ACUTE ABDOMINAL PAIN

VAL SERIO, DO
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, fevers, dysuria or other complaints. No appetite today. ROS otherwise negative.
- PMHx: negative
- PSurgHx: negative
- Meds: none
- NKDA
- Social hx: no alcohol, tobacco or drug use
- Family hx: non-contributory
ABDOMINAL PAIN

- What else do you want to know?
- What is on your differential diagnosis so far?
  - (healthy male with RLQ abd pain....)
- How do you approach the complaint of abdominal pain in general?
- Will review in this lecture:
  - Types of pain
  - History and physical examination
  - Labs and imaging
  - Abdominal pain in special populations (Elderly, HIV)
  - Clinical pearls to help you in the ED/Clinic setting
HPI

- Onset
- Location
- Duration
- Character
- Aggravating Factors
- Reliving Factors
- Change over time
- Associated Conditions
WHAT KIND OF PAIN IS IT?

- **Visceral**
  - Involves hollow or solid organs;
  - Steady ache or vague discomfort to excruciating or colicky pain
  - Poorly localized
  - Epigastric region: stomach, duodenum, biliary tract, CAD
  - Periumbilical: small bowel, appendix, cecum, CAD
  - Suprapubic: colon, sigmoid, GU tract,

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

- **Referred**
  - Produces symptoms not signs
  - Based on developmental embryology
    - Ureteral obstruction → testicular pain
    - Sub-diaphragmatic irritation → ipsilateral shoulder or supraclavicular pain
    - Gynecologic pathology → back or proximal lower extremity
    - Biliary disease → right infrascapular pain
    - MI → epigastric, neck, jaw or upper extremity pain
Ask about relevant ROS

- GI symptoms
  - Nausea, vomiting, hematemesis, anorexia, diarrhea, constipation, bloody stools, melena stools
- GU symptoms
  - Dysuria, frequency, urgency, hematuria, incontinence
- Gyn symptoms
  - Vaginal discharge, vaginal bleeding
- General
  - Fever, lightheadedness
And don’t forget the history

- **GI**
  - Past abdominal surgeries, h/o GB disease, ulcers; FamHx IBD
- **GU**
  - Past surgeries, h/o kidney stones, pyelonephritis, UTI
- **Gyn**
  - Last menses, sexual activity, contraception, h/o PID or STDs, h/o ovarian cysts, past gynecological surgeries, pregnancies
- **Vascular**
  - h/o MI, heart disease, a-fib, anticoagulation, CHF, PVD, Fam Hx of AAA
- **Other medical history**
  - DM, organ transplant, HIV/AIDS, cancer
- **Social**
  - Tobacco, drugs – Especially cocaine, alcohol
- **Medications**
  - NSAIDs, H2 blockers, PPIs, immunosuppression, coumadin
MOVING ON TO THE PHYSICAL EXAM

- General
  - Pallor, diaphoresis, general appearance, level of distress or discomfort, is the patient lying still or moving around in the bed
- Vital Signs
  - Orthostatic VS when volume depletion is suspected
- Cardiac
  - Arrhythmias
- Lungs
  - Pneumonia
- Abdomen
  - Look for distention, scars, masses
  - Auscultate – hyperactive or obstructive BS increase likelihood of SBO fivefold – otherwise not very helpful
  - Palpate for tenderness, masses, aortic aneurysm, organomegaly, rebound, guarding, rigidity
  - Percuss for tympany
  - Look for hernias!
  - rectal exam
- Back
  - CVA tenderness
- Pelvic exam
  - CMT
  - Vaginal discharge – Culture
  - Adenexal mass or fullness
ABDOMINAL FINDINGS

- Guarding
  - Voluntary
    - Contraction of abdominal musculature in anticipation of palpation
    - Diminish by having patient flex knees
  - Involuntary
    - Reflex spasm of abdominal muscles
    - aka: rigidity
    - Suggests peritoneal irritation
- Rebound
  - Present in 1 of 4 patients without peritonitis
  - Pain referred to the point of maximum tenderness when palpating an adjacent quadrant is suggestive of peritonitis
    - Rovsing’s sign in appendicitis
- Rectal exam
  - Little evidence that tenderness adds any useful information beyond abdominal examination
  - Gross blood or melena indicates a GIB
Differential Diagnosis

