MEDICINE

432 Team

26 Abdominal Pain Including IBS

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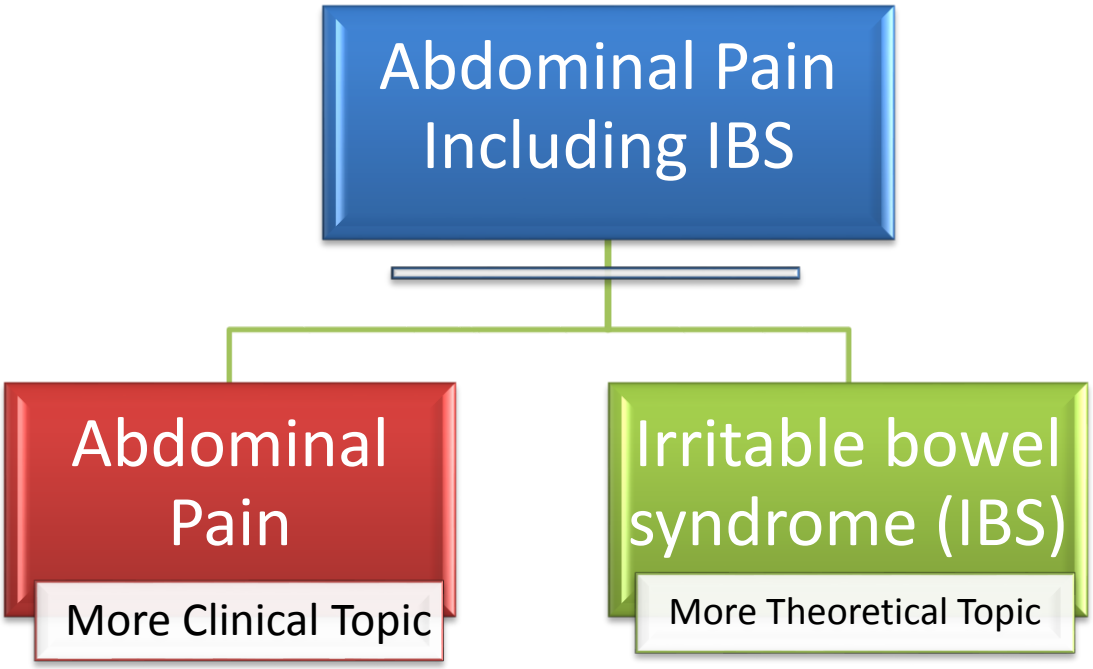
COLOR GUIDE: • Females' Notes • Males' Notes • Important • Additional

Objectives

Not Given



Notes in orange are brought from Davidson's

Introduction

Abdominal pain can be a challenging complaint for both primary care and specialist physicians because it is frequently a benign complaint, but it can also herald serious acute pathology. Abdominal pain is present on questioning of 75% of otherwise healthy adolescent students and in about half of all adults. Pain due to serious conditions must be distinguished from pain due to minor conditions.

Abdominal Pain: (History)

Case 1:

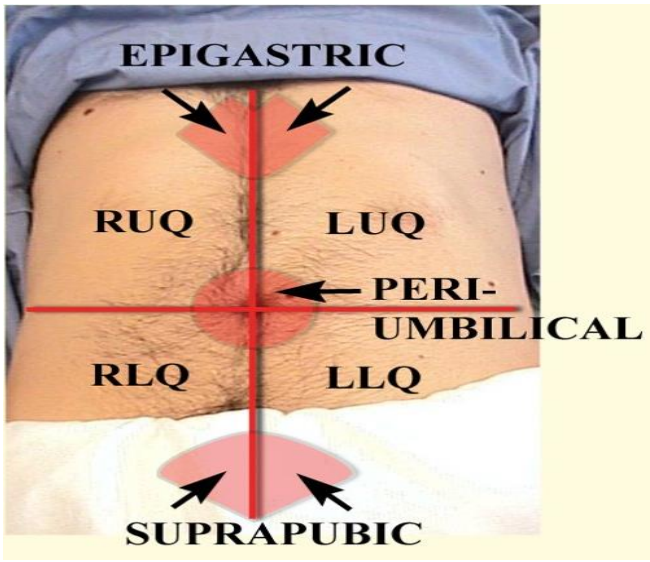
24 yo healthy M with one day hx of abdominal pain. Pain was generalized at first, now worse in right lower abd & radiates to his right groin. He has vomited twice today. Denies any diarrhea, fever, dysuria or other complaints.

- *What else do you want to know?*
- *What is on your differential diagnosis?*
- *How do you approach the complaint of abdominal pain in general?*
- *What are types of pain?*

"Tell me more about your pain…."

