Bowel and Bladder Dysfunction

Maximizing comfort and capability teaching in the primary care setting

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Overview

• Basic terminology
• A Visit
  • Bowel and bladder, normal function and dysfunction—what I teach my patients
  • History
  • Exam
  • Diagnostic tests (primary care vs specialty setting)
  • Making a plan
  • Follow up
• How far to take the workup and treatment in primary care
• Tips on working with schools and school nurses
Basic terminology

**Enuresis/Incontinence:** involuntary urination after potty training

**Diurnal enuresis:** daytime

**Nocturnal enuresis:** night time

**Primary enuresis:** full continence was never achieved

**Secondary enuresis:** a minimum of a 6 month period of continence was achieved before enuresis started
Terminology

- Lower urinary tract dysfunction (LUTD)
- Voiding dysfunction
- Dysfunctional elimination syndrome (DES)
- **Bowel and bladder dysfunction (BBD)**

- Encompasses all daytime urinary issues including urgency, incontinence, post-void leaking, vaginal voiding, increased/decreased voiding frequency (underactive/overactive bladder), voiding postponement, holding maneuvers, interrupted flow, and dysfunctional voiding
UTI

UTI:

- Non-febrile /cystitis
- Febrile/pyelonephritis
  - Fever >101
  - Requires abx
  - Requires screening for VUR
- Non-infectious colonization/chronic bacteruria
Bowel and Bladder Dysfunction

-what I teach my patients

• The bladder is like a water balloon

• The rectum is right behind the bladder

• The pelvic floor muscles are usually where the problem lies.

• This is because the pelvic floor muscles are frequently overworked and then do not relax readily when voiding is initiated. Muscle fatigue results.
Max video
Squatty potty
Deciphering symptoms

- **Urgency**: rectal pressure on the bladder (usually remits with good bowel clean out)

- **Frequency**: incomplete relaxation of the pelvic floor during voiding, leading to incomplete emptying. The bladder stays in ‘empty’ mode, driving the re-visit to the bathroom.

- **Hesitancy/push to initiate urine stream**: poor relaxation by the pelvic floor when the bladder is contracting. Difficulty initiating a parasympathetic reaction.
Deciphering symptoms

- **Incontinence**: pelvic floor fatigue, typically from holding habits.
- **Dysuria**:
  - Can be muscular – more like a pinching feeling - this is pelvic floor muscle irritability during voiding
  - Can be tissue irritation from small incontinence which has aggravated the vulva or meatus.
  - Can be crystaluria (check ca/creat as starting point)
Deciphering symptoms

- **Hematuria:** about half the time is due to bladder inflammation and resolves with bowel and bladder retraining and improved fluid intake.

- **Vulvitis:** Typically from urine leaking, inflamed tissue. (can often see red ring at perineal, perianal region.)
Constipation and urinary symptoms

In this study of 234 children with chronic constipation
  Daytime incontinence occurred for 29%
  Nighttime incontinence for 34%
  UTI’s for 11% and VUR for 16%

Bowel treatment program
  Disimpaction / maintenance

Results:
  Constipation was relieved for 52%
  Daytime dryness was seen for 89%
  Nighttime dryness was seen for 63%
  Rate of UTIs dropped dramatically

Loening-Baucke Peds, 1997
Getting buy-in

- Teach before taking bowel and bladder history
The urinary tract
Normal voiding—what happens

• The detrusor is a stretchy muscle. When bladder is >half full, awareness of bladder urge begins.
• Listen to urge or suppress it
• Go to bathroom, psychological cues signal start of parasympathetic reaction
• Body position aides or hinders bladder emptying
• Detrusor contracts, internal (involuntary) and external (volitional) urethral sphincters relax.
• The degree to which urethral sphincters/pelvic floor relaxes determines the ability to empty the bladder.
The Gastrointestinal tract
Normal bowel function

- Ideal bowel pattern requires:
  - Normal transit time
  - Adequate hydration and dietary fiber
  - Routine habit/psychological cues
  - Relaxation of pelvic floor
  - Coincidence of gastro-colic reflex, recognition of rectal urge and volitional relaxation of pelvic floor.
What complicates normal bowel function