- Extensive

- 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
## DIFFERENTIAL DIAGNOSIS

- Gastritis, ileitis, colitis, esophagitis
- Ulcers: gastric, peptic, esophageal
- Biliary disease: cholelithiasis, cholecystitis
- Hepatitis, pancreatitis, Cholangitis
- Splenic infarct, Splenic rupture
- Pancreatic psuedocyst
- Hollow viscous perforation
- Bowel obstruction, volvulus
- Diverticulitis
- Appendicitis
- Ovarian cyst
- Ovarian torsion
- Hemias: incarcerated, strangulated
- Kidney stones
- Pyelonephritis
- Hydronephrosis
- Inflammatory bowel disease: crohns, UC
- Gastroenteritis, enterocolitis
- Pseudomembranous colitis, ischemia colitis
- Tumors: carcinomas, lipomas
- Meckels diverticulum
- Testicular torsion
- Epididymitis, prostatitis, orchitis, cystitis
- Constipation
- Abdominal aortic aneurysm, ruptures aneurysm
- Aortic dissection
- Mesenteric ischemia
- Organomegaly

- Hemilith infestation
- Porphyrias
- ACS
- Pneumonia
- Abdominal wall syndromes: muscle strain, hematomas, trauma,
- Neuropathic causes: radicular pain
- Non-specific abdominal pain
- Group A beta-hemolytic streptococcal pharyngitis
- Rocky Mountain Spotted Fever
- Toxic Shock Syndrome
- Black widow envenomation
- Drugs: cocaine induced-ischemia, erythromycin, tetracyclines, NSAIDs
- Mercury salts
- Acute inorganic lead poisoning
- Electrical injury
- Opioid withdrawal
- Mushroom toxicity
- AGA: DKA, AKA
- Adrenal crisis
- Thyroid storm
- Hypo- and hypercalcemia
- Sickle cell crisis
- Vasculitis
- Irritable bowel syndrome
- Ectopic pregnancy
- PID
- Urinary retention
- Ileus, Ogilvie syndrome
MOST COMMON CAUSES IN THE ED

- Non-specific abd pain 34%
- Appendicitis 28%
- Biliary tract dz 10%
- SBO 4%
- Gyn disease 4%
- Pancreatitis 3%
- Renal colic 3%
- Perforated ulcer 3%
- Cancer 2%
- Diverticular dz 2%
- Other 6%
WHAT KIND OF TESTS SHOULD YOU ORDER?

- Depends what you are looking for!
  - Abdominal series
    - 3 views: upright chest, flat view of abdomen, upright view of abdomen
    - Limited utility: restrict use to patients with suspected obstruction or free air
  - Ultrasound
    - Good for diagnosing AAA but not ruptured AAA
    - Good for pelvic pathology
  - CT abdomen/pelvis
    - Noncontrast for free air, renal colic, ruptured AAA, (bowel obstruction)
    - Contrast study for abscess, infection, inflammation, unknown cause
  - MRI
    - Most often used when unable to obtain CT due to contrast issue

- Labs
  - CBC: “What’s the white count?”
  - Chemistries
  - Liver function tests, Lipase
  - Coagulation studies
  - Urinalysis, urine culture
  - GC/Chlamydia swabs
  - Lactate
DISPOSITION

• Depends on the source
• Non-specific abdominal pain
  • No source is identified
  • Vital signs are normal
  • Non specific abdominal exam, no evidence of peritonitis or severe pain
• Patient improves during ED visit
• Patient able to take fluids
• Have patient return to ED in 12-24 hours for re-examination if not better or if they develop new symptoms
Back to Case #1….24 yo with RLQ pain

- Physical exam:
  - T: 37.8, HR: 95, BP 118/76, R: 18, O2 sat: 100% room air
  - Uncomfortable appearing, slightly pale
  - Abdomen: soft, non-distended, tender to palpation in RLQ with mild guarding; hypoactive bowel sounds
  - Genital exam: normal