- ✓ Location and radiation
- ✓ Character and Severity
- ✓ Onset (sudden…) and duration. → Must to know if it's acute or chronic because my DDx will change according to that.
- ✓ Exacerbating or relieving factors
- ✓ Associated symptoms (fever, vomiting…) → Must know which symptom came first. For example, a patient with food poisoning will experience abdominal pain first and then vomiting.
- ✓ Medications (aspirin or NSAIDs)
- ✓ Past medical history: history of stones? History of cancer?
- ✓ Family history of cancer?

Types of pain:



1. Visceral: Gut organs are insensitive to stimuli such as burning and cutting, but are sensitive to distention, twisting, stretching and contraction. Pain from unpaired structures is usually but not always felt in the midline.

- Involves hollow or solid organs; midline pain due to bilateral innervation
- Vague discomfort to excruciating pain
- Poorly localized

Epigastric region: stomach, duodenum, biliary tract

Periumbilical: small bowel, appendix, cecum

Suprapubic: colon, sigmoid, GU tract

Pain of appendicitis starts as visceral and then becomes parietal.

2. Parietal:

- Involves parietal peritoneum
- Localized pain
- Causes tenderness and guarding which progress to rigidity and rebound as **peritonitis** develops

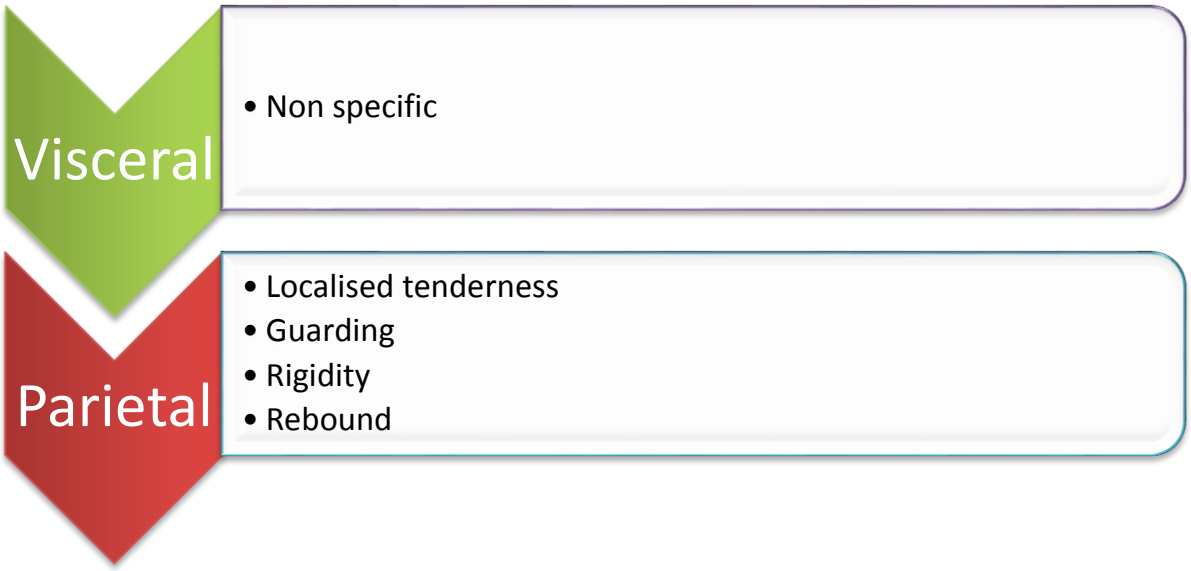
3. Referred pain:

- Produces **symptoms** not signs
- Based on developmental embryology
  - Ureteral obstruction → testicular pain
  - Subdiaphragmatic irritation → ipsilateral shoulder pain
  - Gynecologic pathology → back or proximal lower extremity
  - Biliary disease → right infrascapular pain

- MI → epigastric, neck, jaw

4. Psychogenic: In some patients, no organic cause can be found.

Course of the pain:



High Yield Questions:

- Which came first – pain or vomiting?
- How long have you had the pain? Acute or chronic?
- Constant or intermittent? History of intermittent abdominal pain is more towards a functional disorder such as IBS rather than an organic lesion.
- History of cancer, diverticulosis, gall stones and Inflammatory Bowel Disease?
- Vascular history, HTN, heart disease or AF? Related to mesenteric angina or mesenteric angina.

