Bowel Management,,, A way to control the colon and keep the patient continent and accident free

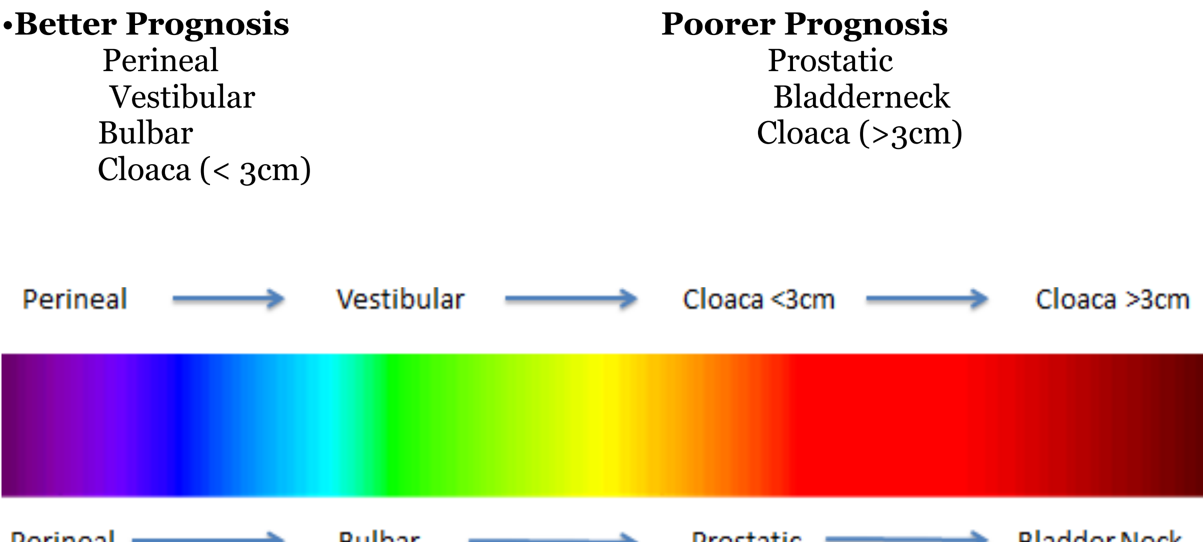
Patient Populations

- Anorectal Malformation
- Hirschsprung Disease
- Functional Constipation
- Spinal Abnormalities, Isolated Sacral Anomalies

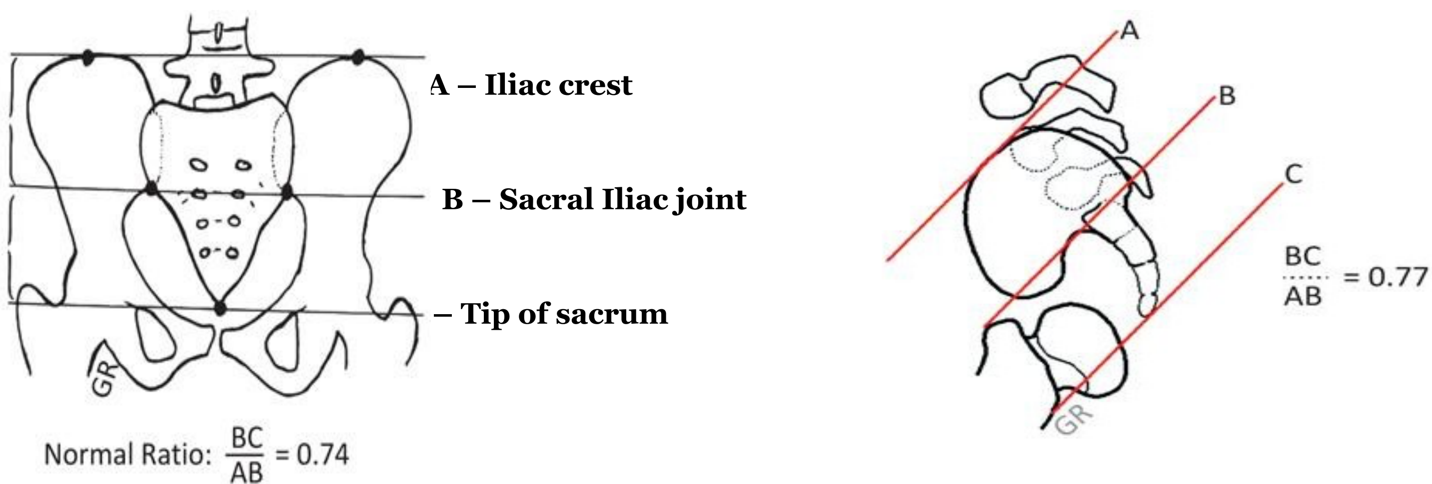
What is your patient's potential for bowel continence?

