You need more than miralax

Disclaimer

I have no financial conflicts concerning the subject of this discussion

PEG-3500

- 1982 Braintree Labs incorporated
- 1984 Golytely
- 1999 Miralax
- 2006 Miralax OTC

Water soluble, tasteless
Binds water to side chains

Case 1

- 8 yo boy recent onset encopresis
- Infrequent stools and ? short periods of encopresis in past 2 years
- Physical exam normal except for perianal soiling
- No previous therapy
Your initial treatment?

1. Miralax 17 grams in 8 ounces of water daily
2. Miralax 17 grams in 8 ounces of water repeated until entire 225 gm canister is emptied
3. 2 dulcolax tablets

If you chose daily miralax

- No effect on stooling
- More soiling
- Mom upset that the symptoms are worse

If you chose the “miralax cleanout”

- Child drank 3 glasses and refused any further
- Stooling frequency unchanged
- Soiling worse

If you chose dulcolax

- Child woke up next AM, hustled to the bathroom and had bowel movement!
- Had no further soiling for a week then soiling resumed
Lessons from Case 1

- One day of treatment doesn’t cure chronic constipation
- Stool softeners may not help a dilated colon
- My treatment plan for this child
  - Educate parent and child
  - Dulcolax tablet(s) daily for 2-4 weeks
  - Restart Miralax 17 gm daily after 4 weeks
  - Taper dulcolax
  - Keep in touch by e-mail

Bisacodyl

- Diphenyl methane very similar to phenolphthalein
- Stimulates enteric nerves and induces colon mass movements
- Also has a surface activity mediated through prostaglandin - stimulates water secretion

Senna – the other stimulant

- Glucoside of anthraquinone extracted from seeds or leaves
- Surface active agent
- Variable concentrations
  - Senokot liquid – 8.8 mg/tsp
  - Most tablets – 8.8 mg
  - Little tummies stimulant drops 8mg/ml!

Case 2

- 3 yo girl recently achieved toilet training
- 2 months severe abdominal pain with screaming
- Mom describes large caliber stools and fear of potty
- Extraordinarily resistant to examination. ? Abdominal distension ? Abdominal mass
- You need more information
Which diagnostic test would you use now?

1. Abdominal U/S
2. Abdominal CT
3. KUB

Your gestalt interpretation of this X-ray?

1. She is loaded
2. She is normal

Gestalt method

Leech system evaluation of fecal loading

- 0-5 not constipated
- 6-10 maybe constipated
- 11-15 clearly constipated
There are many systems

- **Gestalt** – impacted or not impacted
- **Leech** – divide by 3 and score each from 0-5; constipation defined as >9
- **Barr** - divide into 4 quadrants and score each from 0-5 plus 1 point for quality of stool
- **Gau** – put an X across the abdomen and score each segment from 0-5
- and several others

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Lack of utility of abdominal x-rays in the evaluation of children with constipation: comparison of different scoring methods. Nurko, JPGN 2010

- 160 patients – 125 with constipation, 35 controls
- Comparison of gestalt, Barr and Leech systems evaluation of plain abdominal films
- Good intra-observer correlation but no inter-observer correlation.

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Do we need more proof?

Ask for photos: truly worth 1000 words!

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Case 3

- A 4 year old boy with chronic constipation is impacted for the 3rd time
- You want to disimpact quickly so you can get him back on maintenance therapy
- Your preferred disimpaction therapy
### What do you prefer for disimpaction therapy?

1. Baby fleet enema
2. Adult fleet enema
3. Saline enema
4. Dulcolax suppository
5. Miralax cleanout

### Adult Fleet Enema Composition

- Water 118 cc
- 1.6 mEq Na/ml (188mEq)
- 1.4 mMol phosphorus/ml (165mmol)
- 6000mOsm/L
- Daily requirement Na 2-3 meq/Kg
- Daily requirement PO4 1-2 meq/Kg

### Pediatric Phosphosoda Enema Toxicity Data

- 20-30 reported complications, mainly dehydration, acidosis and hypocalcemia
- 2 deaths and 1 severe neurologic sequellae
- Fatal dose in piglets ranges from 20-30cc/Kg
- Fatal dose in 8 kg 19 mos old child was 4cc/Kg

Ismail, JPGN 2000

### Rules to live by for phosphosoda enemas

- Never in a child under 2
- Baby fleet only between 2 and 4 years old
- Never in a child you don’t know well
- Never in a child with fever, cardiac, renal or motor problems
- Never at home for the first time
- If it doesn’t pass, go after it
- Never repeat
Other safe clean out procedures

- Saline enema – 40 cc/kg
- Dulcolax suppository
- Miralax cleanout

Miralax cleanout – no standard protocol

- Standard miralax mix is 17 g/240cc (.7gm/10cc)
- Children over 2 years
  - 1.5 g/Kg/day for 4 days
  - Max daily dose 100g/day
- Young children
  - Mix 1 cap in 240cc and put in refrigerator
  - Give 10cc/pound/day for 4 days
- Most of us find that 1 or 2 days is plenty

Rapid miralax cleanout – no standard protocol

- Drink normally mixed miralax 4-8 ounces every 15-30 minutes until stools are liquid (gatorade preferred)
- Teenager takes 6-10 eight ounce doses
- 6-12 year old takes 4-6 eight ounce doses
- < 4-6 year old takes 2-4 eight ounce doses
- Provide reliable phone support for problems