Unusual Causes of Chronic or Recurrent Abdominal Pain

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Disclosure Statement

• I have no affiliations with any pharmaceutical or instrument companies.

• I own no pharmaceutical stocks related to this talk.
Pain

- Pain: “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.”

- Nociceptors: pain receptors with high thresholds to mechanical or thermal stimuli, small receptive fields and persistent discharges for suprathreshold stimuli
Abdominal pain

- **1. Foregut**: liver, stomach & duodenum
- **2. Midgut**: small intestine and right colon
- **3. Hindgut**: colon and GU system
Pain

- Afferent nerve fibers
  - A delta
    - 25% of nociceptors
    - 3-4 microns in diameter
    - skin/muscle
    - mediate sharp, sudden, well localized pain that follows acute injury
Pain

- Afferent nerve fibers, cont
  - C
    - 50% of nociceptors
    - 0.3-3 microns in diameter
    - periosteum, parietal peritoneum and viscera
    - intraperitoneal abdominal pain
    - dull, sickening, poorly localized
    - gradual onset; longer duration
Recurrent Abdominal Pain
Abdominal Wall Pain

- Recurrent abdominal pain
- Localized to same spot (one finger)
- Pain increased by straight leg raising or sitting up (Carnett’s sign)
Recurrent Abdominal Pain
Abdominal Wall Pain

• Possible causes
  – Abdominal cutaneous nerve entrapment syndrome (ACNES)
  – Prior surgical scars (laparoscopy)
  – Hernias
  – Other defects
  – “Post-cholecystectomy” syndrome
Recurrent Abdominal Pain

Abdominal cutaneous nerve entrapment

- Most common cause of abdominal wall pain
- Pain increased by tight clothing, obesity, eating
- Standing, lifting, walking, stretching laughing, coughing, sneezing may aggravate
- Nausea, bloating, overeating, menstruation may aggravate
- Relieved by sitting, lying, or hand-splinting
Recurrent Abdominal Pain
Abdominal cutaneous nerve entrapment

- Intercostal nerves: $T_7-T_{12}$
- Separated from artery and vein by fat plug
- $90^\circ$ angle, enter a fibrous sheath
- Lateral border of rectus abdominis m.
- At aponeurosis again divides and turns $90^\circ$
- Fat may protect structures, allowing sliding
- Pain may be caused by pressure or scar formation
Recurrent Abdominal Pain
Abdominal cutaneous nerve entrapment

• Physical exam
  – Pain localized with tip of one finger
  – Small defect in the abdominal wall at site of pain
  – **Carnett’s sign** +
    • Straight leg raising
    • Sitting up
  – **My sign**: should be able to find defect with examiner’s eyes closed
Recurrent Abdominal Pain
Abdominal cutaneous nerve entrapment

• **Treatment**
  – Injection of area
• **Local anesthesia**
  – Lidocaine (1-2 mL 1%)
  – Steroids: (Triamcinolone 40 mg/ml) 1 mL
  – Longer acting “caines”
Recurrent Abdominal Pain
Abdominal cutaneous nerve entrapment

• Technique
  – Needle: 22-25 gauge, 1 ½-3 inches
  – Mix
    • 1 mL 1% Xylocaine
    • 1 mL (40 mg) Triamcinolone
  – Inject
    • Trigger point
    • Surrounding area
Recurrent Abdominal Pain
Abdominal cutaneous nerve entrapment

• Treatment, cont
  – Repeat injection
    • 30% of patients
    • Days to months later
  – Neurolysis
    • Pain clinic
    • 5-6% phenol
    • Absolute alcohol
Recurrent Abdominal Pain
Abdominal cutaneous nerve entrapment

• Failure of injection technique
  – Faulty localization of anesthesia
  – Incorrect diagnosis
• Radicular pain coming from elsewhere

• Srinivasan R and Greenbaum DS Am J Gastro 2002;97:824-830
Recurrent Abdominal Pain

Surgical scars

- Palpate all surgical scars carefully
  - Laparoscopy scars
- Pain often reproducible at site of small defect
- Corner of incision may be most common location
- Should be able to return to area with eyes closed
Recurrent Abdominal Pain

Hernias

- **Epigastric hernia**
  - Midline, excluding umbilical; may be multiple
  - Tag of omentum herniates through linea alba
  - Usually obese
  - Pain may increase on reclining
  - Small subcutaneous mass may be palpable in linea alba
  - **Treatment:** simple closure
Recurrent Abdominal Pain