Physical Exam:

- General and Vital Signs Abnormality of vital signs suggest acute abdomen
- Four important features of abdominal pain on examination:
  1. Tenderness
  2. Guarding
  3. Rigidity

4. Rebound tenderness → very suggestive of peritonitis

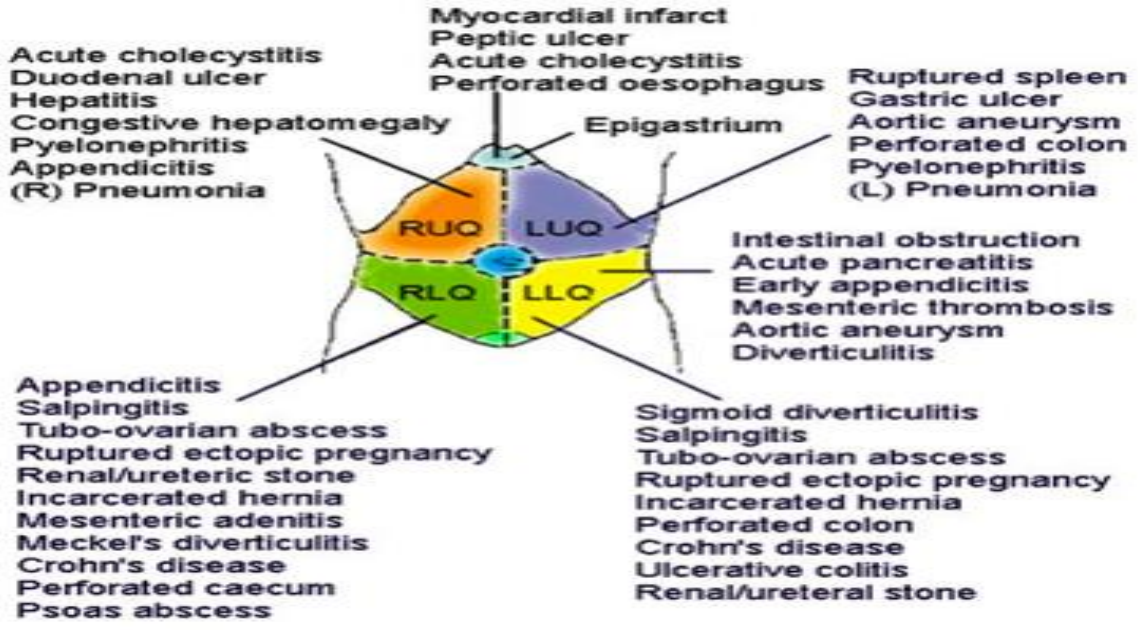
- Guarding
  - Voluntary
    - Diminish by having patient flex knees
  - Involuntary
    - Reflex spasm of abdominal muscles

Ask the patient to flex their knees or try to distract them while you're examining to know if it's voluntary or involuntary guarding.

- Rigidity → Abdomen feels like a board on palpation.
- Rebound (can be normal in 25%) → Press on the abdomen and release → pain will be felt on affected side. For example, a patient with appendicitis (RLQ pain), press on the left side then release → patient will feel pain on the right side.
- Suggests peritoneal irritation
- If there are signs of peritonitis, the patient should be resuscitated with oxygen, IV fluids and antibiotics.

Differential Diagnosis:

- It's Huge!
- Use history and physical exam to narrow it down
- Rule out life-threatening pathology
- Half the time you will send the patient home with a diagnosis of nonspecific abdominal pain.
  - 90% will be better or asymptomatic at 2-3 weeks



ACUTE VS CHRONIC PAIN:

- 12 weeks, can be used to separate acute from chronic abdominal pain. Pain of less than a few days duration that has worsened progressively until the time of presentation is clearly "acute."
- Pain that has remained unchanged for months can be safely classified as chronic.
- Pain in a sick or unstable patient should generally be managed as acute. Even if the patient has a 6 month history of abdominal pain but this time presented unstable → manage as acute

Acute Abdominal Pain: (Surgical abdomen)

The 'surgical abdomen' can be usefully defined as a condition with a rapidly worsening prognosis in the absence of surgical intervention. Two syndromes that constitute urgent surgical referrals are obstruction and peritonitis. Pain is typically severe in these conditions, and can be associated with unstable vital signs, fever, and dehydration.

- Sometimes in acute pancreatitis patients do not necessarily vomit but lose fluid in third space leading to dehydration
- Acute abdomen is a consequence of one or more pathological processes → inflammation, perforation, obstruction.

What kind of tests should you order? Depends on Hx and physical examination

- CBC: “What’s the white count?”
- Chemistries
- Liver function tests especially for common bile duct stones.
- Lipase for acute pancreatitis
- Coagulation studies
- Urinalysis, urine culture To exclude renal stones, pyelonephritis
- Lactate Can be high in case of perforated viscous which present with signs of shock and metabolic acidosis

- All women at childbearing need BHCG to exclude ectopic pregnancy & to know how to manage the patient like for example a pregnant women should not be exposed to CT radiation.

What kind of imaging should you order?

- Depends what you are looking for!
- Abdominal series (SBO or perforation)
- Ultrasound (cholecystitis)
- CT abdomen/pelvis. To seek evidence of pancreatitis, retroperitoneal collection or masses, including an aortic aneurysm.
- Chest x-ray may show air under the diaphragm, suggestive of perforation.
- Plain abdominal film may show evidence of obstruction or ileus.
- Ultrasonography is useful in gallstones or renal stones detection or any possible intra-abdominal abscess.
- Contrast studies by either mouth or anus are useful in further evaluation of intestinal obstruction and essential in the differentiation of pseudo-obstruction from mechanical large bowel obstruction.
- Angiography for mesenteric ischemia.
- Diagnostic laparotomy should be considered when the diagnosis has not been revealed by other investigations.

