



*Figuring it out...  
Chronic Abdominal Pain!*

Operating room or grocery store?





Jerry Simons, MPAS, PA-C



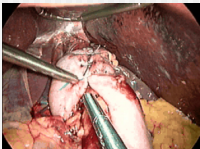
2020 virtual CME

THANK YOU  
COVID 19 responders!

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- **Gerald T. Simons, DFAAPA, PA-C**
- Surgical PA, private practice
- Stony Brook PA Program, Asst Professor
- BOD & Suture/Wound Care Instructor/Coordinator AASPA
- **Nothing to disclose.**



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### Outline

- 1. Common presentation of chronic abdominal pain. Briefly compare and contrast acute, functional, and chronic abdominal pain.
- 2. Review essentials of the initial history and PE
  - a. Present classic presentation of major problems by abdominal topography compared to symptom.
- 3. Discuss common etiologies of chronic pain in the abdominal including hepatic, biliary, gastric, intestinal/inflammatory, vascular, GU, GYN and musculoskeletal complaints.
- 4. Understand the work-up of chronic abdominal pain including serologic testing and imaging.
- 5. Difficult cases with persistent abdominal pain: diabetics, autoimmune diseases, IBS/IBD, etc.

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### Outline

- 6. Discuss the role of SIBO, candida, IgA deficiency, and food allergies.
- 7. Prescribing a diet: what does the evidence say works?
- 9. Key point review: what to bring home with you

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1. After diet modification, the most affordable GERD tx for an uninsured patient is \_\_\_\_\_

- A. Omeprazole
- B. Baking Soda
- C. Rifamixin
- D. NOTES fundoplication



Pre-test

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2. The test that is most useful in assessing for an organic cause of chronic abdominal pain is...

- A. CBC with differential
- B. UA
- C. LFT
- D. C-reactive protein



Pre-test

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3. Patients with non-pathologic causes of chronic abdominal pain typically report pain near the \_\_\_\_\_

- A. Flanks
- B. Umbilicus
- C. RUQ
- D. LLQ



Pre-test

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4. The initial diet for chronic abdominal pain without alarm symptoms is \_\_\_\_\_

- A. High fiber
- B. Clear fluids only
- C. No lactose/gluten
- D. No spicy foods



Pre-test

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5. A 37 year old landscaper has 3 months of LLQ abd pain. POCUS & labs are negative,

but he has a positive LLQ carnett's sign. Which is appropriate?

- A. PPI x 2 weeks
- B. CT scan w contrast
- C. Local anesthesia injection
- D. Laproscopy

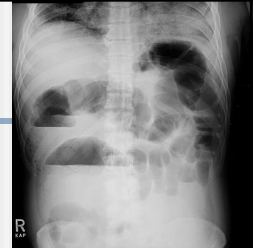
**Pre-test**

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## Vocabulary...

### ■ Acute Abdomen

- Rapid onset
- Severe pain
- Inflammation, infection
  - common causes.
- Requires urgent decisions
  - NOT ALWAYS a diagnosis!
- Treatment is **often** surgical



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## Vocabulary



- **Chronic abdominal pain**
  - Pain of at least **3 months** duration
- **Recurrent abdominal pain**
  - Hx > 3 episodes of pain over 3 months
  - Pain affects activities
  - Term slowly being phased out
- **Functional Abdominal Pain**
  - No **OBJECTIVE** evidence of underlying organic disease.
  - Thought to be neurologic or dietary.

Hyams et.al 1996.

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## Functional abdominal pain

- Most common causes:
    - functional dyspepsia
    - constipation-predominant IBS
    - diarrhea-predominant IBS
    - Functional abdominal pain syndrome.
- Together, these conditions affect approximately 1 in 4 people in the United States.

Common Functional GI Disorders Associated W Abd Pain  
Bharucha, Chakraborty, Sletten  
Mayo Clinic Proceedings, 2016

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## Functional abdominal pain

- Associated with depression & fibromyalgia
- High health care utilization
- Symptoms are explained by disordered GI motility and sensation, which are implicated in various peripheral (eg, postinfectious inflammation and luminal irritants) and/or central (eg, stress and anxiety) factors. These disorders are defined and can generally be diagnosed by symptoms alone.

