Stress Incontinence

- Increase in abdominal pressure causes loss of urine
  - Abdominal pressure caused by coughing, laughing, sneezing, running, lifting, walking
Risk factors for Stress Incontinence

- Pregnancy and childbirth
- Menopause: loss of intrinsic urethral tone
- Hysterectomy: nerve/muscle damage
- Obesity
Urge Incontinence

• Overactive Bladder (OAB)
  – Urgency
  – Frequency
  – Nocturia
  – With or without incontinence
Risk Factors for OAB

- Age (>65)
- Neurological illness
  - Stroke, MS, Parkinson’s, Spinal Cord injury
- Bladder obstruction
- Pelvic organ prolapse
- UTI
- Stress incontinence
- Often unknown
Habits which may worsen OAB (and we can control)

- Excessive fluid intake
- Alcohol
- Caffeine
  - Diuretic effect
  - Increases bladder contractions
  - Irritates bladder nerves
- Carbonated beverages
- Smoking
  - Nicotine may cause bladder contractions
  - Coughing may stimulate bladder contractions
Mixed Incontinence

- Mixed symptoms of urge and stress UI
- Diagnostic dilemma due to both symptoms
- Usually one predominant symptom and aim to treat the worst UI symptom
Obtaining a History
Screening

• Recommended that all women be specifically be asked about UI
• Particularly important for women who have had children, comorbid conditions assoc with UI and over age 65
Screening Questions

• “Do you ever leak urine/water -
  – when you don’t want to?
  – when you cough/laugh/exercise?
  – on the way to the bathroom?”

• “Do you ever use pads, tissue or cloth in your underwear to catch urine?”
History

- History can be very helpful with diagnosis
- 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
Medications related to UI

- Alpha-agonists
- Anticholinergics
- BZDs
- TCAs
- Diuretics
- ACE-I
# Voiding Diary

**Intake and Voiding Diary**

This chart is a record of your fluid intake, voiding and urine leakage. Please bring this diary to your next visit.

**Instructions:**
1. Choose 4 days (entire 24 hours) to complete this record – they do not have to be in a row. Pick days in which will be convenient for you to measure every void.
2. Begin recording when you wake up in the morning–continue for a full 24 hours.
3. **Make a separate record for each time you void, leak, or have anything to drink.**
4. Measure voids (using cc measurements) using the hat.
5. Measure fluid intake in ounces.
6. When recording a leak – please indicate the volume using a scale of 1-3 *(1=drops/damp, 2=wet-soaked, 3=bladder emptied), your activity during the leak, and if you had an urge ("yes" or "no").

## DAY 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Amount Voided (in ccs)</th>
<th>Leak Volume (scale of 1-3)</th>
<th>Activity during leak</th>
<th>Was there an urge</th>
<th>Fluid intake (Amount in ounces/type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:15a</td>
<td>325 cc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:45a</td>
<td></td>
<td>2</td>
<td>Watching TV</td>
<td>Yes</td>
<td>8 oz coffee, 8 oz orange juice</td>
</tr>
<tr>
<td>8:15a</td>
<td></td>
<td>2</td>
<td>Watching TV</td>
<td>Yes</td>
<td>8 oz coffee, 8 oz orange juice</td>
</tr>
<tr>
<td>10:30a</td>
<td></td>
<td>1</td>
<td>Jogging</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
PHYSICAL EXAM
Physical Exam

• Comprehensive and “above the waistline” to be included
• CV - volume overload
• Abdomen - masses and tenderness
• Extremities - joint mobility, function, venous stasis
• Rectal exam - masses, fecal impaction
Physical Exam

• Inspect vaginal mucosa
  – Atrophy, vault stenosis, inflammation
• Bimanual exam - masses or tenderness
• With two fingers posteriorly in the vagina 2-4cm from the hymenal ring, ask patient to contract the muscles used to “hold their urine” or “to avoid passing gas”
  – Ability to contract
  – Strength of contraction
  – Duration of contraction
Physical Exam

- Pelvic organ prolapse - herniation of the pelvic organs to or beyond the vaginal walls
  - Rectocele
  - Cystocele
  - Enterocele
  - Uterine Prolapse
Back to Linda…

- Admits to incontinence with coughing and sneezing since vaginal deliveries
- Physical examination – all within normal limits
- Labs – normal urinalysis, normal post void residual
- Voiding Diary
Discussion 2
Treatment of Incontinence

Rachel Hess, MD, MS

rah67@pitt.edu
Disclosures

- I have received investigator initiated grant funding from Pfizer as part of a multisite study looking at diagnosis and treatment of urgency urinary incontinence in primary care.
Stress Urinary Incontinence
SUI Treatment Options

- Conservative treatment
  - Lifestyle advice
  - Pelvic floor exercise
- Medications
- Surgery
Lifestyle Advice
Pelvic Floor Exercise

Kegel Exercises:
Contract your pelvic floor muscles for three seconds, then relax the muscles for three seconds. Do this 10-15 times several times a day. Although shown here while lying down, these exercises can be done during a variety of daily activities, such as sitting in a meeting, while stopped in your car at a traffic light or when talking on the phone.
Medication
Urgency Urinary Incontinence
UUI Treatment Options

- Conservative treatment
  - Lifestyle modification
  - Bladder training
- Medication
- Surgery
Lifestyle Advice

