Chronic Abdominal Pain of childhood & Adolescence

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Chronic Abdominal Pain | Background

- At least 3 pain episodes (long-lasting intermittent or constant) over at least 3 months interfering with routine function.
- Common (15-46% of school-age children)*
- FEMALE PREDOMINANCE (F to M ratio is 1.3:1)
- Challenging and stressful (patients, families and healthcare providers)

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Chronic Abdominal Pain | Background

- Classifications:
  - Functional abdominal pain (FAP)
    - **Non-organic**
    - **More common**
  - Abdominal pain attributable to organic disease
    - **Inflammatory, anatomic, metabolic, or neoplastic processes**
    - **Less common 33%***

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Chronic Abdominal Pain | Evaluation

- Ask patient to indicate the location of the pain*
- Quality, intensity, duration and timing of the pain
- How the child climbs onto and down from the exam table
- Review growth chart
- Digital Rectal Exam?
- Labs and Imaging should be individualized
  - Recommended studies: CBC w/diff, LFTs, ESR, Stool O+P, and UA w/Cx
  - If indicated, Lactose Breath test and Abd US

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Chronic Abdominal Pain | Evaluation

Alarm features suggestive of organic etiology

History:
- Age < 5 y
- RUQ/RLQ pain
- Pain radiating to the back/shoulders
- Unintentional weight loss
- Fever
- Recurrent oral ulcers
- Joint symptoms
- Vomiting/diarrhea
- Dysphagia
- Nocturnal symptoms
- Dysuria, hematuria, flank pain
- FHx of IBD, PUD, Celiac
- Blood in stool

Physical Examination:
- Pallor, Jaundice, scleral icterus
- Growth deceleration, Delayed puberty
- Perianal abnormalities (tags, fissures)
- Tenderness, guarding
- Localized fullness or mass effect
- Hepatomegaly, splenomegaly

Laboratory studies:
- Anemia
- Hypoalbuminemia
- Elevated WBC or ESR
- Blood in stool

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Functional Abdominal Pain (FAP)

- The most common cause of chronic abdominal pain
- No evidence of a pathologic condition (anatomic, metabolic, infectious, inflammatory or neoplastic disorder)
- Pathophysiology:*
  - Dysregulation in the communication of the enteric nervous system (brain-gut axis) *
  - Visceral hyperalgesia (decreased threshold for pain in response to intraluminal changes)

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FAP | Diagnosis

- A specific diagnosis*
- Clinical diagnosis
- Diagnostic Criteria (4 main Categories):
  - **Functional dyspepsia:** discomfort in the upper abdomen
  - **IBS:** pain associated with alteration in BMs.
  - **Abdominal migraine:** pain with features of migraine (paroxysmal pain associated with anorexia, nausea, vomiting or pallor)
  - **Functional abdominal pain syndrome:** pain without the characteristics of dyspepsia, IBS, or abdominal migraine.

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FAP | Treatment

- Reassurance and education
  - **Eliminate fear of unknown**
  - **Validate that symptoms are real, but not dangerous**
  - **Return to school and regular activities**
- Psychological approach
- Dietary treatment
- Pharmacologic therapy (evidence is not strong)

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FAP | Psychotherapy

- Biofeedback
- Relaxation
- Family therapy
- Hypnotherapy
- Cognitive behavioral therapy

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FAP | Dietary Treatment

- Low-FODMAP Diet
  - Fermentable Oligosaccharides, Disaccharides, Monosaccharides, And Polyols
  - Poor absorption and rapid fermentation
- Peppermint Oil
- Probiotics
- Fiber (supplement or low fiber)
- Elimination
  - Lactose-free diet
  - Gluten-free diet

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FAP | Pharmacologic Treatment

- SSRI and TCA
  - Amitriptyline (Elavil)
  - EKG prior to TCA to evaluate for long-QT syndrome)
- Prokinetics
  - EES (Eryped)
  - Metoclopramide (Reglan)
- Anti-acid med
  - H2-blockers
  - PPI
- Anticholinergic
  - Dicyclomine (Bentyl), Hyoscyamine (Levsin)
  - Cyproheptadine (Periactin)

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FAP | Pharmacologic Treatment