Predictors of Bowel Control ARM Type, Sacrum, Spine

•**Better Prognosis**	**Poorer Prognosis**
Perineal	Prostatic
Vestibular	Bladderneck
Bulbar	Cloaca (>3cm)
Cloaca (< 3cm)	



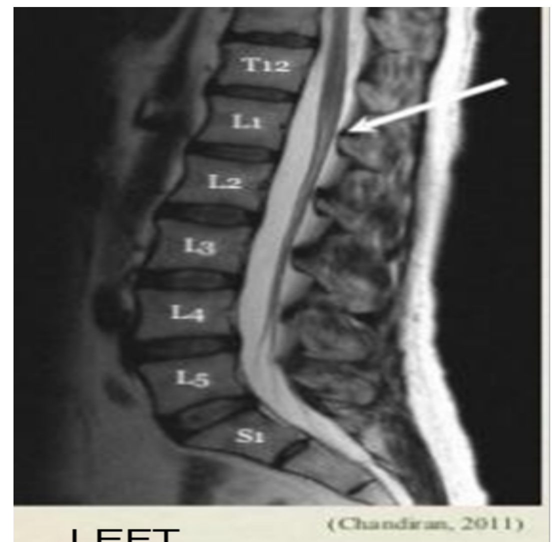
Predictors of Bowel Control ARM Type, Sacrum, Spine

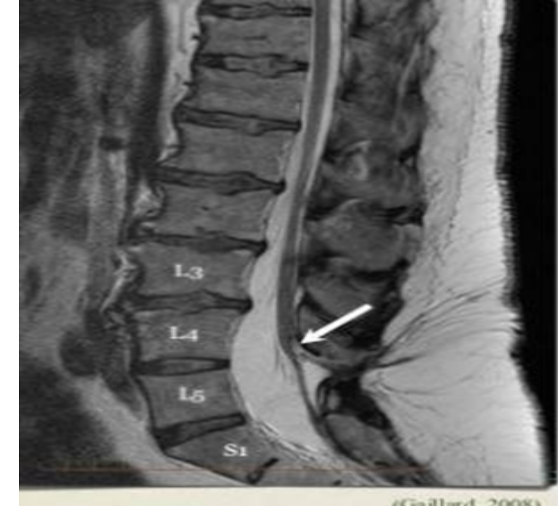


Sacral Ratio:

<0.4 = Poor   0.4 – 0.69 = Fair   ≥ 0.7 = Good

Predictors of Bowel ControlARM Type, Sacrum, Spine





			POINTS
ARM TYPE	Perineal Fistula	1	
	Rectal Stenosis	1	
	Rectal Atresia	1	
	Rectovestibular Fistula	1	
	Rectobulbar Fistula	1	
	Imperforate Anus without Fistula	1	
	Cloaca < 3 cm Common Channel	2	
	Rectoprostatic Fistula	2	
	Rectovaginal Fistula	2	
	Rectobladderneck Fistula	3	
	Cloaca > 3 cm Common Channel	3	
	Cloacal exstrophy	3	

SPINE	Normal termination of the Conus (L1-L2)	1	
	Normal filum appearance	1	
	Abnormally low termination of the Conus (below L3)	2	
	Abnormal fatty thickening of filum	2	
	Myelomeningocele	3	

SACRUM	Sacral Ratio = Greater than 0.7	1	
	Sacral Ratio = Between 0.4 and 0.69	2	
	Hemisacrum	2	
	Sacral Hemivertebrae	2	
	Presacral Mass	2	
	Sacral Ratio = Less than 0.4	3	

