GI for ED/Hospitalist

Pearls and Pitfalls

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GI BLEEDING

- factitious bleeding
  medication food colour
  swallowed maternal blood in infants
  Foreign body
  Maunchausen

- Coagulopathy or thrombocytopenia does not present with GI bleeding

- diarrhea with blood vs blood
- hemorrhoids rare, fissures visible
Factitious GI Bleeding- FB

- 16 yr old autistic boy
- Hx sore throat
- Vomit/cough coffee grounds
- CXR ABDO Xray normal, Hb normal

- Admitted

- Coffee ground material heme test positive on urine dipstick on admission

- Coffee grounds Hemoccult negative
Maunchausen GI Bleeding

• Josephine
  – 15 yr old with GI bleed, hematemesis
  – No melena
  – Nl Hb
  – ? Witnessed by RN in hospital + blood on shower curtain

• Michelle
  – 13 yr old girl bronchoscopy and EGD x2 ; nl Hb
  – Coughing vs vomiting blood
  – ? Witnessed at school and cadets

Too heathy and happy “la belle indifference”
Approach to GI Bleeding

• SITE
  – Upper - melena
  – Mid – dark red/ purple
  – Lower GI bleed - more red

• AGE
  – Pathology relates to age of patient

• Endoscopy
  – Identifies majority
Upper GI Bleeding in Infants

• Swallowed maternal blood (at delivery or breast feeding)- APT test

• Peptic ulcer disease

• Arterio-venous malformation (skin lesion?)

• Other peptic eg esophagitis may cause heme positive stool, anemia irritability
Lower GI Bleeding in Infants

- Anal fissure
- Allergic colitis
- Arterio-venous malformation
- Duplication
- Meckel?
- Infection/ late NEC (patient will be sick, temp, septic etc)
Toddler’s and Older children
Upper GI Bleeding

• ENT bleed

• Peptic disease
• Mallory Weiss tear from vomiting
• AVM

• portal hypertension
Toddler’s and Older children Mid GI Bleeding

- Meckel diverticulum
- Duplication cyst
- Vascular abnormality
  - HHT
  - AVM
  - Blue rubber bleb nevus
Toddler’s and Older Low GI Bleeding

• Fissure

• Polyps

• Intussusception

• IBD

• Vascular abnormality
  – HHT
  – AVM
  – Vasculitis - HSP
CASE E.M.

- 6 yr old male
- Trisomy 18
- VSD
- Pulmonary Hypertension / Eisenmengers
- Recurrent dark red rectal bleeding, clots
- Admission Hb 3.4, MCV 81
- Anaesthetic risk
- EGD
- Colonoscopy
- Both negative
- VCE: video capsule endoscopy
Meckel

Rule of 2’s

Bleeding vs Obstruction

Meckel Scan  90+% bleeding

Bleeding requiring hospitalization/transfusion
100 Symptomatic Pediatric Meckel’s

100

74 male

1d-18yr (35% < 2yoa)

100

41

Obstruction

59

44  Bleeding

15  Diverticulitis
Meckel Obstruction
n=41

17 Intussusception
24 Non-Intussusception

53% 3mo-3 yr
10/12 failed enema
2/12 recurred

volvulus
int hernia
Meckel Non-Obstruction
n=59

44

Bleeding

32/44 transfused

[ Hb 84 ± 22 ]

97% Gastric

15

Diverticulitis

Perforation

41/44 + scan
Polyps

• commonest cause of colon bleeding in 2-7 yr

• benign hyperplastic or juvenile polyps

• Bleeding is intermittent, painless
• ‘Gush’ blood, clots every few months

• 25% of time > 1 polyp

• > 5 = juvenile polyposis coli

• Rare adenomas – FAP etc
16yr old girl

- Wisdom teeth extraction
- Poor po
- Px regular NSAIDS, 3 days prednisone
- 4 days later – pain, hematemesis, melena
- Hb 90
Peptic Disease

- Epigastric/cheast burning pain
- Worse on empty stomach/night
- Vomiting is common in children

- PPI
- Now what?
We live with acid

Cytoprotection
  mucous
  epithelium
  PG

Injury
  alcohol
  H. pylori
  NSAIDS
  bile acids
  increase acid
  caffeine
  smoking
H pylori

