ENCOPRESIS

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ENCOPRESIS

• Introduction
  – Definition
  – Classification

• Elements
  – Constipation
  – Stool Retention
  – Incontinence
  – Development and Behavior
    • Toilet training
    • Other potentiatiors

• Evaluation
• Management
ENCOPRESIS

- Repeated passage of feces into inappropriate places such as clothing or floor
- Age $\geq$ 4 years – chronological or mental
- Involuntary or intentional
- Not due to an organic disorder or medication
- At least once a month for $\geq$ 3 months

ENCOPRESIS

- Affects 1-3 % of children
- Boys > girls (estimated at 4-6:1)²
- Most accidents occur later in day (3-7 PM)²
- Primary (continuous): child has never completed toilet training for stool
- Secondary (discontinuous): toilet trained child regresses to incontinence

ENCOPRESIS

• **Retentive** (80-95%): involves
  – Constipation
  – Stool retention
  – Overflow incontinence

• **Nonretentive** or “solitary” (5-20%)³:
  – No constipation or overflow incontinence
  – Stool toileting refusal/resistance/”phobia”
  – Often manifestation of emotional disturbance

• Virtually all children with encopresis retain stools at least intermittently⁴

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Incidence & prevalence decrease with age
- More prevalent in boys
- Prevalence reverses in elderly
- 16% of affected children have one affected parent
- All socioeconomic classes

<table>
<thead>
<tr>
<th>Overall children</th>
<th>1.5 %</th>
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<tbody>
<tr>
<td>School children aged 6-12</td>
<td>1.5-7.5%(^\text{13})</td>
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<tr>
<td>4 y/o</td>
<td>2.8 %</td>
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<td>5 y/o</td>
<td>2.2 %</td>
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<tr>
<td>6 y/o</td>
<td>1.9 %</td>
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<tr>
<td>7 y/o</td>
<td>1.5 %</td>
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<tr>
<td>Gen Peds clinics</td>
<td>3.0 %</td>
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<td>Child Ψ outpts.</td>
<td>5.7 %</td>
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<td>Child Ψ inpts.</td>
<td>8.0 %</td>
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<td>Peds GI clinics</td>
<td>25 %</td>
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ELEMENTS of ENCOPRESIS

- Constipation
- Stool retention
- Incontinence
- Development and Behavior
  - Toilet training
  - Other risk factors
CONSTIPATION
Differential Diagnosis

- Functional (>95%)
  - Metabolic
    - Hypothyroidism
    - Hypokalemia
    - Hypercalcemia
    - Dehydration
  - Drugs
    - Opiates
    - Antidepressants
    - Anticholinergics
    - Lead poisoning
  - Neuromuscular
    - Spinal cord lesion
    - Hypotonia
    - CP
- Intestinal
  - Hirschsprung’s disease
  - Celiac disease
  - Anal stricture/stenosis
  - Anterior dislocation of the anus
  - Imperforate anus
  - Meconium ileus equivalent (CF)
  - Pseudo-obstruction
  - Pre-sacral mass
CONSTIPATION
Evaluation

- **History**
  - Onset
  - Stool character
  - Encopresis
  - Toilet training
  - Stool size
  - GI sx (abd pain, N/V)
  - Diet/appetite
  - Growth
  - Family Hx

- **Physical**
  - Abdominal distention
  - Palpable stool masses
  - Anal tone
  - Stool in vault
  - Neurologic

- **Laboratory**
  - Barium enema
  - Rectal biopsy
  - Anorectal manometry
  - Blood tests
CONSTIPATION

Red Flags for Organic Causes

- Failure to thrive
- No withholding
- No soiling
- Extraintestinal symptoms
- No response to conventional treatment

- Flat buttocks
- Spinal dimple/tuft
- Patulous anus
- Abdominal distention
- Tight, empty rectum
- Gush of liquid stool/air from rectum upon withdrawal
- Occult blood in stool
- Absent anal wink
- Decreased LE tone/strength
STOOL RETENTION