TOTAL POINTS

______

3-4 = Good Potential for Continence

5-6 = Fair Potential for Continence

7-9 = Poor Potential for Continence

12/7/17 MF

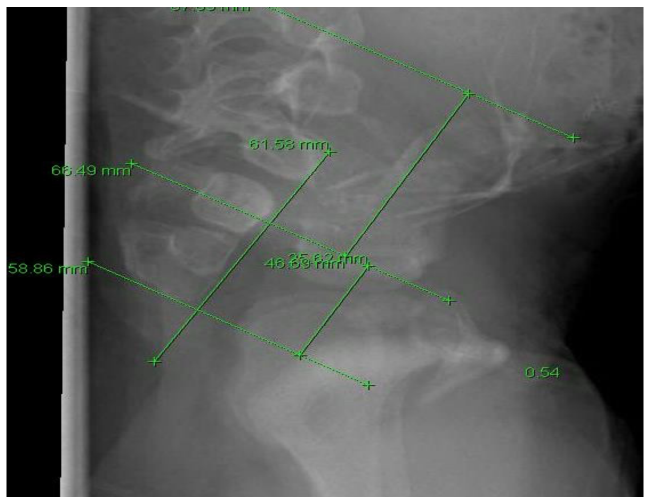
You care for a child with rectobulbar fistula. His conus terminates at L1 on Spinal MRI. What is the prediction for this child's continence?

A) Good potential for continence.

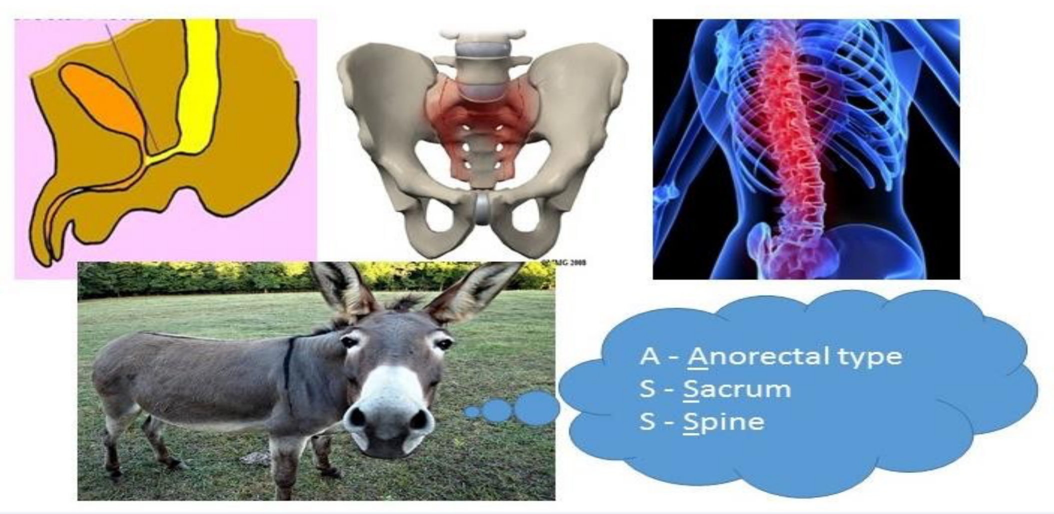
B) Poor potential for continence.