*Common Functional GI Disorders Associated W Abd Pain  
Bharucha, Chakraborty, Sletten  
Mayo Clinic Proceedings, 2016*

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## Vocabulary



- **Irritable bowel syndrome**
  - Functional abdominal pain associated with alteration in bowel movements
  - Often w diarrhea/constipation
- **Abdominal migraine**
  - Functional abdominal pain w features of migraine (paroxysmal abdominal pain associated with anorexia, nausea, v, pallor)
  - Mother usually has migraines
  - Rare in adults
  - ER Peds surgery consult

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## Vocabulary

- **Rome criteria**
  - An international consensus to help guide decision making in patients with chronic abdominal pain, IBS, dyspepsia
  - Adult and pediatric sections
  - Multiple organizational categories
  - **There's an app for that!**

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## Abdominal Pain Visceral

LOA



- **STRETCHING** (not cutting/tearing/crush)
- Distension of a hollow viscus
- Dull, poor localization, cramping, burning.
- Autonomic (sympathetic and parasympathetic) nerves
- Location of the pain corresponds to the dermatomes of the organs involved
  - Settles towards the midline
- Sensory neuroreceptors for visceral pain are located in the mucosa or muscularis of hollow viscera
  - Ex.: appendiceal colic, biliary colic, obstruction, ADHESIONS

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## Abdominal Pain Somatic



- **RARE** in chronic abdominal pain
- The parietal peritoneum has **ONLY** somatic innervation
- Somatic pain is more intense and **very well localized**
- Somatic innervation is mediated by the spinal nerves
- **A transition from visceral to somatic pain indicates extension of the underlying process**
  - Laparoscopy: Chronic pain which localizes to one area.

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## Abdominal Pain-Referred

- Pain distant from the involved organ
- It is due to a convergence of visceral afferent neurons with somatic afferent neurons from different anatomic regions
- Well localized
- Kehr's sign

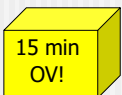
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## Scope of chronic abdomen

- It's common
  - 20% of school aged children (Frantz, 2011)
    - Peaks age 10-12
    - **Unusual before age 5**
  - Up to 1 in 4 adults (*Bharucha, 2016*)
  - 20% for 4 months after laparoscopy- esp after a heavy meal (*Khosravi, SAGES, 2014*)
- Diagnostic challenge-wide differential
  - GI, GU, nutritional/dietary, autoimmune, MS, neuro, vascular, reproductive, etc

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## Scope of the problem



- Frustrated patient looking for answers
  - "Just operate and I know I will feel better!"
- Comorbidities:
  - Depression
  - Fibromyalgia
  - Nutritional imbalances/malabsorption
- High utilization of the healthcare system:
  - Multiple tests
  - Multiple specialists

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## Meet Rosa...

- 72 y/o Hispanic
- Hx NIDDM, A1C of 6.3 on metformin 1000mg BID
- Lactose intolerant
- Hx C-section x 2
- PCN allergic
- 7 months of intermittent peri-umbilical pain and bloating...failed medical therapy & looking for answers



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## Approach to the problem

- In a 15 minute consult:
  - \*Does she need an operation?
  - Therapeutic vs. explorative
- Any alarm signs?
- Hx and PE will lead to further diagnostic testing or trials
- Organic vs. functional
- Often takes multiple visits to figure out!

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## Hx VERY USEFUL!



- Pain description
  - Pain that wakes patient up\*
- Pain relation to meals
- Diet habits or triggers
- Bowel Movements (Diarrhea\*)
- Weight loss\*
- Pain AWAY from umbilicus\*
- Referred pain to back/flank\*

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## Hx VERY USEFUL!

