

# **Unusual Causes of Chronic or Recurrent Abdominal Pain**

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# Disclosure Statement

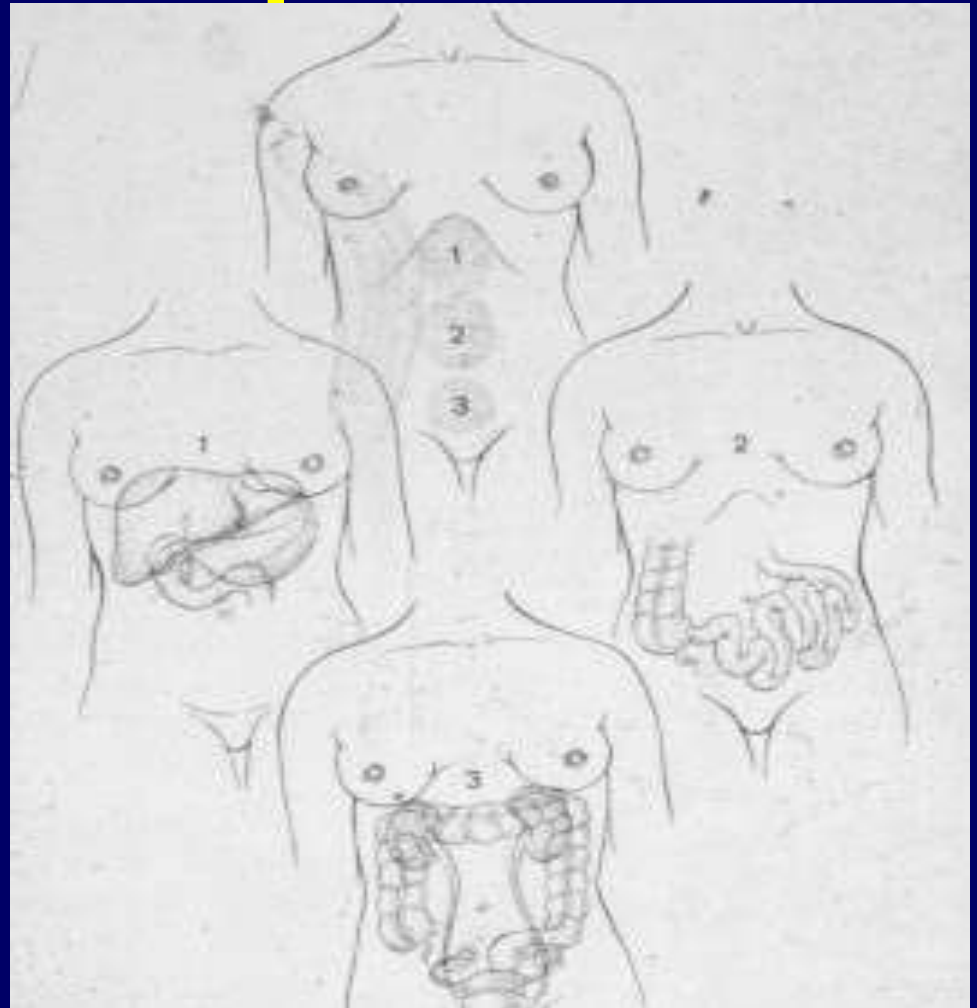
- **I have no affiliations with any pharmaceutical or instrument companies.**
- **I own no pharmaceutical stocks related to this talk.**