- Stress
- Disregard for rectal urge to stool (won’t stool at school, disrupted routine due to multiple households, travel, leads to holding habit or retention)
- Too many constipating foods, too little fluid
- History of pain with stooling (leads to avoidance and holding)
- Improper posture. (link: squatty potty.com)
Fecal contamination of the urinary tract = dysuria, UTI
UTI in children

Presentation of urinary tract infection may be unusual
  • Fever only
  • Nonspecific symptoms

High prevalence of anatomic abnormalities (especially vesicoureteral reflux)
  • May predispose to UTI
  • May increase the risk of sequellae from UTI

Growing kidneys are more at risk of scarring from UTI
History

Onset of symptoms:
- Primary
- Secondary

Urinary History
- Urgency
- Frequency
- Dysuria
- UTI (febrile vs. nonfebrile)
- Hematuria
- Straining to void/delayed initiation of urine stream
- Itching/vulvitis
- Urine odor
History—how we ask

- Urinary:
  - Do you drink at breakfast, lunch dinner, and 2 other times during the day?
  - How many times do you pee at school?
  - When you have to pee do you feel like “I have to pee right now” (urgency)
  - Do you ever have to pee right after you just peed? (frequency)
  - When you get to the toilet do you ever feel like it takes a minute for the pee to come out, you have to wait or push? (hesitancy)
History (continued)

Bowel history:

- Frequency of stooling (how often do you poop?)
- Consistency of stools (Bristol stool scale) (what is your poop like?)
- Encopresis (poop accidents or poop on your underwear?)
- Diarrhea
- Straining (does it take a lot of pushing or does it hurt to poop?)
- Bleeding (is there every blood on your poop or toilet paper?)
- Abdominal pain (belly aches often, esp. after eating?)
- Anal itching later in the day
Normal isn’t normal

- American diet is not ideal
- American weight is not ideal
- Many children are under a lot of stress
- American bowel patterns probably are not ideal either
Bristol stool scale

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>3</td>
<td>Like a sausage but with cracks on its surface</td>
</tr>
<tr>
<td>4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>5</td>
<td>Soft blobs with clear-cut edges (passed easily)</td>
</tr>
<tr>
<td>6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>7</td>
<td>Watery, no solid pieces. Entirely Liquid</td>
</tr>
</tbody>
</table>
Challenges to gathering bowel and bladder history

Urinary habits:
- How much time are the parents with the children?
- Do parents observe toileting ability and habits?

Bowel habits:
- It’s difficult for people to talk about poop (for providers too)
- Parents feel defensive about bowel habits
- It’s difficult for kids to be honest about habits, especially poor habits
- Are parents seeing the poop before it is flushed?
- Are providers fully comfortable talking about poop?
Family medical history

Urinary
• Anatomical abnormalities
• Vesico-ureteral reflux
• Enuresis as child or adult
• Nocturnal enuresis
• Surgical history

Bowel:
• Constipation
• Crohn’s disease
• Irritable bowel syndrome
• Ulcerative colitis
• Lactose intolerance
Social history

Many life events can have an effect on healthy bowel and bladder habits.

- Stressors of normal life
  - Starting school
  - Moving
  - Divorce or marital turmoil
  - Death in the family
  - Parental loss of job
  - New sibling
  - Access to private, unhurried bathroom time

- Stressors above and beyond
  - Sexual abuse
  - Physical abuse
  - Verbal abuse
  - Neglect
Neuro-psychological factors

Mechanisms are not well-understood, however we see comorbidity with

- Speech delay
- Learning delay/developmental delay
- ADD and ADHD
Voiding dysfunction related to adverse childhood experiences and neuropsychiatric disorders

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Received 21 March 2014; accepted 24 June 2014

KEYWORDS
Voiding dysfunction;
LUTS;
Adverse childhood experiences

Abstract  Objective: Research has demonstrated the effect of adverse childhood experiences (ACEs) on later physiologic function and illness development. In the urologic literature, the relationship between bladder dysfunction and neuropsychiatric disorders is well documented. Observations in pediatric urology clinical practice suggest that a blend of these two areas of research can inform care of patients with voiding dysfunction.

Methods: Retrospective review of 216 patients seen in a single pediatric urology clinic by a single provider over a 24-month period. A descriptive, correlational study design was used to assess the extent to which ACEs and neuropsychiatric disorders affected resolution of symptoms when patients were treated with a bowel and bladder retraining program. Patients were selected using diagnostic codes related to voiding dysfunction and a retrospective chart review.
ACEs and ADHD/other

• Anticipate that in stressful life circumstances, major life changes, or conditions in which the brain is busy, bowel and bladder habits will be sub-optimal.