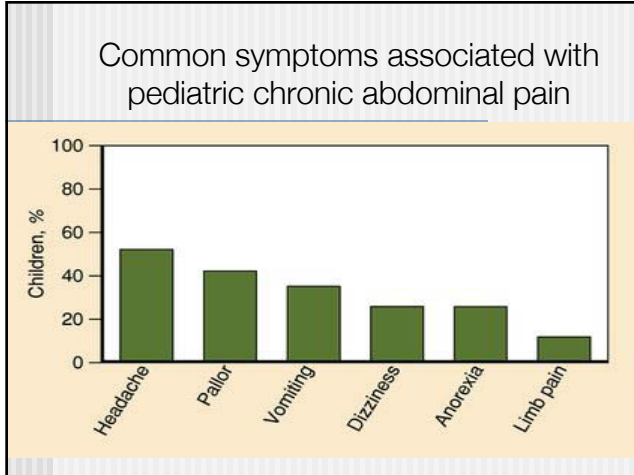


### SURGICAL HISTORY

- \*Multiple open abdominal incisions
- \*Lap appy- late 1980-early 1990s  
consider stump appendicitis
- \*Hernia w tissue approximation  
No mesh  
53% inguinodynia

O'Dwyer PJ et al. World J Surg 29:1062

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### Table III. Alarm symptoms in patients with functional and organic causes for chronic abdominal pain


Symptoms	Total (n = 853)	Functional (n = 751)	Organic (n = 102)	P value*
None	509 (60)	479 (64)	30 (29)	<.001
Positive family history of IBD/colic disease/FMF	107 (13)	92 (12)	15 (15)	.482
Chronic diarrhea	79 (9)	46 (6)	33 (32)	<.001
GI blood loss	71 (8)	35 (5)	36 (35)	<.001
Weight loss	66 (8)	48 (6)	18 (18)	<.001
Recurrent vomiting	45 (5)	35 (5)	10 (10)	.029
Pain right upper/lower region	27 (3)	23 (3)	4 (4)	.642
Joint pain	25 (3)	19 (3)	6 (6)	.106
Aphthous ulcer	22 (3)	17 (2)	5 (5)	.115
Fever	15 (2)	14 (2)	1 (1)	.524
Perianal complications	15 (2)	9 (1)	6 (6)	.001
Unexplained fever	14 (2)	12 (2)	2 (2)	.787
Impaired growth	10 (1)	6 (1)	4 (4)	.023
Erythema nodosum	4 (1)	2 (-)	1 (1)	.400
Hepatosplenomegaly	3 (-)	2 (-)	1 (1)	.318
Uveitis	1 (-)	1 (-)	-	0.004
Icterus	-	-	-	-

FMF, Familial Mediterranean fever.  
\*P values as determined with  $\chi^2$  test and Fisher exact test. Values are number (%).

J Pediatrics 2020; 219 76-82

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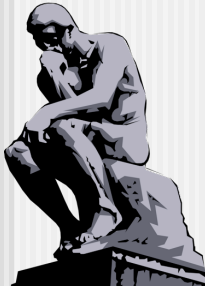
### Important Hx point...



**Nausea/Vomiting**  
**Pain in the acute surgical abdomen usually precedes vomiting!**  
 Prominent - gastroenteritis, gastritis, pancreatitis, high intestinal obstruction  
 Explosive - Mallory-Weiss.  
 Hematemesis - PUD, gastritis; may require emergent intervention

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### Other symptoms to consider



- Fever
- Chest Pain
- Back Pain
- Groin/scrotal pain
  - In MEN do a groin/hernia exam!
- Cardio and pulmonary
- GU
- Menstrual cycle

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## Abdominal Pain

- Start with a good history
  - Can lead you to the diagnosis almost 2/3 of the time!
  - It will direct your PE
  - "In spite of tremendous advanced in diagnostic technologies, PE remains the most important tool for assessing the abdomen"
  - A. Haider ACS Spring Meeting 2003
  - **We are loosing our PE skills to CT & POCUS**
- System above, system below!
  - PUL/CV
  - Rectal & Scrotal or GYN



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## PE Very useful

\*  
organic

- **Fully undressed (documented)**
- Umbilical area pain
- RUQ +/- RLQ pain \*
- Organomegaly\*
- Tenderness over the spine \*
- Bloating/distension/tympany
- GU/groin/hernia/CV/Pulmonary\*

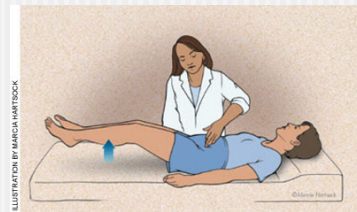
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## Carnett's sign

Try  
Marcaine

- Distinguishes deep visceral pain from abdominal wall pain .
- Focal tenderness increases or remains during abdominal muscle contraction.
- Causes of abdominal wall pain:
  - hernia, hematoma, musculature.
  - ? Shingles (dermatomal)

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## Localized abdominal pain

Try  
Marcaine

- If abdominal wall pain
  - Topical heat/massage/topicals
  - Try local injection of marcaine, lidocaine or procaine
- Rub on topical pain cream/gel you may see immediate relief.

