HIGH RISK EMERGENCY MEDICINE
PEDIATRIC ABDOMINAL PAIN

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Kids are different!

- Unique diseases!
- Different presentations!
- Parents and kids are poor historians
- Fear of “white coat”
- Sneak a peak!
Practical Tips!

- Get down at child’s level
- Distract with toys
- Use Mom
- Take off diaper
- Rectal exams not helpful
- Walk or bounce or “basketball jump”
- Observe over time
Case #1

- 3 week old, term infant with vomiting
- Bottle fed, Similac, 2 oz every 3 hours
- Vomiting with each feed x 2 days
- No fever, no ill contacts
- Stool 3 times per day, now none x 12+ hrs
- Urine output somewhat less
- HR 135, RR 50, temp 37.3C
- Sleeping, tachypneic
Abdominal Pain or Vomiting in Infants

- Pyloric Stenosis
- Lactose Intolerance
- Colic
- Hemolytic Uremic Syndrome
- Incarcerated hernia
- Intussusception
- Volvulus
- Sepsis
- Child Abuse
Bilious vomiting in young infants

- Malrotation / volvulus
- Incarcerated hernia
- Congenital adrenal hyperplasia
- Intestinal hematomas
- Necrotizing enterocolitis
- Duodenal atresia
- Small left colon syndrome
- Hirschsprung’s disease
Volvulus

- Congenital malrotation of the midgut - not “fixed down” at the mesentary
- At risk for volvulus ➔ ischemia, necrosis
- Abd pain, BILIOUS vomit
- Grunting, pale
- Blue or distended abd
- Jaundice, hematochezie
- BILIOUS = WORRY!
  - “Green for danger!”
Volvulus

“Double-bubble Sign”

“corkscrew”
Volvulus

- Treatment
  - Rehydrate aggressively
  - Antibiotics - Amp, Clinda, Gent
  - Operating room ASAP !!
Reading kids films...

- **Ileus**
  - "bag of popcorn"

- **SBO**
  - "bag of sausages"
What is #1 cause of pediatric abdominal pain?
Case #2

- 2 year old with one day history of abdominal pain
- No fever, vomiting x 3, non-bilious
- No diarrhea and no ill contacts
- Went to clinic, had syncopal episode
- Quiet on gurney
- HR 120, RR 24, temp 37.6C
- Abdomen soft, guards right side
Older Kids and Vomiting ???

- Consider
  - Pyelonephritis
  - Inborn Errors
  - Incarcerated hernia
  - Appendicitis
  - Intussusception
  - Volvulus
  - Head trauma
  - Meningitis
  - Brain tumor
Red Flags

- Abdominal pain, fever and just vomiting
  - UTI
- Abdominal pain and vomiting and dry for 1+ days
  - DKA
- Abdominal Pain and syncope
  - Intussusception
Intussusception

- 3mo - 5yr old, peaks 6-11mo
- Idiopathic in young infants
- Older kids, >5yo – e.g. Meckel’s or polyp
- Ileo-colic most common
Intussusception

- Signs
  - Abdominal pain 50-90%        vomiting 63-90%
  - bloody stools 21-60%            classic triad 20-40%
- Colicky pain 4-5 minutes, then abates for 10-15 min
  - Truly irritable afebrile infant
- Lethargy, pallor or syncope
  - unresponsive OR wakes up then sleepy
- Elongated mass RUQ
- no BS in RLQ – Dance’s sign
- “pain out of proportion to exam”
**Intussusception**

- Soft tissue mass RUQ
- Distended loop
- Distended transverse colon
- “Absent Liver Edge” sign
Intussusception

“Target” sign

“Crescent” sign
Intussusception

- Barium enema is still the gold standard
- Air enemas becoming more popular
  - less radiation, cheaper
  - easier and more success
  - less risky if perforation occurs
- Contraindication to enemas
  - peritonitis or perforation
  - sepsis or shock
- Admit after reduction
Gastroenteritis

- Vomiting usually first
- Low-grade fever
- Mild diffuse abdominal tenderness
- Electrolytes – bicarb not correlated
  - AMS, mod - severe dehydration, prolonged symptoms, less than 6 months old, ??history
- UA- r/o UTI, inborn error
AGE and Oral Rehydration

- Recommended for mild-mod dehydration
- Low failure, parents like, IV not quick
- 50-100 cc/kg oral rehydration
  - 10cc/kg for diarrhea, 2cc/kg emesis
- Avoid juices
- If vomiting, 5-15cc every 2min
- Breast feed shorter and more often
- Popsicles
- NG tube
AGE and IV Hydration

- Indicated if refusing to take PO’s or continuous vomiting?
- Some advocate glucose with first bolus to stop catabolism – D5NS
- Many agree minimum 40cc/kg
  - Corrects 4% dehydration
- Normal saline = Holy Water!!
Anti-Emetics

- More at risk for sedation and dystonia
- But cruel to allow child to continue to vomit
- Ondansetron Acad Emerg Med 2001
  - RCT, 145 kids, 6mo-12y, 5x/24hr
  - Ondansetron (Zofran) or placebo
  - Less vomit, less IVF, fewer admits

- ACEP Peds Committee 2008
- Pediatrics and Annals Emerg Med 2002
- Freedman NEJM 2006
- Stork Acad Emerg Med Oct 2006
A Few Facts on Appy’s and Kids

- WBC’s are neither sensitive nor specific
  - Williams Emerg Med J 2002
  - Stefanutti J Peds Surgery 2007

- Rectal exams do not make the diagnosis
  - Scholar Clinical Peds 1998

- Pain meds do not delay the diagnosis
  - Bailey Annals Emerg Med 2007

- Ultrasound should be first line imaging
  - Orr Acad Emerg Med 1995
  - Williams Emerg Med J 2001
  - Peletti Pediatric Radiology 2006
Abd Pain and Follow-Up

- Good discharge instructions are key!

- Revisit for abdominal check!
Take Home Points

- Make friends with the child
- Observe over time
- Bilious vomiting in neonates – BAD!
- Increase fiber in kids’ diets
- Gastroenteritis - labs NO but oral rehydration YES; NG tube!
- UTZ or CT for equivocal appy cases
- Pain then lethargy = intussusception?