Back to Case #1….24 yo with RLQ pain

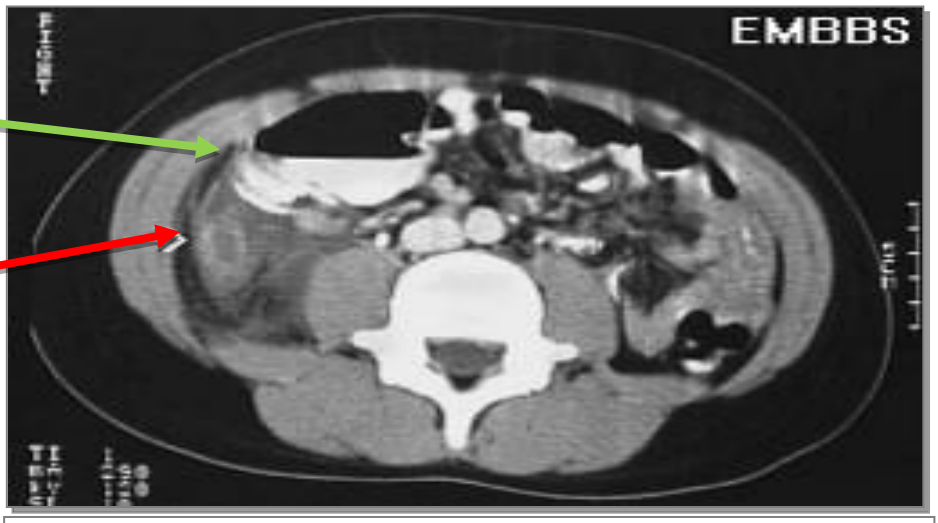
- T: 37.8, HR: 95, BP 118/76,
- Uncomfortable appearing, slightly pale
- Abdomen: soft, non-distended, tender to palpation in RLQ with mild guarding; hypoactive bowel sounds

What is your differential diagnosis and what do you do next?

CT scan

Cecum

- ✓ Abscess
- ✓ fat
- ✓ stranding



Appendicitis: CT findings

Case 2:

- 68 yo F with 2 days of LLQ abd pain, diarrhea, fevers/chills, nausea; vomited once at home.
- PMHx: HTN on HCTZ
- T: 37.6, HR: 100, BP: 145/90, R: 19
- Abd: soft, moderately LLQ tenderness

Acute course → less likely to be malignant.

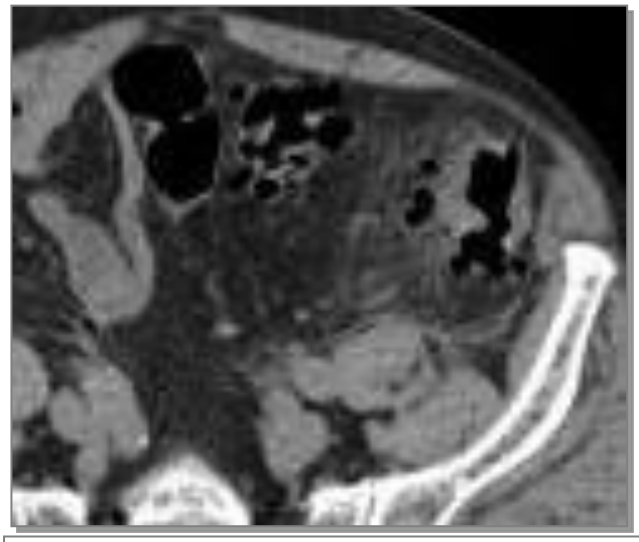
Fever/chills suggest infection

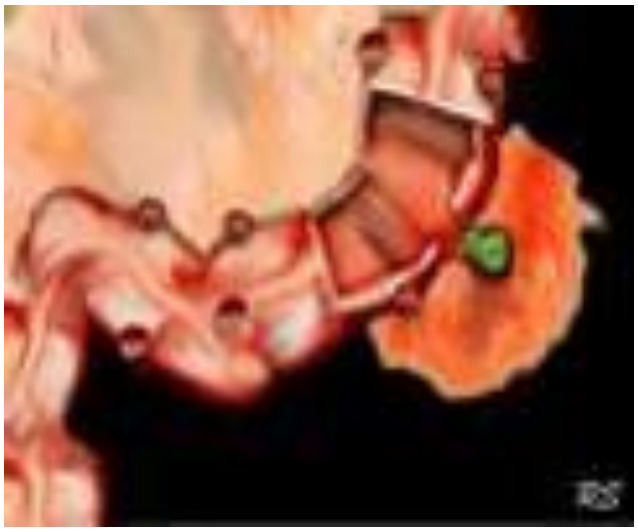
What is your differential diagnosis & what next?