- Serum IgG (poor test)
- Stool IgA (very good test)
- Breath test urea → ammonia (great test)
- Gastric biopsy at EGD (good test)
Treatment

• PPI
  – *H pylori* 2 weeks 2 antibiotics PPI

• Stop NSAIDS, smoking, ETOH, caffeine

• Wean PPI
  – hypergastrinemia
17 yr hematemesis

- Stable, negative exam at ER
- Hb 99
- WBC 2.0
- Platelets 65,000
- Sent home on PPI to contact PMD
- Recurred, presented to hospital
Portal Hypertension

• If bleeding cannot be stopped (octreotide) a Blakemore tube can be used to tamponade bleeding temporarily

• For portal vein thrombosis, a Shunt (spleno-renal, meso-caval) can be performed

• A TIPS procedure can be used to bypass portal flow through the liver and reduce portal pressure.

• Cirrhotic child with variceal bleeding, transplantation will be considered to correct the underlying disease
Case: 2 yr old anemia

- 18 mo Fe deficiency anemia with FTT, prolonged breast feeding
- Hb 101  MCV 73  Plat 418
- Diet and iron tx

- 2yr Lower GI bleed
Case 2 Family History

21mo  3 yr  18 mo  9 yr
HHT
Hereditary Hemorrhagic Telangiectasia

• Formerly Osler-Weber-Rendu

• Autosomal dominant

• Incidence 1/5000-1/8000

• Diverse presentations
HHT
Hereditary Hemorrhagic Telangiectasia

- Dx criteria (Ouracac) 3 of 4:
  - First degree relative
  - Epistaxis-recurrent (>90%)
  - Muco-cutaneous Telangiectasia
  - Visceral telangiectasia/AVM
    - Pulmonary (>50%)
    - Cerebral (10%)
    - Liver
    - spinal
Case 15 yr old boy

- Vague abdominal pain
- Hb 109
- MCV 64.5 Plat 551
- Tx Iron supplement – No F/U
- Returns 2 yrs later RAP low energy
IBD

UC

• 90+ % diarrhea with blood
• Negative cultures
• Little systemic symptom

THROMBOCYTOSIS

Crohn

• 20% gross bleeding
• 75 % anemic
• Systemic symptoms
• Wt loss
• Delay puberty
• 85% RAP

• thrombocytosis
Take Home

• Varied causes of GI bleeding
  – Gross and occult
  – Age and character of bleeding is key

• Significant pathology may occur without other GI symptoms

• Search for occult blood loss
  – VCE
Vomiting

A symptom, not a disease
Vomiting

• Obstruction/Ileus
  – Surgical
  – Non Surgical
  – NOT constipation!!
• Hepatobiliary-pancreatic
• Mucosal peptic, HP, allergy, celiac
• Motility

• Non-GI
Non-GI Vomiting

CNS-migraine, structural
Renal-UPJ, RF, UTI, stones
Gen Gyn: pregnancy, torsion

ENT
Respiratory-asthma, pertussis
CVS – digoxin
Psychiatric-bulemia
Maunchausen
Ryan’s Story

- 13 yr positive PPD (BCG)
- CXR ?rib abnormality
- Scans and w/u ESR
- ?autoimmune osteomyelitis
- Rheum + GI w/u MRE EGD colon
- UGI
? SMA Syndrome

- SMA compresses duodenum over spine
- Relatively common after scoliosis Sx

- Tx: lay on stomach after eating
- Gain wt – NJ, TPN

- Beware of over calling this dx
  - Variant of nl in tall thin persons
  - Need bilious vomiting
Kirk

- 16 yr old
- Recurrent severe mid abdominal pain with profuse vomiting
- Lasts 2-3 days
- Well in between
- Had laparoscopic appendectomy, surgeon “ran bowel”
- Symptoms recurred... CT, EGD, colonoscopy
Acute Abdominal Pain in Chronic RAP Patients

- Case 1: AP Cyclic vomit 6 yr old 8am
- Case 2: Crohn colitis RLQ pain 5pm
- Case 3: Encopretic with diffuse pain, CT Friday afternoon
- Low threshold over phone to send in
- Keep an open mind
- No matter how difficult!
Foreign Body/Ingestions

- Caustics
- Coins
- Sharp objects
- Batteries
- Magnets
- Other!
Constipation does not cause abdominal pain

- Worse constipation patients have no pain
- Treating constipation does not improve pain
ABDO Pain ER

Xray
Rectal exam
Enema
Results
Discharge
Pediatrics 2013, VOLUME 131(6), 1098.