C) We do not know the potential for Continence for this child

Sacral Ratio = 0.54

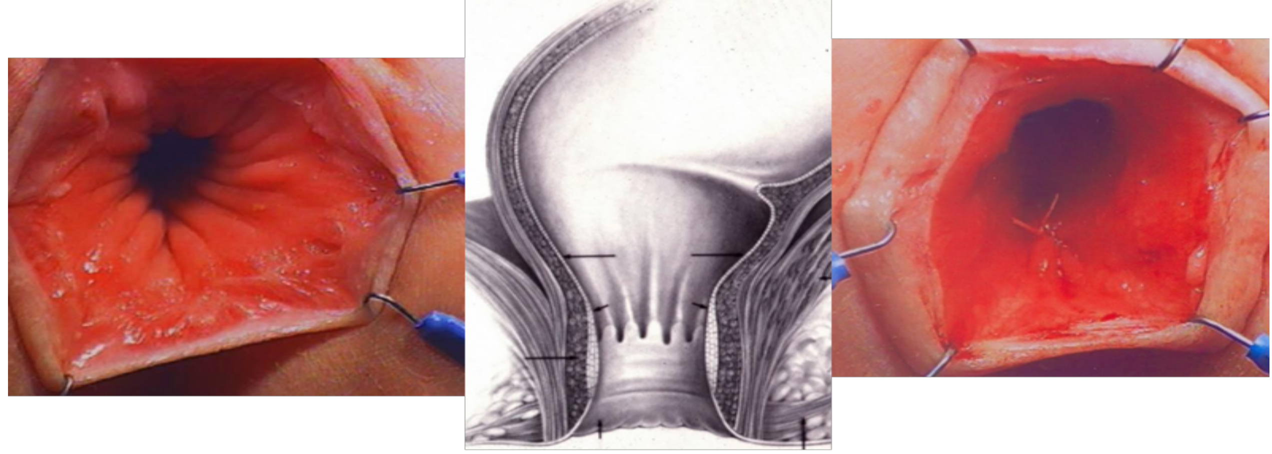


ARM Predictors of Bowel Control



Predictors of Bowel Control Hirschsprung Disease

- Dentate Line Intact Sphincters Colonic Motility



Predictors of Bowel Control

Functional constipation

- Normal anatomy   Colonic dilation   Colonic motility   Behavioral component

Predictors of Bowel Control

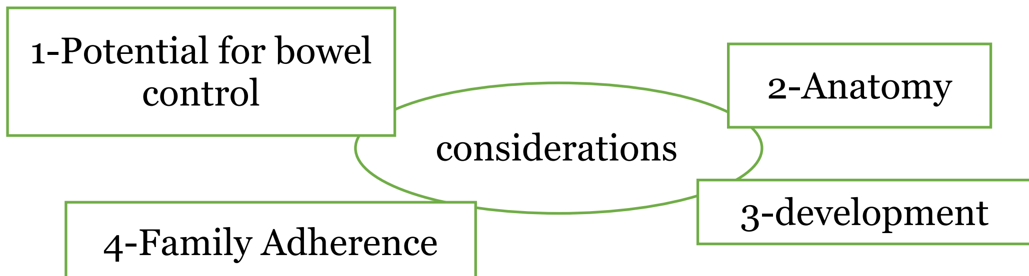
Spinal_Anomalies

- Nerve innervation   underdeveloped sphincters

Bowel Management Program

- Duration = One Week – "*BOOT CAMP*"
- Key Items
  - ✓ Testing
    - Contrast enema
    - Exam under anesthesia
  - ✓ Daily X-rays
  - ✓ Clinic Visits
  - ✓ Daily communication with team
- Educational lecture for parents
- Psychosocial support groups

Medication vs. Mechanical Bowel Management Regimen



MECHANICAL PROGRAM

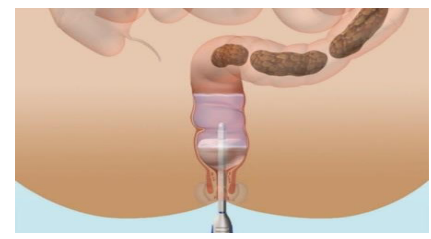
Mechanical Program (Enemas/Flushes)

- Mechanically and effectively clean colon
  - Rectal
  - Antegrade via malone or cecostomy
- Goal: No Bowel Movement beyond flush

- No soiling → Social continence → clean underwear!

Enema/Flush Administration

- Technique, technique, technique!
  - Give enema at the same time every day
  - Coude Catheter (antegrade)
  - 24 French Foley Catheter (rectal)
  - Infusion time = 5 -10 minutes
  - Dwell time (rectal) = 10 minutes
  - Sit time = 30 - 45 minutes



Enema/Flush Components

Saline	• This is the base solution • Starting dose = 20 mL/kg • 200 – 600 mL • Increase/decrease intervals of 50 mL
+ Glycerin	• Starting dose = 10 mL • Max dose = 30 mL • Increase/decrease intervals of 5-10 mL
+ Castile Soap/ Baby Shampoo	• Starting dose = 9 mL • Max dose = 27 mL • Increase/decrease intervals of 9 mL
+ Bisacodyl	• 10 mg/30 mL • Starting dose = 5 mg • Max dose • Increase/decrease intervals of 5 mg

Enema/Flush Strategies

- **Titration**
  - Flush needs to adequately empty the colon every day
  - If X-ray shows stool accumulation with/without soiling → Increase strength of flush.
    - 10 mL glycerin OR 9 mL castile soap
    - Consider base volume (Saline) adjustments
  - If X-ray shows clean colon but patient has soiling → Decrease strength of flush
  - If X-ray shows clean colon and patient is without soiling → Continue same regimen

