Management of the Neurogenic Bowel

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DEPARTMENT OF NURSING

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OBJECTIVES

*Discuss strategies that will improve bowel management in the child living with a neurogenic bowel.

1. Define bowel anatomy and nerve structures and how they relate to constipation
2. Discuss steps to prevent constipation
3. Promote bowel management independence in the age appropriate child
NEUROGENIC BOWEL

Neurogenic bowel is a dysfunction of the bowel caused by neurological conditions such as:

* Spina Bifida * Traumatic Brain Injury
* Spinal Cord Injury (SCI) * Multiple Sclerosis (MS) * Stroke
* Diabetes Mellitus (DM) * Brain Tumors

Children with neurogenic bowel will have abnormal bowel function…definitely incontinence and very frequently constipation. The child is certain to need assistance with a bowel training program.
ANATOMY OF THE BOWEL

FOOD ENTERS FROM MOUTH

ASCENDING COLON

TRANSVERSE COLON

RECTUM

DESCENDING COLON

ANAL SPHINCTERS
CONTROL CENTERS
SEVERE CONSTIPATION
SEVERE CONSTIPATION

Normal

Stool
Rectum

Sphincter
Muscle

Anus

Chronic
Constipation

More stool forms and backs into colon.

Soft stool

Large stool gets stuck. (impacted)

Enlarged
Dilated
Rectum

Anus
BOWEL MANAGEMENT GOALS

* Non constipated stool
* One BM per day on the toilet at an appropriate time
* Social continence by school age
* Independence
WHERE IT ALL BEGINS…

* Start controlling constipation as soon as it manifests itself (in what you think is diarrhea or in those hard little balls)
* Potty train as you would with any child when developmentally appropriate (and if able to toilet sit)
  * Use a diary method to track bowel movements, i.e. time of day, number per day, what do they look like
WHERE IT ALL BEGINS…

<table>
<thead>
<tr>
<th>Bristol Stool Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
</tr>
<tr>
<td>Type 2</td>
</tr>
<tr>
<td>Type 3</td>
</tr>
<tr>
<td>Type 4</td>
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<tr>
<td>Type 5</td>
</tr>
<tr>
<td>Type 6</td>
</tr>
<tr>
<td>Type 7</td>
</tr>
</tbody>
</table>

choose your Poo!

<table>
<thead>
<tr>
<th>Type 1</th>
<th>rabbit droppings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2</td>
<td>bunch of grapes</td>
</tr>
<tr>
<td>Type 3</td>
<td>corn on cob</td>
</tr>
<tr>
<td>Type 4</td>
<td>sausage</td>
</tr>
<tr>
<td>Type 5</td>
<td>chicken nuggets</td>
</tr>
<tr>
<td>Type 6</td>
<td>porridge</td>
</tr>
<tr>
<td>Type 7</td>
<td>gravy</td>
</tr>
</tbody>
</table>
DIETARY IMPACT

Encourage foods high in fiber

* soluble fiber occurs naturally in vegetables, grains, legumes and fruits
* insoluble fibers are found in wheat, oat bran, corn, flaxseed, as well as the skins and peels of many fruits and vegetables.
* daily intake should be 25 to 30 grams per day
* better to give babies barley, not rice cereal
DIETARY IMPACT

More facts about insoluble fiber…

* When placed in water does not dissolve
* Will sink to the bottom
* Soaks up water and will puff up like a sponge
* Found in items that do not change their shape, i.e. apple peeling (the inside of the apple provides soluble fiber)
* Has a laxative effect
* Prevents constipation by speeding up the passage of food and waste through the GI tract
DIETARY IMPACT

Encourage:

Fiber supplements – available in a variety of choices including chewable, powder and gummies

* Dosing examples:
  
  Age 1-6 years: 1/2 tsp 3x/day
  
  Age 6-12 years: 1 tsp 3x/day
  
  12 years and up: 2 tsp 3x per day
  
  Kids 2-11: 1 gummy, 3 times daily
DIETARY IMPACT

Encourage:

* Plenty of water – ok to give by the time baby takes solids

* Juices such as apple, pear or prune (or a mixture of)

* For toddlers – finger foods such as raw veggies and fruits
DIETARY IMPACT

Avoid:

Foods that are high in fat and low in fiber – they cause constipation. Examples include:

* Peanut Butter  * Milk
* Snacks like chips and pizza
* Processed foods, such as instant mashed potatoes or frozen dinners
* Ice Cream  * Cheese – including Mac & Cheese
BOWEL MANAGEMENT

**Infants:**
Prevent constipation
* Use fruit, fruit juices, water, gentle laxative

**Toddlers:**
Prevent constipation
* Start toilet sitting – 15 to 20 minutes after eating dinner
* Sit with feet well supported – should be a relaxed time
* Grunt and bear down or blow bubbles/pinwheel
* This approach is called habit training
* Choose a time that works for the family
BOWEL MANAGEMENT

Older child:

* Prevent constipation
* Continue all the items from the toddler stage
* Use reward system
  - sticker chart with a prize after pre-set goal is met
* Start working towards independence
BOWEL MANAGEMENT

* Start assessing bowel situation early
* Keep a diary of bowel movements
  - Frequency
  - Consistency
  - Pattern
  - Accidents

* Initiate habit training when potty training is developmentally appropriate
MEDICAL MANAGEMENT

When habit training alone is not effective…

* Add a stimulant or laxative and/or a suppository or an enema

* Oral – Lactulose ®, Miralax ®, senna,
* Rectal – Enemeez ®, Fleets enema ®,
  “Cone Enema”, bisacodyl or glycerin suppository

BE PATIENT- a bowel program may take 3 to 5 months before it is reliable and predictable
MEDICAL MANAGEMENT

Visi-Flow Irrigator “Cone Enema”

* The cone enema has a bag attached to tubing with a funnel-like cone at the end - use like a “plug”
* More natural since using water
* Water determined by patient weight (20cc/kg – max 1000 cc)
* Can sit on toilet for use
* Can become independent with practice
MEDICAL MANAGEMENT

Miralax

* Takes 5-8 days to begin working
* Massive results
* Can be unpredictable for maintenance

Note – use oral agents alone or in combination with an enema or suppository
MEDICAL MANAGEMENT

Milk of Magnesia

* Large dose over a short period of time
* Works in 48 hours or less
* May cause cramping
SURGICAL OPTION

Antegrade Continence Enema
Also known as M.A.C.E. (Malone Antegrade Continence Enema)

* Indicated when all other approaches have failed
* This procedure involves creating a catheterizable channel leading to the intestines – often the appendix is used since it is already a “straw-like structure”
* Stoma most often in the right lower quadrant
* Enemas every 24 – 48 hours to empty the colon completely
SURGICAL OPTION

Challenges include:

* Fluid volume needed for good clean out
* Length of time to perform
* Channel leakage – need for revision
* Channel stenosis with infrequent use
IN SUMMARY

* Multiple therapies available before surgical option
* Important to start bowel training at toddler stage
* Goal is for child to become independent when at appropriate developmental age
* Each child should have an individualized plan
* Trial and error approach during medical management
* Start simple (laxative) and work up to more complex (Senna and cone enema)
* Surgery when medical management fails
IN CLOSING

At the end of a bowel management discussion, I often say to the parent, you have to titrate the medication until you find that “magic number” that’s right for your child. I know it’s frustrating and may make them feel …

...like they are chasing their tail!
I think he needs a bowel program!
This guy too....
I truly hope that I have said something today that you will remember and while you are caring for your patients at the bedside you will think, “hey, when was the last time my patient had a BM”. Please don’t let your patient lay in a hospital bed for 3, 5, or 7 days, and then realize there is now a new problem…CONSTIPATION!

Thank you for your time and attention!