Specific Treatment for Abdominal Migraine

- Abortive
  - Ondansetrone (Zofran)
  - Sumatriptan (Imitrex)
- Prophylactic
  - Amitryptline (Elavil)
  - Cyproheptadine (Periactin)
  - Propranolol
  - Phenobarbital

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Chronic Abdominal Pain | Organic Etiologies

Acid peptic disease

- Gastric/duodenal ulcers, gastritis/duodenitis and GERD
- Epigastric pain, post-prandial/early in the morning
- Pain is atypical in children < 12 years
- Underlying etiologies (burn injuries, head trauma, NSAIDs, H. pylori)
- UGI unreliable
- H. pylori IgG has low sensitivity & specificity (45%-50%) – not recommended
- UBT and Stool H. pylori Ag have high sensitivity & specificity (> 95%)*
- Endoscopy is the procedure of choice

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Chronic Abdominal Pain | Organic Etiologies

Carbohydrate Intolerance

- Malbsorbed carbohydrates → fermentation in the colon → By-products (hydrogen, CO_2, acetate, butyrate)
- Abdominal cramping, bloating, diarrhea and excessive flatulence
- Lactose intolerance is the most common
  - Association with lactose consumption is a poor predictor
- Fructose and sorbitol comes second
  - Apples and pears
  - Sugar-free gums
- Breath hydrogen test is the least invasive test

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Chronic Abdominal Pain | Organic Etiologies

Celiac Disease

- Autoimmune disorder of the SB caused by exposure to gluten in genetically susceptible individuals
- Diarrhea, iron-def anemia, bloating, and FTT
- Gliadin IgG/IgA has low positive productive value
- Serologic test (tTG IgA) – Check IgA Level*
- Upper Endoscopy with biopsy remains gold standard

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Chronic Abdominal Pain | Organic Etiologies

Inflammatory Bowel Disease

- Incidence has doubled over the past decade
- Chronic abdominal pain, hematochezia, diarrhea, weight loss
- Anemia, elevated ESR, thrombocytosis, hypoalbuminemia
- Elevated fecal calprotectin
- ASCA and pANCA have low sensitivity but high specificity
- Endoscopy and capsule endoscopy (pillcam)

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Chronic Abdominal Pain | Organic Etiologies

Intestinal Parasites

- Giardiasis (infection of the SB)
  - Following ingestions of fresh water contaminated with the cysts
  - Chronic abd pain, nausea, flatulence, diarrhea and weight loss
  - Stool test (cysts/trophozoites)
  - Stool Giardia Ag (more sensitive)
- Ascaris (roundworm) and Trichuris trichura (whipworm)
  - Chronic abd pain, anorexia, diarrhea and rectal prolapse
  - Stool O+P

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Chronic Abdominal Pain | Organic Etiologies

Chronic Constipation

- Common cause of recurrent abdominal pain
- Colonic distention, gas formation, and painful defecation
- Associated with voluntary withholding → fecal soiling
- Abdominal X-Ray could be helpful*

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Chronic Abdominal Pain | Organic Etiologies

Eosinophilic Esophagitis

- Eosinophilic infiltration of the esophagus due to allergic cause
- Epigastric pain, nausea, vomiting, FTT, dysphagia and food impaction
- Hx of food/environmental allergies, peripheral eosinophilia
- Upper Endoscopy with biopsies

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Chronic Abdominal Pain | Organic Etiologies

Congenital Anomallies

- Intestinal malrotation
  - 1/6000 live birth incidence
  - 90% present within 1st year of life.
  - Chronic transient postprandial abdominal pain with/without vomiting
  - Upper GI study

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Chronic Abdominal Pain | Organic Etiologies

Biliary Dyskinesia

- Decreased contractility and poor emptying of the gallbladder
- RUQ/epigastric pain, nausea, vomiting and fatty food intolerance
- Abd US is typically normal
- HIDA scan (Scintigraphy) with IV cholecystokinin (ejection fraction)

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Chronic Abdominal Pain | Organic Etiologies

Genitourinary Disorders

- Uretropelvic junction (UPJ)
  - Recurrent abdominal pain could be the only complaint
  - Palpation of abdominal mass (left or right midline), hematuria
  - Normal UA and PE do not exclude GU abnormality
  - Renal Ultrasound
- Nephrolithiasis
  - Recurrent abdominal pain (most common presenting symptom – 51%)
  - Dysuria (13%) and hematuria (26%)

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