Enema/Flush Strategies

- **Patient Comfort**

– Patient cramping → slow down infusion, warm solution, consider using baby soap as stimulant

– Patient with nausea/vomiting → slow down infusion, warm solution, consider changing stimulant, change timing of flush (allow 2 hours before/after meals)

– Complaints of gas → consider changing stimulant

MEDICATION PROGRAM

Medicine Goals

- Achieve 1-2 voluntary bowel movements daily

- Effective daily emptying of colon

- No soiling → Social continence → Clean underwear

Starting Laxative Therapy

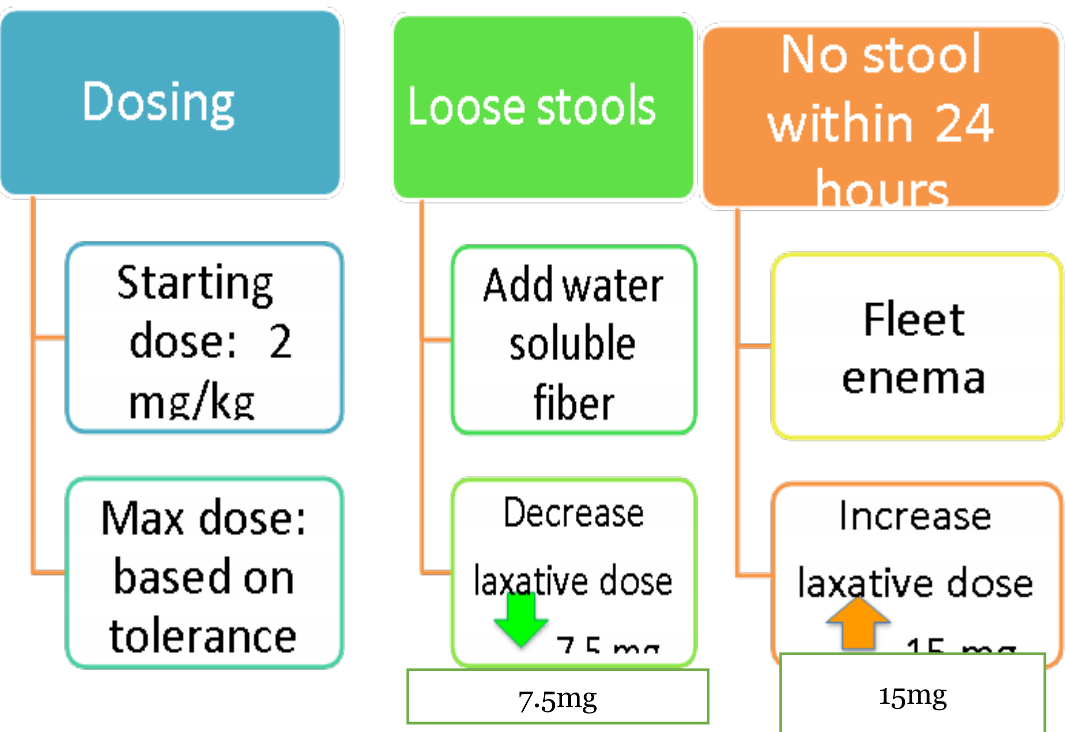
- Before starting check for fecal impaction on Xray!

Stimulant Laxative Dose

- Initial dose is based on patient history and assessment of diagnostic studies
- Do not give laxatives and large volume enemas at the same time
- Soiling can be due to overflow OR too much stimulation of the colon. Without an X-ray and patient report, it is difficult to make correct regimen adjustments.
- Trial and Error

Senna Based Laxative

Stimulant Laxative/Senna



Other Stimulant Products

Water Soluble Fiber

Water Soluble Fiber

Starting Dose : 2 grams BID

Titrate based on frequency and consistency

No maximum dose, (Exception: Nutrisource, 6 scoops max)

Citrucel, Metamucil, Pectin, Nutrisource

Fibers to Avoid (Insoluble)

Hypermotility Program

Constipating Diet + Water soluble fiber Fiber

↓

Loperimide

↓

Hyosycamine

↓

Cholestyramine

↓

Diphenoxylate (Lomotil)/Atropine

↓

Ileostomy

Nightly small volume enemas, No Stimulants

Counsult intestinal support team

Diet Modifications

- **Laxative foods**
  - Hypomotility patients   Move stool faster through colon
- **Constipation foods**

