

# Acute Abdomen

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# Basic Definition

- The term acute abdomen refers to a **sudden, severe** abdominal pain of unclear etiology that is less than **24 hours** in duration.
- It is in many cases a medical emergency, requiring urgent and specific diagnosis.
- Several causes need surgical treatment.

- Signs and symptoms of intra-abdominal disease usually best treated by surgery
- Proper eval and management requires one to recognize:
  - 1. Does this patient **need surgery**?
  - 2. Is it **emergent**, urgent, or can wait?
- In other words, is the patient **unstable** or stable?
- Learn to think in “worst-case” scenario
- But remember **medical causes** of abd pain

# Clinical Diagnosis

- **Characterizing** the **pain** is the key
  - Onset, duration, location, character
- Visceral pain → **dull & poorly localized**
  - i.e. distension, inflammation or ischemia
- Parietal pain → **sharper, better localized**
  - Sharp “RUQ pain”(chol’y), “LLQ pain”(divertic)
- Kidney / ureter → flank pain

# Clinical Diagnosis – Pain cont'd

- **Location**

- Upper abdomen → PUD, chol'y, pancreatitis
- Lower abdomen → Divertic, ovary cyst..
- Mid abdomen → early app'y, SBO..

- **Migratory pattern**

- Epigastric → Peri-umbil → RLQ = Acute app.
- Localized pain → Diffuse = Diffuse peritonitis

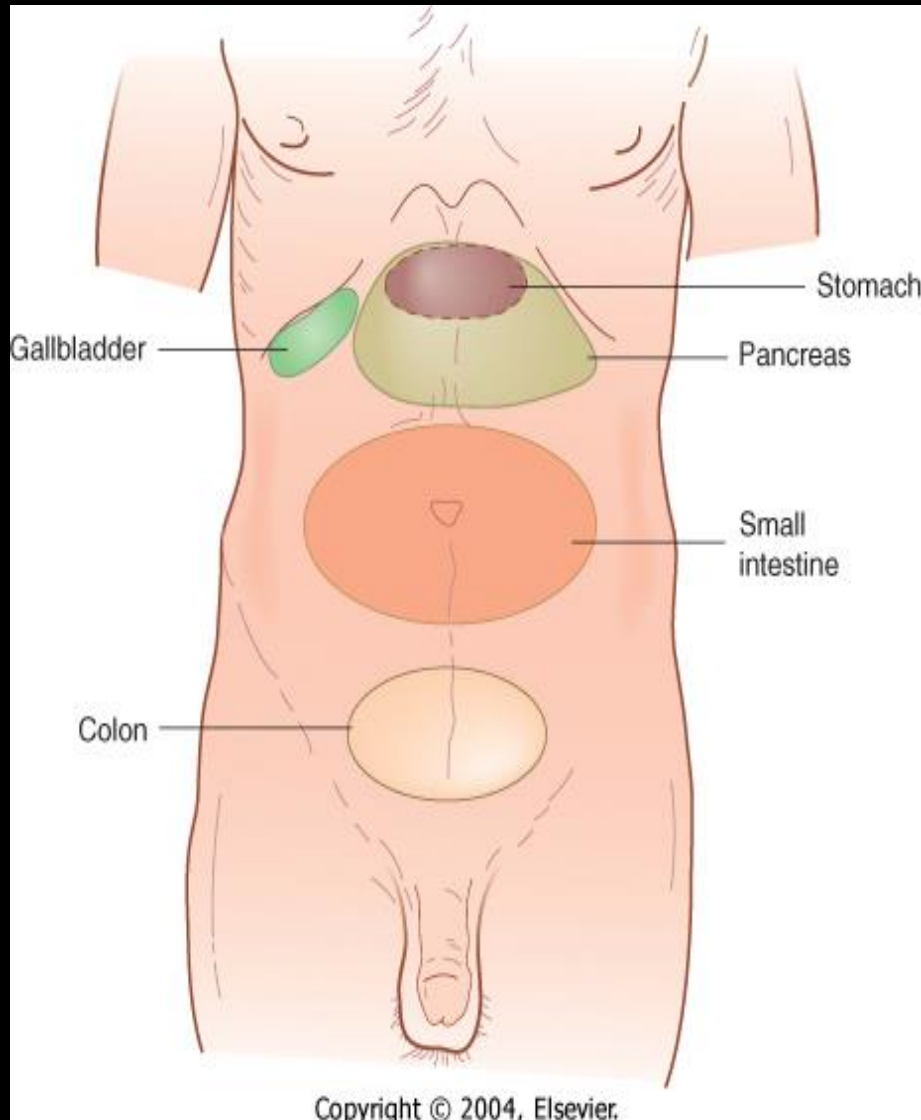
# Clinical Diagnosis

- “Referred pain”
  - Biliary disease → R shoulder or back
  - Sub-left diaphragm abscess → L shoulder
  - Above diaphragm (lungs) → Neck/shoulder