• Anticipate regression if there is turmoil or disruption.
Important co-morbidities to rule out

- Posterior urethral valves/urethral stricture
- Vesico-ureteral reflux
- Ectopic ureter
- Tethered cord
Incomplete emptying
Exam

- Basic exam, including general observations about age appropriate behavior, interaction, and speech
- Overweight/obesity increases risk of incontinence
- Abdominal exam: CVAT, full descending colon
- Musculoskeletal: heel walking, climbing, use of legs, gait
- Back: hair tuft, hyperpigmentation, sacral dimple

- Genito urinary and anal exam
  - Normal urinary meatus
  - Labial adhesions, phimosis
  - Anal tone
  - Condition of vulva, perineal, and perianal skin
Phimosis

- Treatment options:
  - steroid cream
  - watch and wait
  - circumcision.
- Monitor for and teach about paraphimosis – it is an emergency
Penile adhesions

- **Treatment:**
  - Steroid cream
  - Watch and wait
  - Surgical lysis of adhesions
Summary

• Get buy-in by teaching before getting history
• Bristol Stool Scale is extremely helpful
• Suspect bowel and bladder dysfunction in any stressful situation, ask about it.
• Focus on bowels
  • Bowel clean out has to be complete
  • If there is regression, come back to the idea of clean out
• Teach about bowel aides
Diagnostic tests

• **Uroflow and bladder scan:** At what rate and pattern is the urine being ejected from the bladder? Is the bladder emptying adequately?

• **Pelvic floor and abdominal EMG:** are these muscle groups inappropriately contracting during voiding?

• **Renal and bladder ultrasound:** are they normal? Is there a thickened bladder wall? Is there bladder debris?

• **KUB:** is there constipation, rectal dilation? (normal rectal diameter is 3-4 cm)

• **MRI:** is there tethering of the cord?

• **VCUG:** is urine refluxing to the kidneys? Is the bladder normal? Is there a spinning top urethra?

• **Urodynamics:** to understand a neurogenic bladder
Uroflow toilet
Uroflow

Normal Flow Pattern
Uroflow: abnormal curves

Uroflow and post-void residual (PVR)

Uroflow machine allows us to measure the rate of urine ejection, giving us a window into:

- How well the detrusor contracts to expel urine
- How well the sphincter relaxes to let urine flow out
- How well the two are working together to accomplish voiding
- How large the bladder is (depending on how full pt feels)
- How well the brain/spinal cord comprehend/sense bladder volume and urges
Bladder scanner/PVR

- Used after voiding to determine how completely the bladder was emptied.
EMG
Renal & bladder ultrasound
Renal and bladder ultrasound

- Kidneys
  - Size
  - Scarring
  - Hydronephrosis
- Bladder
  - Wall thickening
  - Post void residual
  - Signs of constipation/mass
Urodynamics

• Invasive (urethral and possible rectal catheters)
• May be combined with imaging (“video”)
• Helpful in diagnosis of tethered cord
• Reserved for children with neurologic symptoms or refractory wetting
Making a plan - bladder

Bladder retraining

- Timed voiding q 2 hours (except for frequency)
- Sit with legs in a V
- Feet on floor or a stool
- Take your time
- Listen to body cues (may be at odds with our environment)
- Adequate fluid intake
- Avoid bladder irritants (caffeine, carbonation, citrus, chocolate)
- May be prescribed an anticholinergic (Ditropan, Detrol)
- Biofeedback or pelvic floor physical therapy
Making a plan - bowels

Bowel retraining:

• Without correcting problematic bowel habits we will have little or no success treating the bladder.