• Weight loss
• Fluid Management
• Timed Voiding
• Bladder Training
• Pelvic Floor Muscle Exercises
Bladder Training

- Patient is instructed to void every hour during the day
- The interval is increased by 15-30 minutes per week
- Goal to reach 2-3 hour voiding intervals
Medication

• Antimuscarinics
  – Good efficacy (about 30% reduction in incontinence episodes compared to placebo
  – Blocks acetylcholine from binding to the muscarinic receptors on the detrusor muscle to decrease the contraction of the bladder
  – Side effects: dry mouth, constipation, blurred vision (M3), cognitive dysfunction, memory loss, attention deficit, cardiovascular (M1 & 2—less common)
Discussion 3
Advanced treatments for (stress) incontinence

Briar Duffy, MD
Urodynamic evaluation

• Testing imprecise
  – Not standardized/reproducible, artificial lab situation, poor sensitivity/specificity

• Indications are controversial
  – Diagnosis of type of incontinence unclear
  – Symptoms do not correlate with exam
  – Treatment failure
  – May be done prior to surgery (most controversial)
Non-invasive

- Pessaries—ring or dish shaped
  - May increase maximum urethral closure pressure or increase functional urethral length
  - Inexpensive, safe
  - Successful fit: 71-89%
    - More likely to fit: no hysterectomy or prolapse surgery
    - Less likely: posterior prolapse, vaginal length < 6cm, genital hiatus > 4cm
  - Continue to use after 6 months: 55-89%
Choosing a pessary

- Largest pessary that the patient can wear comfortably is generally the most effective
- Examiner's finger should pass easily between the pessary and the vaginal wall
- In office, patient should:
  - Cough to test for any leakage of urine
  - Stand, sit, squat and perform Valsalva's maneuvers to be sure that the device will not become dislodged
  - Try to void. If unable to void with the pessary in position, the device should be removed and the patient should be fitted with the next smaller size

Pessary next steps

• Follow-up
  – Remove pessary to examine vagina for irritation, pressure sores or allergic reaction; clean pessary with soap/water
  – Few days → few weeks → several months

• Potential complications
  – Vaginal odor/discharge:
    • Acidic vaginal gel such as Trimo-San
    • Douche with vinegar or hydrogen peroxide
  – Vaginal ulceration:
    • Likely due to reduced estrogen
    • If thin vaginal walls notes, treat with vaginal estrogen before or concurrently with pessary
Electrical stimulation

- Noninvasive, implantable, percutaneous
- Poorly studied (small, non-randomized, non-blinded, case series)
- External magnetic stimulation: similarly poorly studied
Minimally invasive

• Periurethral injection
  – Focal expansion of periurethral tissues → increased pressure transmission to urethra
  – Original use: sphincter deficiency
  – Outpatient, local anesthesia
  – Cystoscopic, transurethral vs. transvaginal, periurethral
  – Most appropriate patients: high surgical morbidity, several previous operations, failed conservative tx, not a candidate for medications
Injections, continued

- Contigen®: glutaraldehyde cross-linked bovine collagen
  - Biodegradable $\rightarrow$ transient effect
  - Potential allergic reaction
  - 93% initially cured or significant improvement
    - 24% proceeded with sling due to persistent symptoms
- Durasphere®: carbon-coated zirconium beads
  - May migrate or form granulomas
- Macroplastique®: silicone
  - Theoretical risk of autoimmune d/o
- NASHA/Dx: dextranomer microspheres in a carrier gel of non-animal stabilized hyaluronic acid
  - Biodegradable

Isom-Batz G and Zimmern PE, J Urol 2009
Duration of injection effect

Durability of cure after last collagen injection. Cure was defined as no incontinence symptoms or pad use (questionnaire).

Durability of efficacy after injection with collagen or carbon-coated zirconium beads. Efficacy was based on an incontinence questionnaire.

Chapple CR et al, European Urology Oct 2005
Injections, continued

- **Efficacy:** around 75% of women have short term improvement or cure
- **Duration of effect:**
  - Unknown
  - At least months
- **Procedure cheaper than invasive surgery**
  - Transient effect $\rightarrow$ repeat procedures $\rightarrow$ unclear long-term cost
- **Low complication rate**
- **Virtually no evidence for choosing one agent over another**
Operations

• Mid-urethral sling: synthetic
  – Vaginal insertion, tension free
  – Shorter operative duration, hospital stay, recovery
  – Fewer new urgency symptoms
  – Most common complication: bladder perforation
  – Cure: 60-95%
    • Related to urge symptoms pre- and perioperatively

• Bladder neck/pubovaginal sling: autologous or synthetic mesh
  Cure: 82-100%
Surgical considerations

- Appropriate patients
  - Fail conservative therapy, finished childbearing
- Pelvic organ prolapse: more often have combined laparoscopic/open procedure
- Mixed incontinence:
  - If urge predominant, try meds first
  - Similar SUI symptom relief
- Obesity
  - Known risk factor for incontinence
  - Does not independently confer surgical risk
Very invasive operations

• Artificial sphincter
  – Complications common
  – About 50% of women had device removed due to complications
  – Only 37% continue to use it after 7 years

• Urinary diversion
  – High complication rate
  – Ostomies, suprapubic catheter
Wrap up and Questions