# Other history

- GI symptoms
  - Nausea, emesis (? bilious or bloody)
  - Constipation, obstipation (last BM or flatus)
  - Diarrhea (? bloody)
  - Both Nausea/Diarrhea present *usu.* medical
  - Change in sx w eating?
- NSAID use (perf DU)
- Jaundice, acholic stools, dark urine
- Drinking history (pancreas)
- Prior surgeries (adhesions → SBO, ?still have gallbladder & appendix)
- History of hernias
- Urine output (dehydrated)
- Constitutional Sx
  - Fevers/chills
- Sexual history

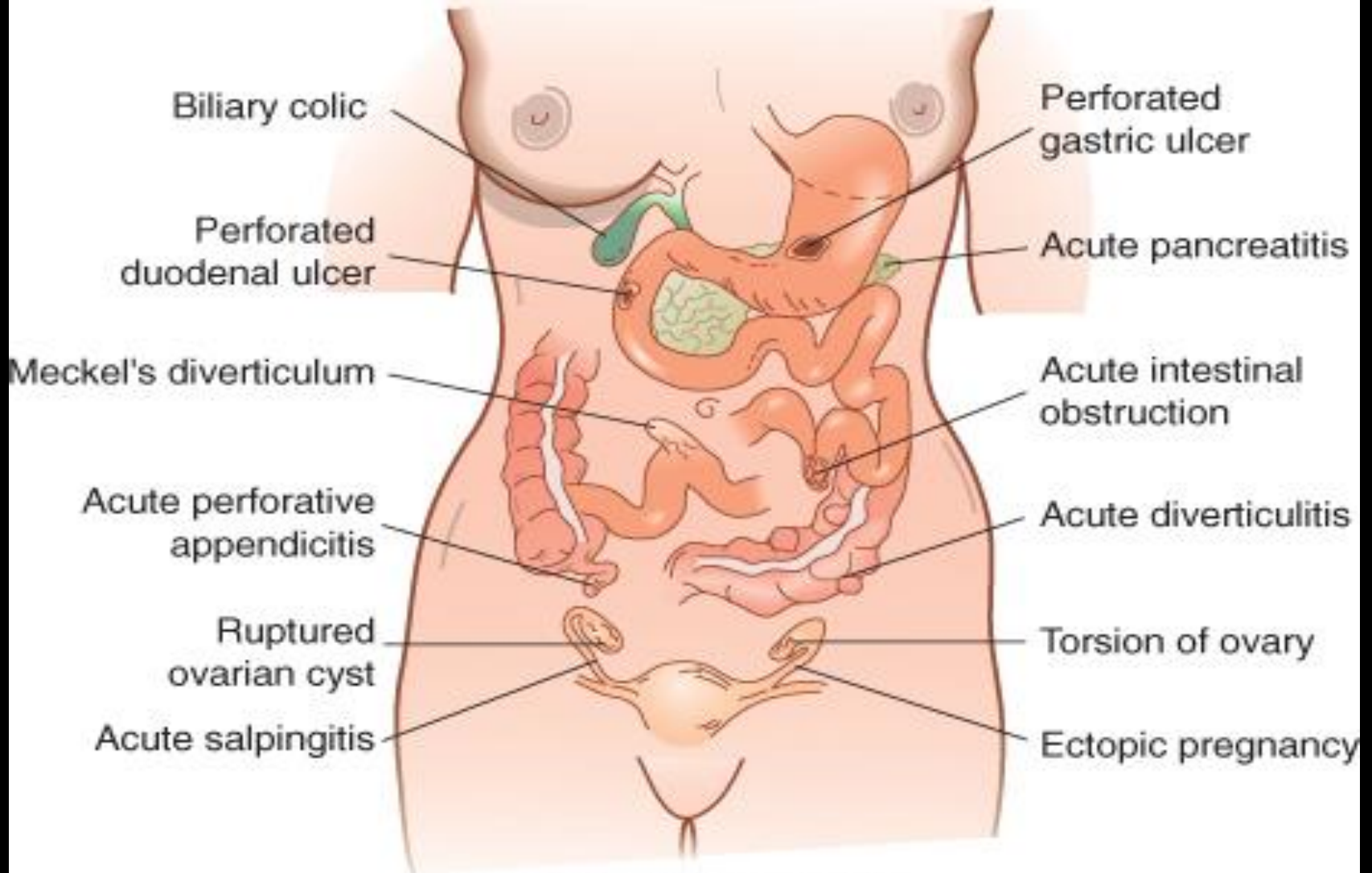