• When slow bowel habits return (weeks or months later), so does dysfunctional voiding.
Treating slow bowels

• Bowel clean out followed by daily doses until optimal habits are established

• Toilet sitting after meals (I usually stress supper), listen to body cues

• Adequate fluid intake (6-8 cups/day)

• Adequate dietary fiber (age +5)

• Exercise

• Referral to GI prn
Making a plan-nocturnal enuresis

Work toward optimal daytime bladder behavior: (see bladder retraining)

To support dry nights:

• Fluid intake primarily in the daytime
• Fluid restriction after supper
• Void twice at bedtime
• Encouraging thoughts/talk, hypnosis/guided imagery
• May try bedwetting alarm
• May try medication (desmopressin/DDAVP)
Making a plan-UTIs

• Hygiene
  • Wiping front to back
  • Removing moisture, improving skin integrity
  • Always remove urine and stool immediately (wet wipes)
  • Void q 2 hours, listen to body cues to void
  • Daily, soft stools (type 4)
• Treatment dose x10 days if culture is +
• Prophylaxis may be necessary (especially if VUR)
Medications

**Anticholinergic---RELAX the bladder**
- Oxybutynin (Ditropan, Oxytrol), Tolterodine (Detrol),
- Hyoscyamine (Levsin), Darifenacin (Enablex), Trospium Chloride (Sanctura)

**Alpha-Blocker---RELAX the sphincter**
- Doxazosin (Cardura), Terazosin (Hytrin), Tamsulosin (Flomax)

**Other---Diagnosis specific**
- Methylphenidate, desmopressin (DDAVP), Imipramine, Antibiotics
Biofeedback; pelvic floor PT

What is it?
4 sessions, one hour each visit, spent learning to isolate/contract pelvic floor muscles (Kegels) but MORE IMPORTANTLY to relax pelvic floor muscles and abdominal muscles while voiding.

Videogames are used to help isolate those muscles.

Much time and support, reminders and encouragement are given.

Practice at home is important

What are the goals?
Teach patients to sense pelvic floor and abdominal relaxation while voiding
Encouragement and repetition to cement the learning
Biofeedback
Biofeedback

Who is a good candidate?

• Patient old enough to engage for 1 hour without excessive ADD/ADHD (usually this is age 5 and up, but this is relative)
• Parent buy-in and ability to follow through
• Patient who has had little success with bladder retraining so far
• Patients with upper tract changes
Biofeedback-poor prognosis

- Patients younger than 5
- Patients with Small functional bladder capacity (anticholinergics can help this)
- ADD / ADHD

McKenna JUrol, 2002
Time spent with the child

Perhaps the most effective thing that we have to offer as a specialty practice to children with voiding dysfunction is the time to focus on this issue that is very important, very private, and very frustrating to the child and the family.

Time spent teaching and customizing a plan of care to the family’s need, pace, and abilities is key.

Getting support from camps, schools, daycare is essential to success.
Follow-up

• I see patients 2 weeks after the initial visit
• at 1-3 month intervals until progress is seen with bowel habits,
• then at 6 month intervals until they no longer need support.
• It is common for bladder symptoms to return if/when constipation returns.
The role of schools

Elementary school-aged children (awake for 11-12 hours) spend 7-8 hours at school or on the bus. This is most of their waking hours.

Our schools provide the place to pee and poop for all of that time.

Our schools provide the social structure/rules/cues that allow us to take or not take time to take care of our bladder and bowel needs.

School is the primary site of social interaction for most children, and the social stressors that accompany social settings affect bowel and bladder function.

Schools provide food to many of our children, affecting bowel habits.

Schools provide encouragement or discouragement about fluid intake habits.
The role of school nurses

Teaching your teachers

• They should understand normal bowel and bladder habits

• They should encourage healthy habits

• Even rare comments said by teachers in moments of frustration about one student who abuses bathroom privileges can affect the rest of the children’s understanding of what is allowed/normal.
The role of school nurses

Protecting/creating the bathroom environment

• Well-recognized in most kindergartens and 1st grade classrooms
• Not so well protected after that
• Small toilets and privacy are important
The role of school nurses

• Supporting parents and encouraging referral when needed---don’t wait for symptoms to subside on their own, a lot of adaptation and frustration/self esteem issues can occur while waiting.

• Helping sort it out
  • First week jitters?
  • Urinary tract infection?
  • Enuresis?
The role of school nurses

School nurses can support provider recommendations by:

• Supporting timed voiding q 2 hours
• Prompt water intake throughout the day
• Administer medications and monitor for side effects
The role of school nurses

- Provide shelter from the school environment
  - Private bathroom if needed
  - Wipes—may need help learning to do this
  - Dry clothing
  - Encouragement, comfort, confidence, acceptance