- **What is your differential diagnosis and what do you do next?**
APPENDICITIS

- Classic presentation
  - Periumbilical pain
  - Anorexia, nausea, vomiting
  - Pain localizes to RLQ
  - Occurs only in ½ to 2/3 of patients
- 26% of appendices are retrocecal and cause pain in the flank; 4% are in the RUQ
- A pelvic appendix can cause suprapubic pain, dysuria
- Males may have pain in the testicles

- Findings
  - Depends on duration of symptoms
  - Rebound, voluntary guarding, rigidity, tenderness on rectal exam
  - Psoas sign
  - Obturator sign
  - Fever (a late finding)
- Urinalysis abnormal in 19-40%
- CBC is not sensitive or specific
- Abdominal xrays
  - Appendiceal fecalith or gas, localized ileus, blurred right psoas muscle, free air
- CT scan
  - Pericecal inflammation, abscess, periappendiceal phlegmon, fluid collection, localized fat stranding
APPENDICITIS: PSOAS SIGN
APPENDICITIS: PSOAS SIGN
APPENDICITIS: OBTURATOR SIGN

Passively flex right hip and knee then internally rotate the hip
APPENDICITIS: CT FINDINGS

- Cecum
- Abscess, fat stranding
APPENDICITIS

**Diagnosis**
- WBC
- Clinical appendicitis – call your surgeon
- Maybe appendicitis - CT scan
- Not likely appendicitis – observe for 6-12 hours or re-examination in 12 hours

**Treatment**
- NPO
- IVFs
- Preoperative antibiotics – decrease the incidence of postoperative wound infections
  - Cover anaerobes, gram-negative and enterococci
  - Zosyn 3.375 grams IV or Unasyn 3 grams IV
- Analgesia
CASE #2

- 68 yo F with 2 days of LLQ abd pain, diarrhea, fevers/chills, nausea; vomited once at home.
- PMHx: HTN, diverticulosis
- PSurgHx: negative
- Meds: HCTZ
- NKDA
- Social hx: no alcohol, tobacco or drug use
- Family hx: non-contributory
CASE #2 EXAM

• T: 37.6, HR: 100, BP: 145/90, R: 19, O2sat: 99% room air
• Gen: uncomfortable appearing, slightly pale
• CV/Pulmonary: normal heart and lung exam, no LE edema, normal pulses
• Abd: soft, moderately TTP LLQ
• Rectal: normal tone, guiac neg brown stool

• What is your differential diagnosis & what next?
DIVERTICULITIS

**Risk factors**
- Diverticula
- Increasing age

**Clinical features**
- Steady, deep discomfort in LLQ
- Change in bowel habits
- Urinary symptoms
- Tenesmus
- Paralytic ileus
- SBO

**Physical Exam**
- Low-grade fever
- Localized tendernessness
- Rebound and guarding
- Left-sided pain on rectal exam
- Occult blood
- Peritoneal signs (suggest perforation or abscess rupture)
DIVERTICULITIS

**Diagnosis**
- CT scan (IV and oral contrast)
  - Pericolic fat stranding
  - Diverticula
  - Thickened bowel wall
  - Peridiverticular abscess
- Leukocytosis present in only 36% of patients

**Treatment**
- Fluids
- Correct electrolyte abnormalities
- NPO
- Abx: gentamicin AND metronidazole OR clindamycin OR levaquin/flagyl
- For outpatients (non-toxic)
  - liquid diet x 48 hours
  - cipro and flagyl
CASE #3

- 46 yo M with hx of alcohol abuse with 3 days of severe upper abd pain, vomiting, subjective fevers.
- Med Hx: negative
- Surg Hx: negative
- Meds: none; Allergies: NKDA
- Social hx: homeless, heavy alcohol use, smokes 2ppd, no drug use
CASE #3 EXAM

Vital signs: T: 37.4, HR: 115, BP: 98/65, R: 22, O2sat: 95% room air

• General: ill-appearing, appears in pain
• CV: tachycardic, normal heart sounds, pulses normal
• Lungs: clear
• Abdomen: mildly distended, moderately TTP epigastric, +voluntary guarding
• Rectal: heme neg stool