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## TAP- regional anesthesia...

### ORIGINAL ARTICLE

#### Efficacy of Transversus Abdominis Plane Steroid Injection for Treating Chronic Abdominal Pain

Alaa Abd-Elseyed, MD, MPH<sup>1</sup>; David Malyuk, BS<sup>2</sup>

<sup>1</sup>Department of Anesthesiology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin; <sup>2</sup>Medical School, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, U.S.A

*Pain Practice Jan 2018*

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## Adhesions-PE

- Adhesions which put pressure on internal organs may cause a patient to become kyphotic
- Splinting
- ? PT therapy for adhesions

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## After the Hx & PE

- Consider lab and imaging...

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Initial lab testing

ORIGINAL ARTICLE

Is serum C-reactive protein a reliable predictor of abdomino-pelvic CT findings in the clinical setting of the non-traumatic acute abdomen?

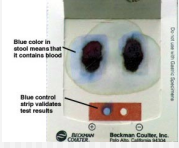
Joseph P. Coyte · Cressida R. Brennan ·

- There is no official consensus
  - IgA
  - CBC: Anemia/bleeding, WBC
  - CMP/LFT & lipase
  - CRP (inflammation)
    - Often indicates something requiring surgical repair.
    - Not always reliable in CRF
  - UA/UPT
  - Serum ammonia
  - PTH

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Lab testing- stool studies

- Colon CA screening
- O & P
- Stool acidity test (lactose)
- Fecal fat (pancreas)
- Specialized stool testing
  - SIBO/dysbiosis



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Breath tests!

- H Pylori
- Lactose hydrogen breath test!
- Methane breath tests
  - SIBO

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Gastroenterology and Hepatology From Bed to Bench

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ORIGINAL ARTICLE

Outcome of breath tests in adult patients with suspected small intestinal bacterial overgrowth

Johanna Mattsson<sup>1</sup>, Maria Teresa Minaya<sup>2</sup>, Milka Monegro<sup>2</sup>, Benjamin Lebowitz<sup>2</sup>, Suzanne K. Lewis<sup>2</sup>, Peter HR Green<sup>2</sup>, Reidun Stenberg<sup>2,3</sup>

<sup>1</sup>Orebro University Hospital, Örebro University, Örebro, Sweden  
<sup>2</sup>Department of Medicine, Celiac Disease Center, Columbia University College of Physicians and Surgeons, Columbia University Medical Center, New York, USA  
<sup>3</sup>University Health Care Research Center, School of Health and Medical Sciences, Örebro University, Örebro, Sweden

**ABSTRACT**

**Aim:** The aim was to investigate breath test outcomes in patients with suspected SIBO and indicative symptoms of SIBO, diagnosed by breath testing.

**Background:** Breath testing is used to detect small intestinal bacterial overgrowth (SIBO) by measuring hydrogen and methane produced by intestinal bacteria.

**Methods:** This retrospective cross sectional study included 311 patients with gastrointestinal symptoms who underwent the breath test for evaluation of SIBO at Celiac Disease Center at Columbia University, New York, in 2014–2015. The patients were divided into two groups based on the physician's choice: lactulose breath test group (72%) and glucose breath test group (28%). Among them, 38% had a history of celiac disease or non-celiac gluten sensitivity.

**Results:** In total, 46% had a positive breath test: 18% were positive for methane, 24 % positive for hydrogen and 4% positive for both gases (p=0.014). Also, 50% had a positive lactulose breath result and 37% had a positive glucose breath result (p=0.036). The most common symptom for performing the breath test was bloating and the only clinical symptom that significantly showed a positive glucose breath test was increased gas (p=0.028).