# 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**

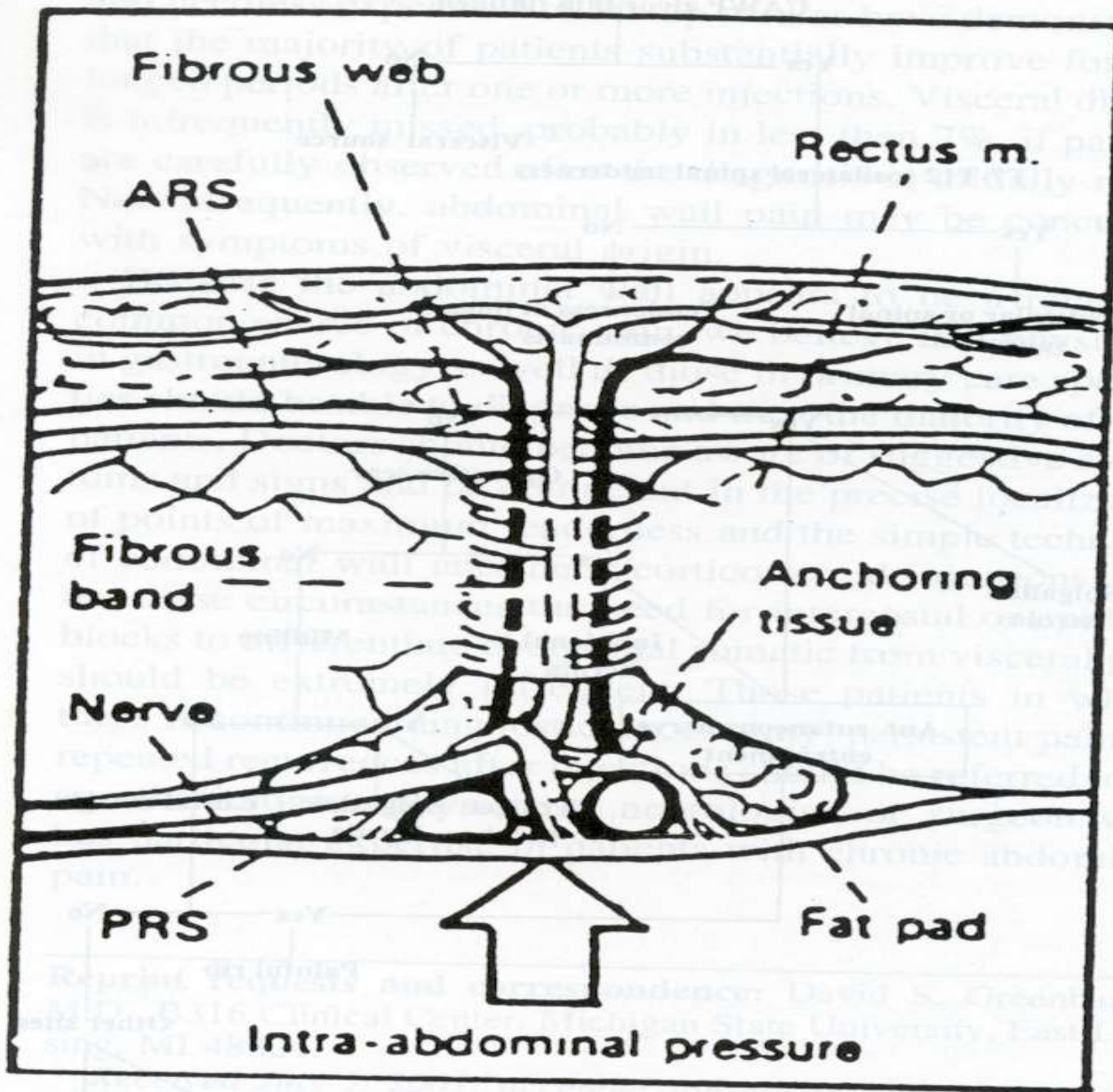
## **Abdominal cutaneous nerve entrapment**

- **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<sub>7</sub>-T<sub>12</sub>**
- **Separated from artery and vein by fat plug**
- **90° angle, enter a fibrous sheath**
- **Lateral border of rectus abdominis m.**
- **At aponeurosis again divides and turns 90°**
- **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)**
    - **Propranolol (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/>**

# **Cyclic vomiting syndrome**

**Li BUK et al. North American Society  
for Pediatric Gastroenterology,  
Hepatology, and Nutrition  
consensus statement on the  
diagnosis and treatment of CVS.  
J Pediatr Gastroenter Nutrition 2008;  
47:379-93.**

# **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**

- **Galli J et al. Cannabinoid Hyperemesis Syndrome. Curr Drug Abuse Rev 2011; 4:241-249**

# **Abdominal pain**

## **Unusual causes**

- **Abdominal wall pain (ACNES)**
- **Cyclic vomiting syndrome**
- **Cannabis hyperemesis syndrome**
  
- **Costochondritis and Xyphoidynia**