• What is your differential diagnosis & what next?
PANCREATITIS

• Risk Factors
  • Alcohol
  • Gallstones
  • Drugs
    • Amiodarone, antivirals, diuretics, NSAIDs, antibiotics, more…..
  • Severe hyperlipidemia
  • Idiopathic

• Clinical Features
  • Epigastric pain
  • Constant, boring pain
  • Radiates to back
  • Severe
  • N/V
  • bloating

• Physical Findings
  • Low-grade fevers
  • Tachycardia, hypotension
  • Respiratory symptoms
    • Atelectasis
    • Pleural effusion
  • Peritonitis – a late finding
  • Ileus
  • Cullen sign*
    • Bluish discoloration around the umbilicus
  • Grey Turner sign*
    • Bluish discoloration of the flanks

*Signs of hemorrhagic pancreatitis
PANCREATITIS

**Diagnosis**
- **Lipase**
  - Elevated more than 2 times normal
  - Sensitivity and specificity >90%
- **Amylase**
  - Nonspecific
  - Don’t bother...
- **RUQ US** if etiology unknown
- **CT scan**
  - Insensitive in early or mild disease
  - **NOT** necessary to diagnose pancreatitis
  - Useful to evaluate for complications

**Treatment**
- **NPO**
- IV fluid resuscitation
  - Maintain urine output of 100 mL/hr
- **NGT** if severe, persistent nausea
- No antibiotics unless severe disease
  - E coli, Klebsiella, enterococci, staphylococci, pseudomonas
  - Imipenem or cipro with metronidazole
- **Mild disease**, tolerating oral fluids
  - Discharge on liquid diet
  - Follow up in 24-48 hours
- All others, admit
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.
• Med Hx: CAD, HTN, CHF
• Surg Hx: appendectomy
• Meds: Aspirin, Plavix, Metoprolol, Lasix
• Social hx: smokes 1ppd, denies alcohol or drug use, lives alone
CASE #4 EXAM

- T: 99.1, HR: 70, BP: 90/45, R: 22, O2sat: 96% room air
- General: elderly, thin male, ill-appearing
- CV: normal
- Lungs: clear
- Abd: mildly distended and diffusely tender to palpation, +rebound and guarding
- Rectal: blood-streaked heme + brown stool

What is your differential diagnosis & what next?
PEPTIC ULCER DISEASE

- **Risk Factors**
  - H. pylori
  - NSAIDs
  - Smoking
  - Hereditary

- **Clinical Features**
  - Burning epigastric pain
  - Sharp, dull, achy, or “empty” or “hungry” feeling
  - Relieved by milk, food, or antacids
  - Awakens the patient at night
  - Nausea, retrosternal pain and belching are NOT related to PUD
  - Atypical presentations in the elderly

- **Physical Findings**
  - Epigastric tenderness
  - Severe, generalized pain may indicate perforation with peritonitis
  - Occult or gross blood per rectum or NGT if bleeding
PEPTIC ULCER DISEASE

• **Diagnosis**
  - Rectal exam for occult blood
  - CBC
    - Anemia from chronic blood loss
  - LFTs
    - Evaluate for GB, liver and pancreatic disease
  - Definitive diagnosis is by EGD or upper GI barium study

• **Treatment**
  - Empiric treatment
    - Avoid tobacco, NSAIDs, aspirin
    - PPI or H2 blocker
  - Immediate referral to GI if:
    - >45 years
    - Weight loss
    - Long h/o symptoms
    - Anemia
    - Persistent anorexia or vomiting
    - Early satiety
    - GIB
Here is your patient’s x-ray....
PERFORATED PEPTIC ULCER

- Abrupt onset of severe epigastric pain followed by peritonitis
- IV, oxygen, monitor
- CBC, T&C, Lipase
- Acute abdominal x-ray series
  - Lack of free air does NOT rule out perforation
- Broad-spectrum antibiotics
- Surgical consultation
CASE #5

- 35 yo healthy F to ED c/o nausea and vomiting since yesterday along with generalized abdominal pain. No fevers/chills, +anorexia. Last stool 2 days ago.
- Med Hx: negative
- Surg Hx: s/p hysterectomy (for fibroids)
- Meds: none, Allergies: NKDA
- Social Hx: denies alcohol, tobacco or drug use
- Family Hx: non-contributory
CASE #5 EXAM