**Conclusion:** Lactulose breath test was more often positive than glucose breath test. Positivity for hydrogen was more common than methane. Bloating was the most frequently perceived symptom of the patients undergoing the breath test but the only statistically significant clinical symptom for a positive glucose breath test was increased gas. Furthermore, the results showed that there was no significant association between positive breath test result and gender, age, non-celiac gluten sensitivity or celiac disease.

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ORIGINAL ARTICLES

www.jpeds.com • THE JOURNAL OF PEDIATRICS

### Clinical Evaluation of Inflammatory and Blood Parameters in the Workup of Pediatric Chronic Abdominal Pain

Judith Zeevenhooven, BSc<sup>1,\*</sup>, Robyn Rexwinkel, BSc<sup>1,\*</sup>, Ellen Tromp, PhD<sup>2</sup>, Bart Haver, BSc<sup>1</sup>, Michael Groeneweg, MD, PhD<sup>2</sup>, Marc A. Benninga, MD, PhD<sup>1</sup>, and Arine M. Vlieger, MD, PhD<sup>2</sup>

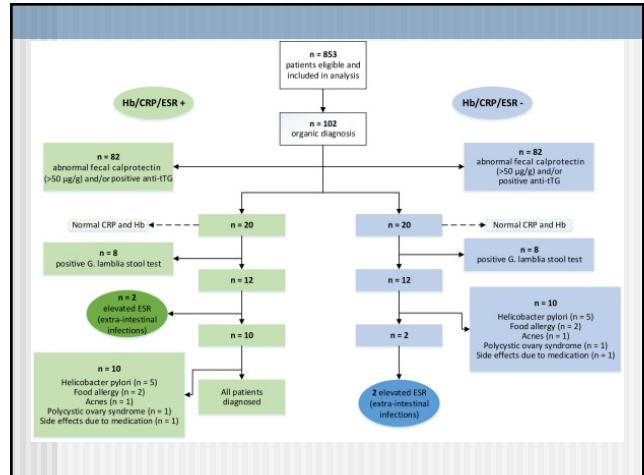
**Objective** To investigate the additional value of blood parameters (hemoglobin, C-reactive protein, erythrocyte sedimentation rate) to anti-tissue transglutaminase (anti-tTG), fecal calprotectin, and *Giardia lamblia* when discriminating a functional from an organic cause in the clinical evaluation of children with chronic abdominal pain.

**Study design** This retrospective cohort study included patients (4-18 years of age) with abdominal pain for >2 months. Data on hemoglobin, C-reactive protein, erythrocyte sedimentation rate, anti-tTG, fecal calprotectin, alarm symptoms, and diagnosis were collected.

**Results** We identified 853 patients, of whom 102 (12%) had an organic disorder. Sensitivity and the area under the curve of strategy 1 (fecal calprotectin, anti-tTG, *G lamblia*, blood parameters) were 90% (95% CI, 83-95) and 0.87 (95% CI, 0.81-0.93), respectively, compared with 88% (95% CI, 81-93) and 0.85 (95% CI, 0.79-0.91), respectively, for strategy 2 (fecal calprotectin, anti-tTG, *G lamblia*) (*P* = NS). In the presence of ≥1 alarm symptoms, the sensitivity of strategies 1 and 2 was 92% (95% CI, 83-96) and 92% (95% CI, 83-96), and the areas under the curve were 0.93 (95% CI, 0.89-0.98) and 0.90 (95% CI, 0.84-0.97) (*P* = NS).

**Conclusions** To distinguish between a functional and an organic cause for chronic abdominal pain, hemoglobin, C-reactive protein, and erythrocyte sedimentation rate can be left out from the clinical evaluation as they might have no additional diagnostic yield. However, caution should be taken not to miss extraintestinal infections (2%). (*J Pediatr* 2020;219:76-82).