Hernias

- **Spigelian hernia**
  - protrusion through Spigelian fascia (that area of the transversus abdominis aponeurosis lateral to the edge of the rectus sheath but medial to the Spigelian line)
  - High incidence of incarceration/strangulation
  - **Px**: rare to feel mass; may feel defect
  - **Dx**: Ultrasound/MRI may be helpful
Abdominal pain
Macroamylasemia

- Amylase macromolecule or amylase/IgA complexes
- Not filtered by kidney
- Elevated amylase may be a red herring in patients with recurrent abdominal pain
  - Lab send out for macroamylase
- Level may vary over time, but usually always elevated
Recurrent Abdominal Pain

Patient 1

- 30 yr old man with a 5-year history of recurrent vomiting about once a month
- Episodes last from 3-10 days
- Denies marijuana use
- Dehydration requiring IV fluids
- No evidence for GI obstruction, GU obstruction, uremia or CNS disease
- Asymptomatic at other times
Please take 60 seconds to discuss this case with your neighbors
Recurrent Abdominal Pain
Cyclic vomiting syndrome (Adults)

- Age: 37 years (14-73 years)
- Average episode length: 6 days (1-21 days)
- Symptom-free interval: 3.1 months (0.5-6 months)
- Nausea, vomiting, abdominal pain, headache, low-grade fever, diarrhea
- <1/3 report a prodrome or inciting event
- May be a *forme-fruste* of abdominal migraine
- May have strong personal or family history of migraine
Recurrent Abdominal Pain
Cyclic vomiting syndrome (Adults)

- **Treatment**
  - **During episodes**
    - IV fluids
    - Antiemetics
    - Sleep
  - **Prophylaxis (no controls)**
    - Propanolol (10 mg bid-qid) or 80 mg LA
    - Tricyclics at bedtime (low dose)
    - Cyproheptadine (~0.3 mg/Kg)
      » Prakash and Clouse, Am J Gastro 1999;94:2855-2960
Recurrent Abdominal Pain
Cyclic vomiting syndrome (Adults)

Other Causes:

- **Mitochondrial disorders** of fatty acid oxidation (eg, medium-chain acyl coenzyme A dehydrogenase deficiency)
- **Respiratory chain defects** (eg, MELAS: Mitochondrial Encephalomyopathy, Lactic Acidosis, and Stroke-like Syndrome),
- **Mitochondrial DNA deletions**

- can be associated with episodes of metabolic crisis and vomiting, usually with infection or prolonged fasting
Recurrent Abdominal Pain
Cyclic vomiting syndrome (Adults)

- **Other Causes:**
- 50% CVS pts have evidence for maternal inheritance of a mitochondrial DNA sequence variation
- Mothers of patients with cyclic vomiting syndrome were more likely to have a history of migraine, depression, irritable bowel syndrome, and hypothyroidism,
- Response to CoQ-10 and l-carnitine supports the above theory
Cyclic vomiting syndrome

- Cyclic Vomiting Syndrome Association of USA and Canada
  - Provides support, information and latest medical research about CVS, abdominal migraine, nausea, vomiting, and the International CVS Center
  - [http://www.cvsonline.org/](http://www.cvsonline.org/)
Cyclic vomiting syndrome

Cyclic vomiting syndrome

Adult working group scheduled to start work on an adult guideline in 2015
Cyclic vomiting syndrome
Cannabis hyperemesis syndrome

- Cannabis users’ symptoms simulate CVS
  - male race
  - lower income
  - living in a Western culture
  - separated, divorced, or widowed
  - Some may have daily symptoms, mostly nausea
- Exposure
  - at least 18 months
  - Most > 16 years
  - Daily; often >3-5 times per day
Cyclic vomiting syndrome
Cannabis hyperemesis syndrome

- Many get relief from hot showers/hot tubs
  - temperature-dependent, fast acting, but short-lived
- Treatment
  - Hot Bath/shower: temporary relief
  - Remove cannabis before trying CVS treatment
    - 1-2 weeks
    - 3-6 months
  - SX recur when cannabis restarted
Cyclic vomiting syndrome
Cannabis hyperemesis syndrome

Abdominal pain
Unusual causes

• Abdominal wall pain (ACNES)
• Cyclic vomiting syndrome
• Cannabis hyperemesis syndrome

• Costochondritis and Xyphoidynia