Next step is CT.

Colonoscopy should NOT be done right away in this case due to of risk of diverticula perforation.

We should wait for 6-8 weeks until the patient is treated then do colonoscopy to exclude malignancy.





Diverticulitis

Note:

- Diverticulosis is a finding.
- Diverticulitis (inflammation of diverticula) is one its complication.
- Bleeding is one of the complications as well.

Case 3:

- 46 yo M with hx of alcohol abuse with 3 days of severe upper abd pain, vomiting, subjective fevers.

- Vital signs: T: 37.4, HR: 115, BP: 98/65, Abdomen: mildly distended, moderately epigastric tenderness, +voluntary guarding

What is your differential diagnosis & what next?

- Chemical (Alcoholic) gastritis: mostly presents with nausea & vomiting, not abdominal pain.
- Alcoholic hepatitis usually presents with jaundice not abdominal pain.

Pancreatitis

- Risk Factors
  - Alcohol
  - Gallstones
  - Drugs
    - diuretics, NSAIDs
  - Severe hyperlipidemia
- Clinical Features
  - Epigastric pain
  - Radiates to back
  - Severe
  - N/V

Case 4:

- 72 yo M with hx of CAD on aspirin and Plavix with several days of dull upper abd pain and now with worsening pain "in entire abdomen" today. Some relief with food until today, now worse after eating lunch.
- T: 99.1, HR: 70, BP: 90/45, R: 22 → unstable vitals
- Abd: mildly distended and diffusely tender to palpation, +rebound and guarding. → Signs of peritonitis

What is your differential diagnosis & what next?

Likely to be peptic ulcer disease complicated by perforation.
Next step: resuscitate, order labs.

Peptic Ulcer Disease

- Physical Findings
  - Epigastric tenderness
  - Severe, generalized pain may indicate perforation with peritonitis
- Risk Factors
  - H. pylori
  - NSAIDs

- Clinical Features
  - Burning epigastric pain
  - Sharp, dull, achy, or "empty" or "hungry" feeling
  - Relieved by milk, food, or antacids
  - Awakens the patient at night

Air under diaphragm → clear sign of perforation

Symptoms that suggest complications related to a **peptic ulcer** include:

Peptic ulcer complications: bleeding, perforation and obstuction

- The sudden development of severe, diffuse abdominal pain may indicate perforation.
- Vomiting is the cardinal feature present in most cases of pyloric outlet obstruction. Huge ulcer causing inflammation and edema leading to gastric outlet obstruction.
- Hemorrhage may be heralded by nausea, hematemesis, melena, or dizziness.

Case 5:

- 35 yo healthy F to ED c/o nausea and vomiting for 1 day along with generalized abdominal pain.
- T: 36.9, HR: 100, BP: 130/85, R: 22
- Abd: moderately distended, mild TTP diffusely, hypoactive bowel sounds, no rebound or guarding

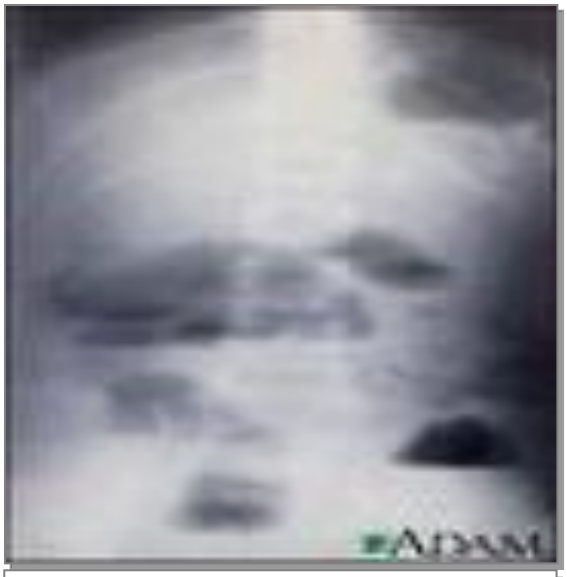
Nausea & vomiting are the most imp symptoms of bowel obstruction.

What is your differential and what next?

If it's an old patient with large bowel obstruction, first thing you should suspect is colon cancer. After that: diverticular stricture and possibly fecal impaction.