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### Ultrasound/POCUS

- Abdominal
  - Especially for R sided/ PC pain ? HIDA
- Pelvic
  - Evaluate ovaries
  - Consider ovarian CA in older women with vague lower abdominal complaints!
- Avoid US in patients with bloating, as the gas affects the accuracy

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AJR 2011

### CT Scanning helps!

#### Abdominopelvic CT Increases Diagnostic Certainty and Guides Management Decisions: A Prospective Investigation of 584 Patients in a Large Academic Medical Center

**OBJECTIVE.** The objective of our study was to prospectively determine how CT affects physicians' diagnostic certainty and management decisions in the setting of patients with nontraumatic abdominal complaints presenting to the emergency department.

**SUBJECTS AND METHODS.** We included 584 patients presenting with nontraumatic

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MARCH 2012

## Capsule endoscopy

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“no significant clinical value”

**Capsule Endoscopy for the Evaluation of Patients with Chronic Abdominal Pain**


E. Bardan  
M. Nadler  
Y. Chowers  
H. Fidler  
S. Bar-Meir

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## So...

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- What can be done to help these challenging patients?



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## Therapeutic trials

*If not already done*

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- Avoidance or milk +/- gluten
  - Need at least 5-10 days to see results
- Trial PPI –max 2 weeks
- Trial H2RA
- Trial baking soda
- Trial nystatin (bloating)
- Trial melatonin (prokinetic)—best in DM
- Trial NSAID (if no risk PUD)
  - ? Initial IM dose of Ketorolac

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## AVOID PPIs in chronic abdomen!

More research coming

<b>JAMA</b> <small>The Journal of the American Medical Association</small>	2016: PPIs was independently associated with a 20% to 50% increase in incident CKD
<b>ASN</b> <small>Journal of the American Society of Nephrology</small>	2016: Confirmed association PPIs with...CKD, Progression of ESRD, Doubling of Serum creatinine.
<b>CMAJ</b> <small>Canadian Medical Association Journal</small>	2015: PPI Therapy had increased risk of acute kidney injury and acute interstitial nephritis
<b>PLOS</b> <small>Public Library of Science</small>	2015 PLOS - General Population • PPI consumption increases chances of MI In general population also.
<b>BMJ Open Gastroenterology 2014</b>	2014 Japan - Hypomagnesemia • Log term PPI intake induces hypomagnesemia
<b>Circulation</b> <small>Journal of the American Heart Association</small>	2013 & 2016 AHA – Circulation THE ADMA PATHWAY & PPI induced Endothelial aging.
<b>thebmj</b>	2011 PPI Interaction with Clopidogrel • PPI & Clopidogrel: similar CYP2 pathway, PPI reduces clopidogrel action by almost 45%

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## Diet modifications help with Dx

- Rotate out potential offending foods:
  - Lactose
  - Gluten
  - Spices

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## Abdominal bloating “Gas Pains”

- Probiotics
- Nystatin
- Great when combined with a low carb
- 500,000 u twice daily



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## Glutamine

\*All chronic patients should be on!

- Low IgA level
  - Vital amino acid
  - Produces GABA
    - Vital for LES tone
  - Vital for muscle function
  - Intestines have highest demand
    - Especially when ill or under stress
    - More glutamine=more healthy gut mucosa
- Look for increased use in Surgical stress/ICU

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## Aloe Juice/capsules

- Aloe is known to be anti-inflammatory
- Helps with mucosal lining
- Drink 2 oz as a maintenance dose or as needed for reflux.
- Great results with esophagitis & DU if combined with cytoprotection!



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## Digestive supporters

- Apple Cider Vinegar
  - Acid... for acid?
  - Great if combined with probiotics
- Pancreatic enzymes
  - OTC Plant based just before a meal
  - Especially good for those with a long history of PPI use.

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## H Pylori

- *Breath test*
- *Serum: IgA IgG IgM*
- Tx:
  - Triple Therapy
  - Plyera
  - Mastic Gum
  - Bismuth



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## Fatty food intolerance RUQ pain PC

- LFTs
- Diet modification
  - Green apples
- RUQ US
- HIDA Scan
  - Obstruction vs poor emptying



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## Diarrhea with Pain

- Serum derived bovine Ig
  - Abd pain w D
  - IBD
- Rifaximin
  - ? SIBO



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## Ginger

- Used for years for nausea
  - Chemo
  - Pregnancy
- Accelerates gastric emptying
- Stimulates antral contractions
- Dose: 1,200mg/d
  - Wu, 2008 *J Euro Gastroenter*