- T: 36.9, HR: 100, BP: 130/85, R: 22, O2 sat: 97% room air
- General: mildly obese female, vomiting
- CV: normal
- Lungs: clear
- Abd: moderately distended, mild TTP diffusely, hypoactive bowel sounds, no rebound or guarding

What is your differential and what next?
UPRIGHT ABD X-RAY
BOWEL OBSTRUCTION

• Mechanical or nonmechanical causes
  • #1 - Adhesions from previous surgery
  • #2 - Groin hernia incarceration

• Clinical Features
  • Crampy, intermittent pain
  • Periumbilical or diffuse
  • Inability to have BM or flatus
  • N/V
  • Abdominal bloating
  • Sensation of fullness, anorexia

• Physical Findings
  • Distention
  • Tympany
  • Absent, high pitched or tinkling bowel sound or “rushes”
  • Abdominal tenderness: diffuse, localized, or minimal
BOWEL OBSTRUCTION

- **Diagnosis**
  - CBC and electrolytes
    - Electrọlyte abnormalities
    - WBC >20,000 suggests bowel necrosis, abscess or peritonitis
  - Abdominal x-ray series
    - Flat, upright, and chest x-ray
    - Air-fluid levels, dilated loops of bowel
    - Lack of gas in distal bowel and rectum
  - CT scan
    - Identify cause of obstruction
    - Delineate partial from complete obstruction

- **Treatment**
  - Fluid resuscitation
  - NGT
  - Analgesia
  - Surgical consult
  - Hospital observation for ileus
  - OR for complete obstruction
    - Peri-operative antibiotics
      - Zosyn or unasyn
CASE #6

- 48 yo obese F with one day hx of upper abd pain after eating, does not radiate, is intermittent cramping pain, +N/V, no diarrhea, subjective fevers. No prior similar symptoms.
- Med hx: denies
- Surg hx: denies
- No meds or allergies
- Social hx: no alcohol, tobacco or drug use
CASE #6 EXAM

• T: 100.4, HR: 96, BP: 135/76, R: 18, O2 sat: 100% room air
• General: moderately obese, no acute distress
• CV: normal
• Lungs: clear
• Abd: moderately TTP RUQ, +Murphy’s sign, non-distended, normal bowel sounds

• What is your differential and what next?
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
CHOLECYSTITIS

Diagnosis
- CBC, LFTs, Lipase
  - Elevated alkaline phosphatase
  - Elevated lipase suggests gallstone pancreatitis
- RUQ US
  - Thicken gallbladder wall
  - Pericholecystic fluid
  - Gallstones or sludge
  - Sonographic murphy sign
- HIDA scan
  - more sensitive & specific than US

H&P and laboratory findings have a poor predictive value – if you suspect it, get the US

Treatment
- Surgical consult
- IV fluids
- Correct electrolyte abnormalities
- Analgesia
- Antibiotics
  - Ceftriaxone 1 gram IV
  - If septic, broaden coverage to zosyn, unasyn, imipenem or add anaerobic coverage to ceftriaxone
- NGT if intractable vomiting
CASE #7

- 34 yo healthy M with 4 hour hx of sudden onset left flank pain, +nausea/vomiting; no prior hx of similar symptoms; no fevers/chills. +difficulty urinating, no hematuria. Feels like has to urinate but cannot.
- PMHx: neg
- Surg Hx: neg
- Meds: none, Allergies: NKDA
- Social hx: occasional alcohol, denies tobacco or drug use
- Family hx: non-contributory
T: 98.9, HR: 110, BP: 150/90, R: 20, O2 sat: 99% room air

General: writhing around on stretcher in pain, +diaphoretic

CV: tachycardic, heart sounds normal

Lungs: clear

Abd: soft; non-tender

Back: mild left CVA tenderness

Genital exam: normal

Neuro exam: normal

What is your differential diagnosis and what next?
RENAL COLIC

**Clinical Features**
- Acute onset of severe, dull, achy visceral pain
- Flank pain
- Radiates to abdomen or groin including testicles
- N/V and sometimes diaphoresis
- Fever is unusual
- Waxing and waning symptoms