Bowel Obstruction

- Mechanical or non-mechanical causes
  - Adhesions from previous surgery which is the most common cause of small bowel obstruction.
  - Inguinal hernia incarceration
  - Large tumor
- Clinical Features
  - Crampy, intermittent pain
  - Periumbilical or diffuse
  - Inability to have BM or flatus
  - N/V
  - Abdominal distension



Air fluid levels

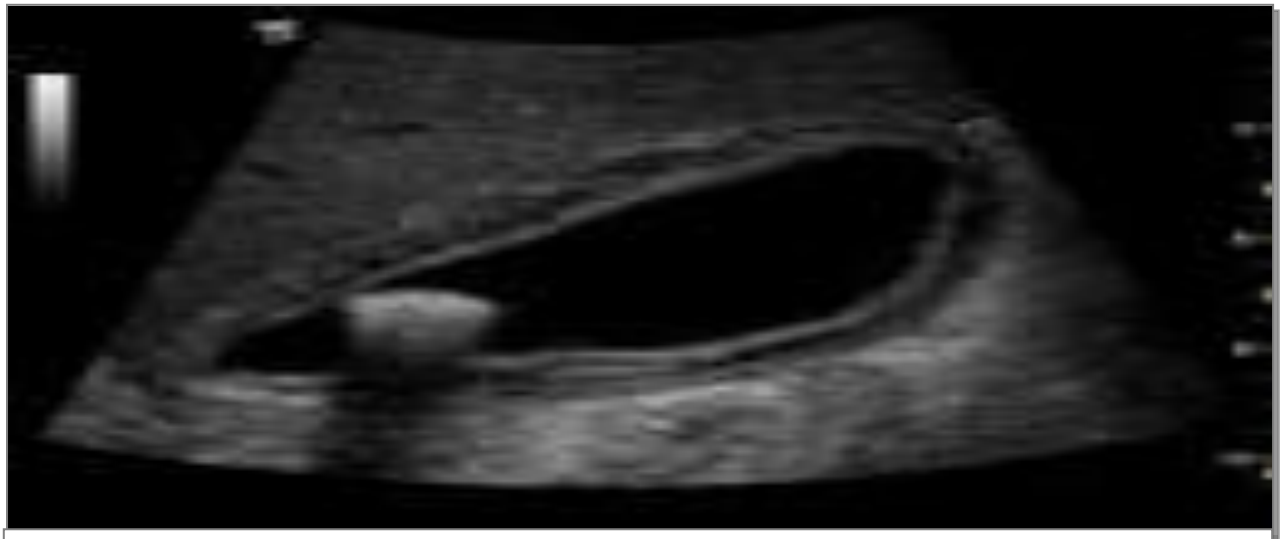
Case 6:

- 48 yo obese F with one day hx of upper abd pain after eating, +N/V, no diarrhea, subjective fevers.
- T: 100.4, HR: 96, BP: 135/76, R: 18
- Abd: moderately TTP RUQ, +Murphy's sign, non-distended, normal bowel sounds
- **What is your differential and what next?**
- Obstructive jaundice presents with dark urine and jaundice.
- Next step is ultrasound and LFT.
- If LFT turns out to be high, do MRCP or endoscopic US to rule out obstructive jaundice.
- If you find a stone by MRCP proceed to ERCP & get the stone out.

- Why do we do MRCP first not ERCP? ERCP is invasive and carries risk of pancreatitis and bleeding so it is mostly used for therapeutic rather than diagnostic means.

Cholecystitis

- Clinical Features
  - RUQ or epigastric pain
  - Radiation to the back or shoulders
  - Dull and achy → sharp and localized
  - Pain lasting longer than 6 hours
  - N/V/anorexia
  - Fever, chills
- Physical Findings
  - Epigastric or RUQ pain
  - Murphy's sign
  - Patient appears ill
  - Peritoneal signs suggest perforation



Ultrasound Indicate: Cholecystitis

Chronic Abdominal Pain:

Chronic abdominal pain is a common complaint, and the vast majority of patients will have a **functional** disorder, most commonly the irritable bowel syndrome. Initial workup is therefore focused on differentiating benign functional illness from organic pathology.

- Features that suggest organic illness include
  - Unstable vital signs,
  - Weight loss,
  - Fever,
  - Dehydration,
  - Electrolyte abnormalities,
  - Aymptoms or signs of gastrointestinal blood loss,
  - Anemia, or
  - Signs of malnutrition.

Chronic pain DDX

- IBS
- IBD
- PUD
- Gastric/ small or large bowel cancer
- Pancreatic cancer
- Celiac disease
- Reflux disease
- Functional dyspepsia

Irritable bowel syndrome (IBS)

IBS is a chronic continuous or remittent functional GI illness. It has no recognized organic disease and has no specific cause. 50% of referrals to gastroenterologist. Women are more likely to seek medical advice.