– Hypermotility patients   Slow the stool down   Those that have trouble getting in fiber

Keep diet the same during BMP week as patient eats at home

<u>**CASE STUDIES**</u>

Case 1: Hirschsprung Disease

- 4 yr old female with history of Hirschsprung Disease (recto- sigmoid), presenting for help with bowel management
- Medical History: Developmental delay, deaf, impaired vision
- Surgical History: Soave Pull through
- Stool: Bowel Movement every 3 days with Fleet enema. 2 enterocolitis episodes post pull through. No irrigations.
- Complains of vomiting, early satiety and Urinary Tract Infections

Evaluation

- Exam Under Anesthesia & Biopsy:

– Dentate line intact, sphincters intact

– No retained cuff

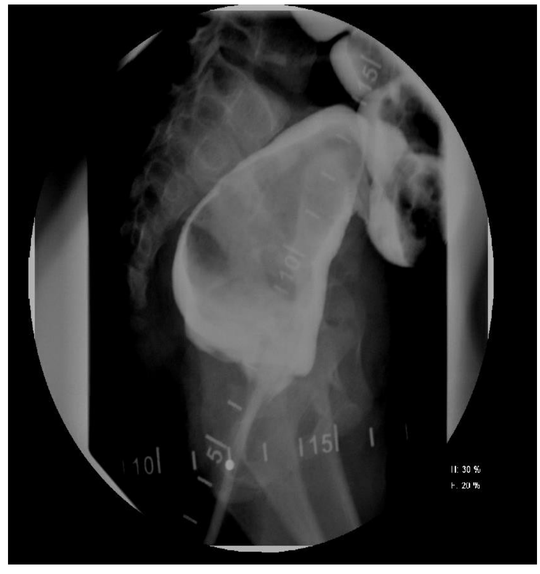
– Biopsy normal (ganglion cells, no hypertrophic nerves)

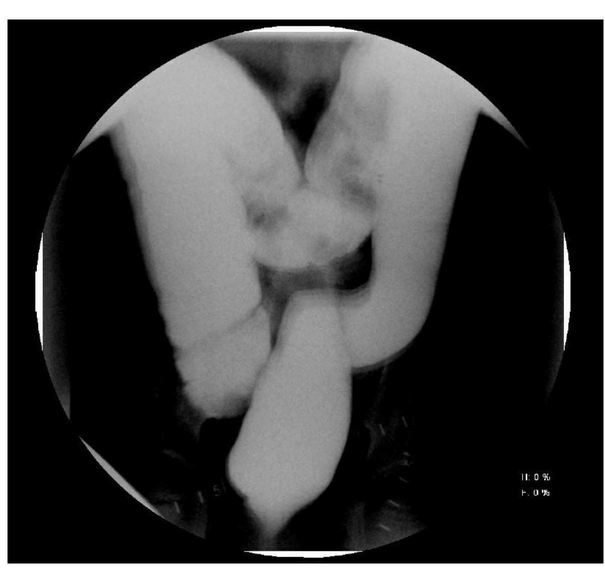
- Contrast Enema

– Distal dilation

Do you anticipate good potential for Bowel Control?

Contrast Enem

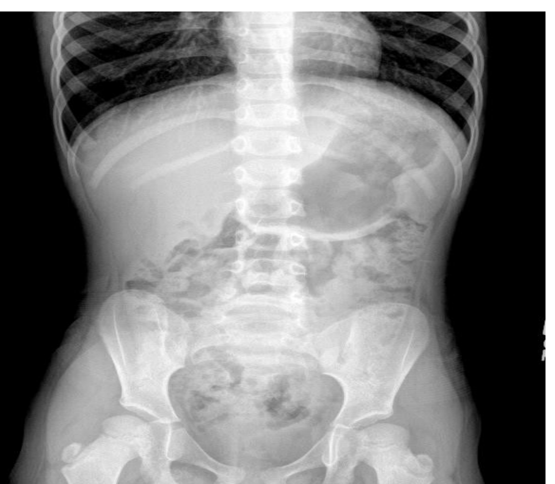




Therapy Plan

- Based on these results, what would your plan be for this patient?
  – Bowel Management with laxatives?
  – Bowel Management with Enemas? Ileostomy?