Race and Acute Abdominal Pain in a Pediatric Emergency Department
Caperell K, et al.

U of Pittsburg
eMR 10,000 ER visits, 6% for abdo pain 1-18yoa
Abdominal Pain (6%) Results

- Appendicitis 4.3 %
- Gastro 5.5%
- Constipation 19.3% 92% imaged
- Abdominal pain 25.8%
- UTI 3.2%
- Other 41.5%

Conclusions “abdominal pain was a frequently encountered chief complaint in the ER”
“constipation was the most common cause of abdominal pain in almost 20% of patients”
Constipation

• Common worry: missing Hirschsprungs

• Hirschsprungs infant does not typically pass meconium in first 48 hrs (without help)

• Functional constipation:
  – Normal early course-starts at toddler age
  – Dilated rectum-intermittent large stools
## Functional Constipation vs Hirschsprung’s

<table>
<thead>
<tr>
<th>Functional Constipation</th>
<th>Hirschsprung’s</th>
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</thead>
<tbody>
<tr>
<td><strong>Symptoms start at toddler age</strong></td>
<td><strong>Symptoms from birth/meconium</strong></td>
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<tr>
<td><strong>With-holding behaviour</strong></td>
<td><strong>Consistent distension</strong></td>
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<tr>
<td><strong>Normal growth</strong></td>
<td><strong>Poor growth</strong></td>
</tr>
<tr>
<td><strong>May soil</strong></td>
<td><strong>Do not soil</strong></td>
</tr>
<tr>
<td><strong>Appear well</strong></td>
<td><strong>May appear ill</strong></td>
</tr>
<tr>
<td><strong>Distended rectum</strong></td>
<td><strong>‘narrow’ rectum</strong></td>
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<tr>
<td><strong>Normal histology</strong></td>
<td><strong>No ganglion cells</strong></td>
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Functional Constipation

- typically at toilet training age
- with-holding behaviour ...fecal retention, dilatation of rectum
- many develop over-flow incontinence “encopresis”
- occasionally this causes factitious ‘diarrhea’
- evaluation: normal exam, not distended
- normal low back and deep tendon reflexes – spina bifida, tethered cord
- rectum dilated, full of stool
- X-rays not necessary
- vomiting is NOT a feature of functional constipation
- Significant pain is NOT a feature
Constipation: Treatment

• Fiber (Whole grain)

• Limit milk  4oz=2 oz yog =1 oz cheese

• Water!

• stool softener
  – Milk of magnesia
  – mineral oil
  – Px-lactulose
  – Polyethylene Glycol  PEG 3350  2-3 caps/d
Constipation: Treatment

if no better:
• Stool softener  PEG 3350 17 gm /cap  2-3 capfuls per day

plus
• Stimulant- senna products  Senekot

• Fecal Impaction, overflow

• fleet enemas 3-5 over 48 hrs
• large PEG doses Q2H  or admit for NG

• toilet sitting after meals to keep empty
Reasons for Treatment Failure

- Not following treatment
- Too little treatment
- Failure to clear lower colon
- Underlying disease

Rectal exam, low back, DTR
IBD Complications

• Colitis
  – Acute Flare
  – Toxic megacolon
  – Perforation ! on steroids !  Jack

• Crohn
  – Acute flare
  – Abscess/phlegmon
  – Fistulae

• Complications of therapy

• Maybe its NOT the IBD
Case 7 yr old with bloody diarrhea

- 1 week later saw PMD – looked pale and sick
- Bloody diarrhea 5-10 stools day, 3-5 night

- Seen in ED
  - Platelet count 900,000
  - Hb 6.2
  - Albumin 1.1