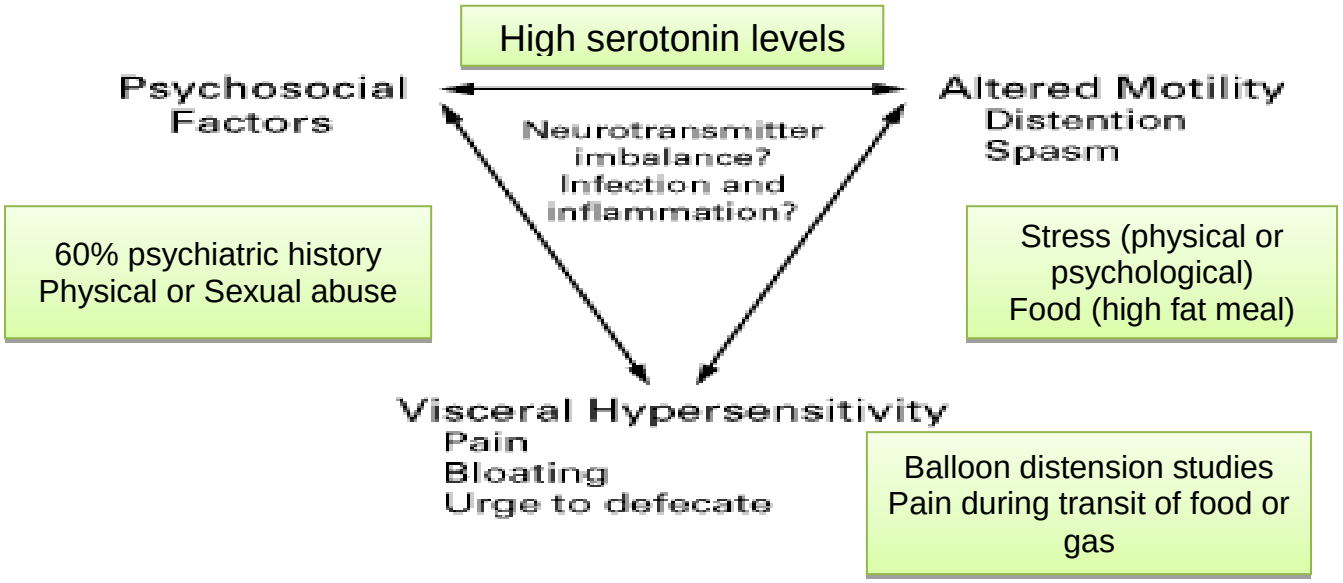
Epidemiology:

- Gender differences:
  - Affects up to 20% of adults (70% of them are women).
- Age:
  - Young
  - Psychopathology:
  - High prevalence of psychiatric disorders (anxiety and depression were the most common).
- Only 25% of persons with this condition seek medical care.

It is characterized by:

Abdominal pain, bloating and bowel habits changes (diarrhea or constipation)

Pathophysiology:



Symptoms meeting Rome III criteria + No alarm symptoms + Normal physical examination + Normal investigations (CBC, celiac serology, LFT, imaging) = Diagnosis of IBS

Symptoms that cumulatively support the IBS Dx:

- Abnormal stool frequency (>3 BM/day or <3BM/ week.
- Abnormal stool form (lumpy/hard or loose/watery)
- Abnormal stool passage (straining, urgency or feeling of incomplete evacuation)
- Passage of mucus

Bloating or feeling of abd distension

Clinical features supporting IBS Dx:

- Long history with exacerbation triggered by life events
- Association with symptoms in other organ systems. Like headache, cold extremities, dizziness → signs of anxiety
- Coexistence of anxiety and depression
- Symptoms that are exacerbated by eating.
- Conviction of the patient that the disease is caused by "popular" concerns (e.g. allergy, H Pylori)

Rome III diagnostic criteria* for irritable bowel syndrome

Recurrent abdominal pain or discomfort• at least 3 days per month in the last 3 months associated with 2 or more of the following:
(1) Improvement with defecation
(2) Onset associated with a change in frequency of stool
(3) Onset associated with a change in form (appearance) of stool

* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis.
• Discomfort means an uncomfortable sensation not described as pain. In pathophysiology research and clinical trials, a pain/discomfort frequency of at least 2 days a week during screening evaluation for subject eligibility.
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Diagnosis:

- IBS is not necessarily diagnosis of exclusion.
- Need a very good history (Rome 3 criteria + other clinical features suggestive of IBS)
- Ask about Alarm symptoms that suggest other serious diseases
  - ✓ PR bleeding
  - ✓ Weight loss
  - ✓ Family history of cancer.
  - ✓ Fever

- ✓ Anemia
- ✓ Onset >45 years of age
- ✓ Progressive deterioration
- ✓ Steatorrhea
- ✓ dehydration

- A firm diagnosis of IBS based on validated symptom criteria, the absence of alarming symptoms, and a normal physical examination, coupled with limited relevant diagnostic testing is reassuring to patients.
- Endoscopy?