**Physical Findings**
- Non tender or mild tenderness to palpation
- Anxious, pacing, writhing in bed – unable to sit still
RENAL COLIC

- **Diagnosis**
  - Urinalysis
    - RBCs
    - WBCs suggest infection or other etiology for pain (ie appendicitis)
  - CBC
    - If infection suspected
  - BUN/Creatinine
    - In older patients
    - If patient has single kidney
    - If severe obstruction is suspected
  - CT scan
    - In older patients or patients with comorbidities (DM, SCD)
    - Not necessary in young patients or patients with h/o stones that pass spontaneously

- **Treatment**
  - IV fluid boluses
  - Analgesia
    - Narcotics
    - NSAIDS
    - If no renal insufficiency
  - Strain all urine
  - Follow up with urology in 1-2 weeks
  - If stone > 5mm, consider admission and urology consult
  - If toxic appearing or infection found
    - IV antibiotics
    - Urologic consult
Just a few more to go….hang in there

- Ovarian torsion
- Testicular torsion
- GI bleeding
- Abd pain in the Elderly
OVARIAN TORSION

- Acute onset severe pelvic pain
- May wax and wane
- Possible hx of ovarian cysts
- Menstrual cycle: midcycle also possibly in pregnancy
- Can have variable exam:
  - acute, rigid abdomen, peritonitis
  - Fever
  - Tachycardia
  - Decreased bowel sounds
- May look just like Appendicitis

- Obtain
- Labs
  - CBC, beta-hCG, electrolytes, T&S
- IV fluids
- NPO
- Pain medications
- GYN consult
TESTICULAR TORSION

- Sudden onset of severe testicular pain

- If torsion is repaired **within 6 hours** of the initial insult, salvage rates of 80-100% are typical. **These rates decline to nearly 0% at 24 hours.**

- Approximately 5-10% of torsed testes spontaneously detorse, but the risk of retorsion at a later date remains high.

- Most occur in males less than 20yrs old but 10% of affected patients are older than 30 years.

- Detorsion
- Emergent urology consult
- Ultrasound with doppler
ABDOMINAL PAIN IN THE ELDERLY

- Mortality rate for abdominal pain in the elderly is 11-14%
- Perception of pain is altered
- Altered reporting of pain: stoicism, fear, communication problems

- Most common causes:
  - Cholecystitis
  - Appendicitis
  - Bowel obstruction
  - Diverticulitis
  - Perforated peptic ulcer

- Don’t miss these:
  - AAA, ruptured AAA
  - Mesenteric ischemia
  - Myocardial ischemia
  - Aortic dissection
ABDOMINAL PAIN IN THE ELDERLY

• Appendicitis – do not exclude it because of prolonged symptoms. Only 20% will have fever, N/V, RLQ pain and ↑WBC
• Acute cholecystitis – most common surgical emergency in the elderly.
• Perforated peptic ulcer – only 50% report a sudden onset of pain. In one series, missed diagnosis of PPU was leading cause of death.
• Mesenteric ischemia – we make the diagnosis only 25% of the time. Early diagnosis improves chances of survival. Overall survival is 30%.
• Increased frequency of abdominal aortic aneurysms
• AAA may look like renal colic in elderly patients
MESENTERIC ISCHEMIA

- Consider this diagnosis in all elderly patients with risk factors
  - Atrial fibrillation, recent MI
  - Atherosclerosis, CHF, digoxin therapy
  - Hypercoagulability, prior DVT, liver disease
- Severe pain, often refractory to analgesics
- Relatively normal abdominal exam
- Embolic source: sudden onset (more gradual if thrombosis)
- Nausea, vomiting and anorexia are common
- 50% will have diarrhea
- Eventually stools will be guaiac-positive
- Metabolic acidosis and extreme leukocytosis when advanced disease is present (bowel necrosis)
- Diagnosis requires mesenteric angiography or CT angiography
ABDOMINAL AORTIC ANEURYSM