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## Probiotics

- Consider home stool studies
  - Many commercial kits available
- Many different varieties
- Be sure to treat entire GI tract
  - Oral coverage
  - Delay release
- Especially important for those on PPIs, recent antibiotics, diarrhea, etc

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### Treatment of Chronic Abdominal Pain With 10-kHz Spinal Cord Stimulation: Safety and Efficacy Results From a 12-Month Prospective, Multicenter, Feasibility Study

Leonardo Kapural, MD, PhD<sup>1,2</sup>, Mayank Gupta, MD<sup>3</sup>, Richard Paclius, MD<sup>4</sup>, Wyndam Strodtbeck, MD<sup>5</sup>, Kevin E. Vorenkamp, MD<sup>6</sup>, Christopher Gilmore, MD<sup>1</sup>, Bradford Gilmer, MS<sup>7</sup>, Anand Rotte, PhD<sup>8</sup>, Jayakumar Subbarayan, PhD<sup>9</sup> and Rose Province-Azalde, MS<sup>9</sup>

**INTRODUCTION:** Chronic abdominal pain (CAP) can arise from multiple conditions, including inflammatory disorders, trauma because of injury or surgery, or structural or functional causes. This prospective, single-arm study was designed to evaluate the safety and efficacy of 10-kHz spinal cord stimulation (SCS) in patients with intractable CAP over a 12-month follow-up period.

**METHODS:** Subjects with CAP who had been refractory to conventional medical treatment for at least 3 months resulting in self-reported pain scores of  $\geq 5$  cm on a 10-cm visual analog scale were enrolled at 4 centers in the United States. Study subjects underwent a trial stimulation lasting up to 14 days with epidural leads implanted from the vertebral levels T4 through T8. Subjects who had  $\geq 40\%$  pain relief during the trial stimulation period were implanted with a Senza system (Neuro Corp., Redwood City, CA) and followed up to 12 months after surgery.

**RESULTS:** Twenty-three of 24 subjects (95.8%) had a successful trial stimulation and proceeded to a permanent implant. After 12 months of treatment with 10-kHz SCS, 78.3% of subjects were responders (pain relief of  $\geq 50\%$ ) and 14 of 22 subjects (63.6%) were remitters (sustained  $\leq 3.0$ -cm visual analog scale scores). Secondary outcomes, including assessments of disability, mental and physical well-being, sleep quality, perception of improvement, and satisfaction, showed that 10-kHz SCS greatly improved the quality of life of patients with CAP. Observationally, most subjects also reported concurrent reduction or resolution of nausea and/or vomiting.

Kapural, et.al.  
Treatment of Chronic Abd Pain W 10-kHz Spinal Cord Stimulation  
Clinical and Translational Gastroenterology: February 2020

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## Surgical Intervention...

Surgery!

1. ABD pain is increasing in severity
2. Pinpoint/somatic abdominal pain, not on abdominal wall
3. Serial exams are worsening
4. Extremes of age
5. Steroid use
6. History of multiple open surgical procedures
7. Persistent RLQ pain
8. Elevated CRP not responding to medical therapy

*No other reason for elevation of CRP*

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## Surgical Intervention Most common findings

Surgery!

- Adhesions
- GB/Biliary tree
- Chronic appendicitis
- Ovarian Cyst



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**Table 3:** Distribution of cases as per laparoscopic findings

Laparoscopic findings	N	%
Abnormal appendix	15	30.0
Abdominal tuberculosis	12	24.0
Adhesions	5	10.0
Pelvic inflammatory disease	3	6.0
Mesenteric lymphadenopathy	2	4.0
Ovarian cyst	2	4.0
Cholecystitis	2	4.0
Femoral hernia	2	4.0
Diverticulosis (mekels)	1	2.0
Normal study	6	12.0
Total	50	100

International Journal of Surgery Science 2020; 4(1): 17-21

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## HOT TOPIC Adhesiolysis

- *In patients with chronic abdomen and + surgical history, we like to look for adhesions!!*
- Lancet, April 2013
- Laproscopic adhesiolysis DID relieve chronic abdominal pain, but was not found to be more beneficial than just exploratory laproscopy!
  - ? Psychologic benefit