Bowel Management Week



- **Starting regimen**

400 mL saline

20 mL glycerin

- **Increased strength based on X-ray**
- **Ending regimen**

400 mL saline

↑30 mL glycerin

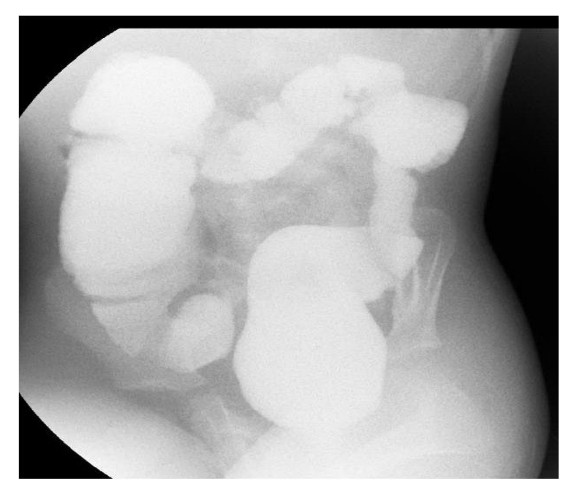
+ 27 mL castile

- **Tolerating enemas well**

Future Considerations

- What would your long term plan include for this patient?
  – Continue on rectal enemas
  – Move to laxatives Malone Botox as needed Ileostomy

__**Case 2 Anorectal Malformation**__



- 3 year old male, Unknown ARM
- Normal spine and sacrum
- Contrast Enema:

– No stenosis or obstruction

- Exam Under Anesthesia

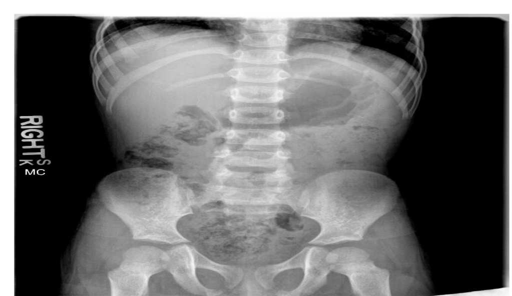
– Hegar size of anus: 16

– Position of anus: Well centered

– Anal stricture: No

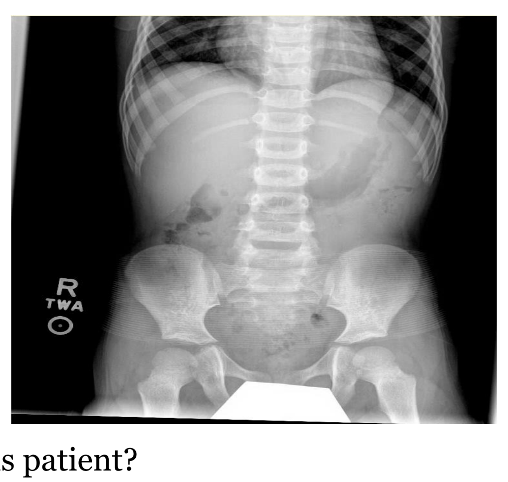
– Rectal prolapse: No

Bowel Management Week



- Seen in clinic on Day 1
- Moderate Stool Burden
- Regimen started:
  – 400ml Saline
  – 20ml Glycerin

Bowel Management Days 2 - 7



- Mild Stool Burden
- Patient had Accidents
- New regimen:
  - 400ml Saline
  - 30ml Glycerin

Future Considerations

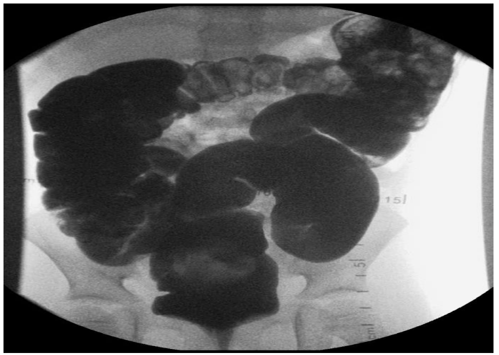
- What would your long term plan include for this patient?