Toilet avoidance

Painful defecation

Anal fissures or hemorrhoids

Increasing retention

Reduced sensory feedback

Stretched rectal wall

Altered defecation reflexes

Paradoxical anal sphincter relaxation

Stool incontinence

Increased colonic water absorption

Larger/harder stools
STOOL RETENTION
INCONTINENCE

• In presence of large fecal mass
  – Anal sphincter relaxes
    • In response to arrival of more stools OR
    • When child tries to pass gas OR
    • When muscles used to withhold are used in other activities
  – Stool, usually soft or liquid, leaks out around impaction
PHYSIOLOGICAL CORRELATES

- Contractile status of anal sphincter
- Investigated with multiple modalities
  - Rectal balloon defecation test
  - Anal electromyography
  - Anorectal manometry
- Conflicting reports
- Primary disorder vs. Secondary to chronic stool retention

FUNCTIONAL CONSTIPATION
Pathogenetic Model\textsuperscript{10}

Frightening experiences related to defecation
(magical thinking, inappropriate television programs, coercitive toilet training)

Autonomy
Toilet phobia
Play activities
Attention deficit-Hyperactivity disorder

Fear of defecation

Stool withholding

Painful defecation

Accumulation of fecal mass

Infectious colitis
Allergic colitis
Abuse
Trauma
Perianal streptococcal infection
Anal fissure
Lack of dietary fibers
Dehydration

Infrequent stools
Small ribbon like or bulky stools
Abdominal pain
Poor appetite
Irritability
Overflow soiling

DEVELOPMENTAL MODEL

Stages in Pathogenesis of Encopresis

• Stage I
  – Infancy and toddler years
  – Early experience and constitutional predisposition

• Stage II
  – 3-5 years old
  – Toilet training and early autonomy

• Stage III
  – Early school years
  – Function in new environments

DEVELOPMENTAL MODEL

- Multiple risk factors interplay with one another
- Presence of multiple risk factors increases child’s vulnerability to developing encopresis
- Accumulation of risk factors POTENTIATES the problem
- Each of the 3 stages has its own set of inherent potentiators of encopresis

Stage 1
Infancy and toddler years

• Simple constipation
• Early colonic inertia
• Congenital anorectal problem
• Other anorectal conditions
• Parental overreaction
• Coercive interventions → “the anal stamp”
Stage 2
Training & early autonomy

- Anxiety over sitting on toilet
- Magical thinking and fears
  - Falling in
  - Toilet flooding
  - Monsters and snakes
- Overly coercive or permissive training
- Other areas of autonomy conflict
- Painful or difficult defecation
TOILET TRAINING

• Bowel control
  – No longer involuntary leakage of stool from rectum
  – Not categorized as daytime or nighttime control

• Most U.S. children fully trained between 24-48 months of age

• No universal timeline for process
  – Two divergent approaches have been widely advocated
TOILET TRAINING

Approaches

• Structured-behavioral
  – Endpoint-oriented
  – Teaching/eliciting chain of independent toileting behaviors

• Child-oriented
  – Brazelton (1962)
  – Gradual, developmental
  – Response to child’s signals of toileting readiness
  – Favored by AAP and more widely used

T. Berry Brazelton, MD
AAP GUIDELINES

• Suggest parents
  – avoid forcing or pushing child into training
  – look for signs of readiness for mature toileting
  – seek support & guidance from healthcare provider

• No universal right age to begin or deadline to complete training

• Emphasize that toilet training is key developmental milestone
  – Acknowledge roles of parents, caretakers, and daycare providers

SIGNS OF READINESS\(^7,^8\)