- Risk increases with age, women >70, men >55
- Abdominal pain in 70-80% (not back pain!)
- Back pain in 50%
- Sudden onset of significant pain
- Atypical locations of pain: hips, inguinal area, external genitalia
- Syncope can occur
- Hypotension may be present
- Palpation of a tender, enlarged aorta on exam is an important finding
- May present with hematuria
- Suspect it in any older patient with back, flank or abdominal pain especially with a renal colic presentation
- Ultrasound can reveal the presence of a AAA but is not helpful for rupture. CT abd/pelvis without contrast for stable patients. High suspicion in an unstable patient requires surgical consult and emergent surgery.
GI BLEEDING

• Upper
  • Proximal to Ligament of Treitz
  • Peptic ulcer disease most common
  • Erosive gastritis
  • Esophagitis
  • Esophagus and gastric varices
  • Mallory-Weiss tear

• Lower
  • Hemorrhoids most common
  • Diverticulosis
  • Angiodysplasia
MEDICAL HISTORY

• Common Presentation:
  Hematemesis (source proximal to right colon)
  Coffee-ground emesis
  Melena
  Hematochezia (distal colorectal source)

• High level of suspicion with
  • Hypotension
  • Tachycardia
  • Angina
  • Syncope
  • Weakness
  • Confusion
  • Cardiac arrest
LABS AND IMAGING

- Type and crossmatch: Most important!
- Other studies: CBC, BUN, creatinine, electrolyte, coagulation studies, LFTs
- Initial Hct often will not reflect the actual amount of blood loss
- Abdominal and chest x-rays of limited value for source of bleed
- Nasogastric (NG) tube
  - Gastric lavage
- Angiography
- Bleeding scan
- Endoscopy/colonoscopy
MANAGEMENT IN THE ED

- **ABCs** of Resuscitation
- **AIRWAY:**
  - Consider definitive airway to prevent aspiration of blood
- **BREATHING**
  - Supplemental Oxygen
  - Continuous pulse oximetry
• Circulation
  • Cardiac monitoring
  • Volume replacement
    • Crystalloids
    • 2 large-bore intravenous lines (18g or larger)
• Blood Products
  • General guidelines for transfusion
    • Active bleeding
    • Failure to improve perfusion and vital signs after the infusion of 2 L of crystalloid
    • Lower threshold in the elderly
  • **NOT BASED ON INITIAL HEMATOCRIT ALONE**
• Coagulation factors replaced as needed
• Urinary catheter with hypotension to monitor output
MANAGEMENT

- Early GI consult for severe bleeds
- **Therapeutic Endoscopy**: band ligation or injection sclerotherapy
  - Also…electrocoagulation, heater probes, and lasers
- **Drug Therapy**: somatostatin, octreotide, vasopressin, PPIs
- **Balloon tamponade**: adjunct or temporizing measure
- **Surgery**: if all else fails
DISPOSITION

- ADMIT
  - Certain patients with lower GI bleeding may be discharged for Outpatient work-up
- Patients are risk stratified by clinical and endoscopic criteria
- Independent predictors of adverse outcomes in upper GI bleeding (Corley and colleagues):
  - Initial hematocrit < 30 %
  - Initial SBP < 100 mm Hg
  - Red blood in the NG lavage
  - History of cirrhosis or ascites on examination
  - History of vomiting red blood
ABDOMINAL PAIN CLINICAL PEARLS

- Significant abdominal tenderness should never be attributed to gastroenteritis
- Incidence of gastroenteritis in the elderly is very low
- Always perform genital examinations when lower abdominal pain is present — in males and females, in young and old
- In older patients with renal colic symptoms, exclude AAA
- Severe pain should be taken as an indicator of serious disease
- Pain awakening the patient from sleep should always be considered significant
- Sudden, severe pain suggests serious disease
- Pain almost always precedes vomiting in surgical causes; converse is true for most gastroenteritis and NSAP
- Acute cholecystitis is the most common surgical emergency in the elderly
- A lack of free air on a chest x-ray does NOT rule out perforation
- Signs and symptoms of PUD, gastritis, reflux and nonspecific dyspepsia have significant overlap
- If the pain of biliary colic lasts more than 6 hours, suspect early cholecystitis