1 Continue on rectal enemas Regimen changes as needed • + Castile/Baby Soap

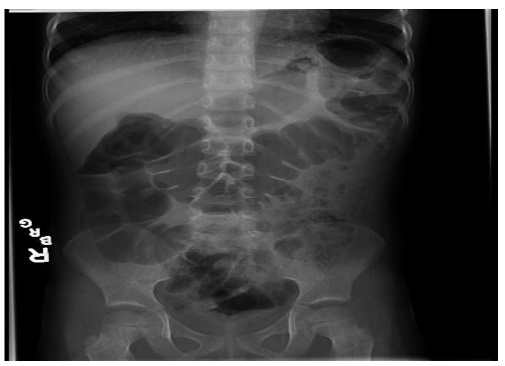
2.Laxative trial 3. Antegrade option

<u>Case 3 Functional Constipation</u>

- 4 year old, no surgical history, FC since birth
- Contrast Enema
  - Normal contrast enema (anatomy)
- Anal Manometry
  - Normal Rectoanal Inhibitory Reflex (RAIR)
  - HD Ruled out

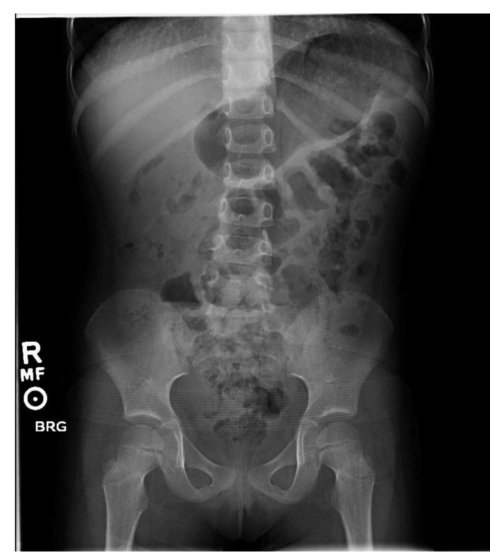


Bowel Management Week



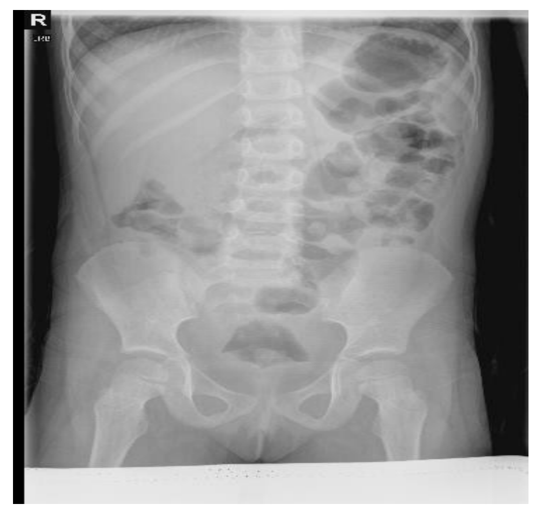
- Seen in clinic on Day 1
- Mild Stool Burden
- Regimen started:
  - Rectal Enema
- 400ml NS
- 20ml Glycerin

Bowel Management Days 2-4



- Moderate stool burden
- Patient had some streaking or smears
- Parents experienced difficulty administering enemas
- Continued regimen
  - 400ml Saline
  - 20ml Glycerin

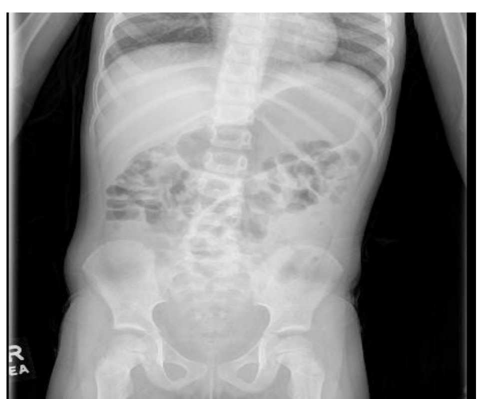
Bowel Management Day 5



- No Stool Burden
- No Accidents
- Parents report administration of enema improved
  – Child complaining of pain
- Regimen Changed to
  – 400ml Saline
  – 10ml Glycerin

– 9ml Castile

Bowel Management Days 6-8



- Mild Stool Burden
- No Accidents
- Pain on the “inside”
- Continued Regimen
  – 400ml Saline
  – 10ml Glycerin

– 9ml Baby soap

Follow up

- Parent’s report continued anxiety with enemas
- Patient transitioned to laxative therapy
- At follow up appointment Mom reported patient thriving, no accidents and “having our kid back”
- No exploration of surgical options needed