Female Urinary Incontinence

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What is urinary incontinence?

- Urinary incontinence is a storage symptom defined as the complaint of any involuntary loss of urine.
Urinary Incontinence
ICS Definition

• Involuntary urine loss that is sufficient to be a social or hygienic problem and is objectively demonstrable
Types of Incontinence

- Urge incontinence
- Stress incontinence
- Mixed incontinence
- Overflow incontinence
- Functional incontinence
- Incontinence without awareness
Neurophysiology of Voiding

Bladder filling and storage requires:

• Accommodation at low pressures
• Closed bladder outlet
• Absence of involuntary bladder contractions
• Capacity for cortical inhibition
Micturition and Storage Reflexs

Hypogastric Nerve

SYM $T_{10-L_2}$

Pelvic nerve

Pudendal nerve

Pontine Micturition Center

PSYM

$S_2-S_4$

Onuf’s nucleus

Leng & Chancellor UNA 2005
“Urology department. Can you hold?”
Psychosocial impact of Incontinence

- Alter lifestyle to minimize leakage
- Avoiding activities which cause leakage
- Plan excursions around restrooms
- Become socially isolated
- Score poorly on QOL questionnaires.
Overactive Bladder
What is Overactive Bladder (OAB)?

- The storage symptoms of urgency with or without urge incontinence, usually with frequency and nocturia.
OAB is a Widespread Problem That is Expected to Increase

- Approximately 37.4 million adults in the United States have symptoms of OAB\(^1,2\)
- Epidemiologic surveys suggest that the incidence of OAB rises as the population ages\(^1\)

### References:
3. Centers for Disease Control and Prevention (CDC). Air Pollution and Respiratory Health Branch, National Center for Environmental Health [asthma prevalence [asthma]]. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2010.
EPIDEMIOLOGY

AMERICANS OVER AGE 65

1995: 33 millions
2020: 53.3 millions

63% INCREASE
Costs

- Urinary incontinence alone cost over $26 billion in 1995
- Cost per patient over 65 years old is $3600/year!

Most functional pt is paying $500/year for absorbent products alone.
The Office Visit
Is often delayed….

- Embarrassed to discuss problem
- It’s just a normal part of aging
- Lack of information regarding treatment options
- Believe they can cope by making lifestyle changes
History

- OAB history: Urinary frequency, urgency, nocturia, and urge incontinence
- Urgency is due to fear of leakage
- May also present as PV dribbling, spontaneous urine leakage or SP pain
- History inaccurate in up to 40% of cases
- Often coexists with stress incontinence
Physical Examination

Physical exam:

- Targeted neurologic exam
- Sacral reflexes
- Mobility
- CHECK POST-VOID RESIDUAL
- Voiding diary
Evaluation

- Rule out UTI
- Rule out bladder tumor in older pts or pts with hematuria
  - Cytology
  - Cystoscopy
- +/- Cystometry
Office Cystometrogram
Urodynamics

- Evaluates many components of bladder/voiding phase
  - Capacity
  - Compliance
  - Competence
  - Sensation
  - Stability
Treatment is Available!
Treatment options

• Guided by *pts goals of treatment*
• Treat reversible causes (meds, infection)
  – Sedatives, Diuretics, Sympatholytics, Anticholinergics, Sympathomimetics
• Behavioral treatment
• Medical therapy
• Surgical
Behavioral Therapy

• Timed voiding:
  – Significant improvement or cure in 60-90% patients

• Limit fluid intake

• Avoid irritants such as caffeine or alcohol

• Prompted voiding

• Bedside commode
Treatment for Urge
Urinary incontinence & OAB
Treatment for Urge UI/OAB

• Behavioral therapy, such as timed voiding and fluid management
• Pelvic Floor Therapy (Kegels, Biofeedback)
• Intra-vaginal estrogen in those vaginal atrophy
Treatment for Urge UI/OAB

- Anticholinergic Medications
  - Detrol
  - Ditropan
  - Oxytrol patch
  - Imipramine
  - Trospium bromide-Toviaz
  - Solifenacin-VESIcare

- Side effects are many including dry mouth, constipation, blurred vision, dry eyes
Treatment for Urge UI/OAB

- Mirabegron-Myrbetriq, newest OAB medication
- Mechanism of action is different from older OAB medications.
- Better tolerated
- Improves bladder storage capacity
- Side effects: increased blood pressure, headache,
New OAB medication Myrbetriq

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• Improves bladder storage capacity

The most common side effects of Myrbetriq include:
• increased blood pressure
• common cold symptoms (nasopharyngitis)
• urinary tract infection
• headache
Case Study

• 63 yo female presents:
  – Severe frequency & urgency
    • Voids q 30-45
    • Unable to sit thru typical TV show
    • Unable to go to movies without BR
    • Nocturia x 6
  – Urge incontinence >4 accidents per day
  – Tried several meds
    • Mild improvement but when goes to higher dose, she is not able to tolerate side effects
  – Miserable

• Options??
ADVANCED OPTIONS FOR REFRACTORY OAB AND URGE INCONTINENCE
Intravesical Botox Therapy

- FDA approved treatment for OAB, January 2013
- Botox used for over 15 years for other indications
- Simple injections inside the bladder, done either in the office, vs OR-patient preference, no downtime
- Clinical studies-more than twice reduction in UI episodes
- Major side effects-urinary tract infection, urinary retention (<5%)
- Need to repeat the procedure every 6-12 months
BTX Technique

- **My prep**
  - 100 units (DO/OAB)
  - 200-300 for NGB
  - 10 ml volume
  - 20 injections
    - other templates exist-10 injections
  - Collagen inject scope

- **Problems**
  - Invasive
  - Temporary-requires repeat cystoscopy and injections
  - “feel” for the inject
    - Too deep: inject in serosa or outside bladder
    - Too shallow: waste into lumen
Percutaneous Posterior Tibial Nerve Stimulation

- Least invasive form of neuromodulation
- Needle electrode inserted into posterior tibial nerve
- Electrical impulse transmitted to sacral plexus
- 12 weeks, 30 minutes
- Maintenance
What is InterStim Therapy?

Implantable, programmable neuromodulation system.
Neuromodulation

• Low complication rates
• Success with implant
  – 79% of urge incontinence patients achieve clinical success (45% completely dry, remainder >50% reduction in leakage)
  – 64% of urgency/frequency (31% returned to normal voids & the remainder experienced >50% reduction in the number of voids)
  – Bilateral attachment may provide better response
• Pain disorders may also be responsive
STRESS INCONTINENCE
Stress Urinary Incontinence (SUI)

Predisposing factors:
• Childbirth
• Genetic factors
• Chronic straining, coughing, lifting, obesity

Treatment:
• Surgery-most effective
• Exercises-mildly effective
• Meds-minimally effective
Treatment for SUI

• Pelvic Floor Rehabilitation/physical therapy
• Medications-mildly effective
  – Imipramine
  – Duloxetine
• Incontinence Devices-
  inserts, pessary
• Surgery
Surgical Options for SUI

- Mid-urethral sling
  - polypropylene
- Pubo-vaginal sling
  - Cadaveric
  - Autologous
Summary

• Pelvic Floor Problems and Urinary Incontinence are extremely common

• Conservative and non-surgical therapies available for almost all disorders

• Patient CHOICE guides the treatment