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## 15 year follow-up

JOURNAL OF CLINICAL GASTROENTEROLOGY

**Laparoscopic Adhesiolysis in Chronic Abdominal Pain: 15-Year Follow-up Study**  
Pajunen, Paavo MD<sup>1</sup>; Pajunen, Anne MD<sup>2</sup>; Pajunen, Hanna MD, PhD<sup>1\*</sup>  
 Journal of Clinical Gastroenterology: April 2018 - Volume 52 - Issue 4 - p e32-e36

- LOA chronic abd pain patients DID HAVE PAIN relief 15 years later BUT still has other GI symptoms.

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## Chronic RLQ pain



& failure of medical therapy  
80% had an **abnormal** appendix on histologic exam, even when the appendix looked normal on laproscopy!



"I'm still standing! Despite a Retrocecal appy w abscess > 10 days Aug 2013!"

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## Surgical care of chronic abdomen



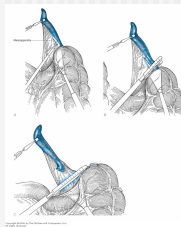
- Patients often desperate, looking for answers and a promise they will feel better!
- Procedure of choice is **laproscopic exploration**
  - **SILS**
  - If laproscopic look negative, ? HALS

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## Surgical exploration



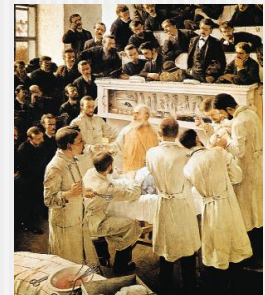
- Adhesions
- Adnexal disease
- Endometriosis
  - Aggressively sample lesions!
- Crohn's disease
- Meckel's Diverticulum
- Chronic appendicitis
  - Consider empiric appendectomy!
  - Evaluate for stump appendicitis



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## Postsurgical chronic abdominal pain

- Incisional
- Hernia
- Nerve injury



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## Chronic abdomen-pitfalls



- Not fully undressed PE
  - Document this!
- Females-no UPT/BHCG
- Men-no hernia, scrotal exam
- No DRE, hemoccult/FOBT
- Overestimating your POCUS ability
- Underestimating tricky patients...



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## Tricky patients to remember

- Young
- Old
- Diabetic
- Immunocompromised
  - Chemotherapy
  - Steroids
- Pregnant
- Psychiatric



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## Take home points-1

- Measure the CRP!
- \*Perform therapeutic trials
  - Diet, meds, restructure gut microbiome
- Laparoscopy
  - alarm symptoms
  - failed trials
  - RLQ pain
  - Post-op

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## Take home points-2

- Capsule endoscopy little help in chronic abdomen
- Consider studying the gut microbiome
  - Many commercial kits available
- Common problems: Poor diet, constipation, chronic occult appendicitis, candida.

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1. After diet modification, the most affordable GERD tx for an uninsured patient is

- A. Omeprazole
- B. Baking Soda**
- C. XIFAXIN
- E. NOTES fundoplication

POST-TEST

If no contraindications: salt

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2. The test that is most useful in assessing for an organic cause of chronic abdominal pain is...

- A. CBC with differential
- B. UA
- C. LFT
- D. C-reactive protein**

POST-TEST

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3. Patients with non-pathologic causes of chronic abdominal pain typically report pain near the

- A. Flanks
- B. Umbilicus**
- C. RUQ
- D. LLQ

POST-TEST

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4. The initial diet for chronic abdominal pain without alarm symptoms is

- A. High fiber
- B. Clear fluids only
- C. No lactose/gluten**
- D. No spicy foods

POST-TEST

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5. A 37 year old landscaper has 3 months of LLQ abd pain. POCUS & Labs are negative,

but he has a positive LLQ carnett's sign. Which is appropriate?

- A. PPI x 2 weeks
- B. CT scan w contrast
- C. Local anesthesia injection**
- D. Laproscopy



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Thank you!

Can you feel the love tonight, for helping our patients w Chronic abdomen?



- Any questions or comments?
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