Management:

- There is no cure, **but** effective management may lessen the symptoms.
- The therapeutic attitude of the physician during the first interview is of paramount importance.
- He should acknowledge the distress caused by the illness.
- Build an atmosphere of confidence and trust.
- Allow sufficient time.
- Explain to patient that he does not have a serious disease, however he has a chronic illness characterized by "sensitive gut" which can reacts excessively to food and mood.

Non-pharmacological treatment:

- Reassurance
- Identification of psychosocial stressors
- Diet (FOODMAP)
- Symptoms of IBS may respond to placebos as reported by 20% to more than 50% of patients in some trials.
- Fiber supplements (constipated)

Psychotherapy:

Cognitive behavioral therapy (perceptions of illness), was reportedly to be effective. A review of psychological treatments for IBS reported positive responses to psychotherapy. Psychotherapy is considered useful for those who have relatively severe or refractory symptoms. Small studies have shown that tricyclic compounds in low doses relieve unexplained abdominal pain.

Nonspecific bowel-directed therapy:

A rational approach to treating the irritable bowel syndrome uses the patient's symptoms as a guide.

- Pain predominant IBS
- Constipation predominant IBS
- Diarrhea predominant IBS

Common medical treatments for ABCDs of IBS:

- Abdominal pain:
  - Anticholinergics (Buscopan)
  - Calcium antagonists (dicetel)
  - Antidepressents (elavil)
- Bloating:
  - Domperidone, Simethicone
- Constipation:
  - High-fibre diet, metamucil
- Diarrhea:
  - Antimotility or binding agents

Abdominal Pain Clinical Pearls:

- Pain awakening the patient from sleep should always be considered significant.
- Pain almost always precedes vomiting in surgical causes; converse is true for most gastroenteritis and NSAP (Non specific abdominal pain)
- Exclude life threatening pathology
- BHCG in female of child bearing age

SUMMARY

1. Initial workup of chronic abdominal pain should be focused on differentiating benign functional illness from organic pathology.
2. Features that suggest organic illness include unstable vital signs, weight loss, fever, dehydration, electrolyte abnormalities, symptoms or signs of gastrointestinal blood loss, anemia, or signs of malnutrition.
3. IBS is a chronic continuous or remittent functional GI illness. It has no recognized organic disease and has no specific cause. 50% of referrals to gastroenterologist. Women are more likely to seek medical advice.
4. IBS is the commonest FGID (Functional gastroduodenal disorders). In western populations, up to one in five people report symptoms consistent with IBS. Approximately 50% will consult their doctors and of these up to 30% will be referred by their doctor to a hospital specialist.
5. Diagnostic criteria (Rome III 2006) These criteria state that in the preceding 3 months, there should be at least 3 days/month of recurrent abdominal pain or discomfort associated with two or more of the following:
    - Improvement with defecation
    - Onset associated with a change in frequency of stool
    - Onset associated with a change in form (appearance) of stool.
6. Management: There is no cure, but effective management may lessen the symptoms.

Questions

1) The following are typical symptoms of IBS except:

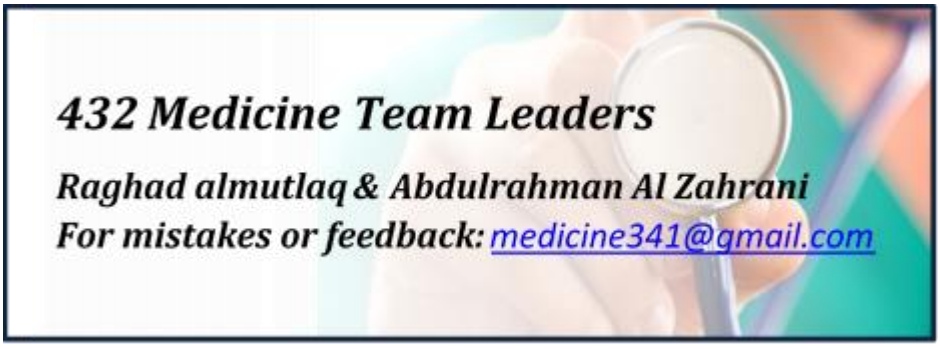
A. Continuous abdominal discomfort with no relationship with eating, defecation or menses.
B. Abdominal pain improving with defecation.
C. Onset of abdominal discomfort is associated with change in form of stool.
D. Onset of abdominal pain is associated with a change from normal stool to hard lumpy stool.
E. Onset of abdominal pain is associated with a change from normal stool to watery stool.

2) Which one of the following is not an alarm feature of patients diagnosed with IBS:

A. PR bleeding.
B. Symptom onset after age of 50.
C. Anemia.
D. Mucus in stool.
E. Nocturnal symptoms.

3) Which one of the following findings is highly suggestive of peritonitis on abdominal examination?

A. Guarding.
B. Rebound tenderness.
C. Murphy's sign.
D. Abdominal distention.
E. Hypoactive bowel sounds.



Answers:

1st Questions: A

2nd Questions: D

3rd Questions: B