- Imitates parents’ behavior
- Expresses interest in toileting
- Begins to put things where they belong
- Indicates when wetting or soiling
- Walks well
- Can sit down on potty chair
- Able to undress and dress
- Can communicate need to “go”
- Can follow one and two-step commands
- Demonstrates independence by saying “no”
- Desires to please based on positive relationship w/caregiver

TOILETING REFUSAL

Follow-up in 1 to 3 months

Constipation responds to dietary measures

- Parent to offer gentle positive assistance
- Positive feedback system

- Responds
  - Congratulate on success
  - Consider child mental health referral

- Resists
  - Continued refusals beyond 48 months of age

- Presents
  - Constipation requires enemas, laxatives to treat acquired megacolon
  - Frequent follow-up
  - Constipation resolved

Discussion with parents
- Remember that child is in control
- Address stressors in child's life
- Stop ALL reminders and pressure to use the potty
- Pay careful attention to constipation/stool withholding

Stage 3
Extramural function

• Avoidance of school bathrooms
• Prolonged gastroenteritis
• Dietary issues
  – Lactose intolerance
  – Overconsumption of milk and chocolate
• Attention deficit and task impersistence
• Frenetic lifestyles
• Psychosocial stressors
CO-MORBID ASSOCIATIONS\textsuperscript{5,11}

- Low self-esteem
- Social withdrawal
- Depression
- Anxiety
- “Neurosis”
- Learning disabilities
- Attentional dysfunction
- ADHD
- Conduct disorder
- Child abuse (victims)
- Enuresis

\textsuperscript{5} Boon FL and Singh NN. \textit{Behav Modif} 1991; 15(3): 355-71.

\textsuperscript{11} Johnston BD and Wright JA. \textit{Dev Behav Pediatrics} 1993; 14(6): 381-84.
ENCOPRESIS and ADHD

- Child with ADHD more likely to have encopresis than normal
- Task impersistence (Levine): child seldom finishes what he starts, including defecation
- Deficient self-monitoring
  - Less responsive to rectal distention
  - Less likely to act on physical cues
- Poor prioritization
- Poor reinforceability
- Suggested association, but few studies
  - 23% of encopretic children scored >98th %ile on hyperactivity subscale of Child Behavior Checklist
  - 30% of untreated encopretics scored in clin. sig. range of hyperactivity on Conner’s scale
- Constipation is side effect of stimulants and TCAs

ENCOPRESIS and Child Abuse\textsuperscript{12}

- Significant physical abuse as punishment for soiling
- Victims of sexual abuse
  - Anal penetration and subsequent trauma
  - Damage to anal sphincter
  - Painful defecation and retention cycle

ENCOPRESIS and ENURESIS

• Distended rectum can compromise bladder function\(^2\)
  – Usually causes dribbling
  – Treatment of stool retention usually treats this

• 15-25% of children with enuresis also have encopresis\(^{14}\)

• Prevalence of enuresis in children with encopresis varies among studies\(^2\)

• Obstructive uropathy secondary to obstipation

• In girls, UTI secondary to soiling of perineum

MANAGEMENT

• Initial counseling
• Initial cleanout
• Maintenance therapy
  – Lessen stool retention
  – Restore regular bowel habits
  – Maintain soft stools
  – Restore neuromuscular function
  – Heal emotional scars
• Follow-up
TREATMENT

• Cleanout
  – Cycles of enemas, suppository, laxative
  – Inpatient if severe or complicated

• Maintenance
  – Regular toileting routine – same times each day
  – Dietary fiber and increased water intake
  – Laxatives
    • Osmotic: M.o.M., lactulose
    • Stimulant – bisacodyl, senna
  – Stool softeners – Colace

• Continue for prolonged period (≥ 6 months)
REFRACTORY ENCOPRESIS

• Enlist help of parents and teachers
• Behavioral counseling
• Biofeedback programs
• Psychological or psychiatric referral
  – Nonretentive encopresis resistant to treatment
  – Family psychopathology
  – Parental sabotage of treatment
• Requires pediatric tenacity