# Clinical Diagnosis



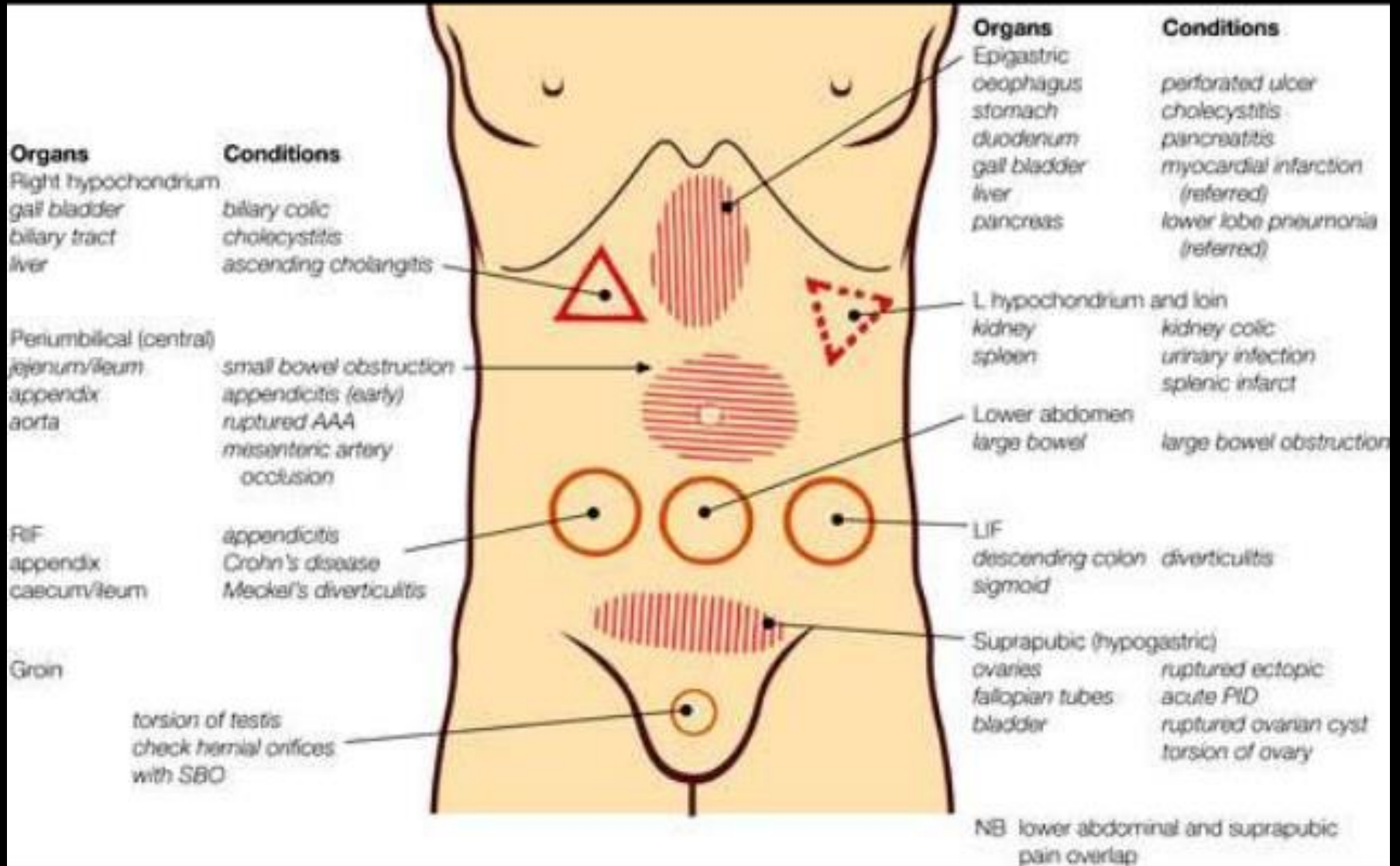
- **Location of pain by organ**
- **RUQ**
  - Gallbladder
- **Epigastrium**
  - Stomach
  - Pancreas
- **Mid abdomen**
  - Small intestine
- **Lower abdomen**
  - Colon, GYN pathology



# Clinical Diagnosis



# Typical sites of various causes of acute abdominal pain



# Think **Broad** categories for DDx

- Inflammation
- Obstruction (**colic**)
- Ischemia (**pain does not decrease with pain killer**)
- Perforation (any of above can end here)
  - Prolonged ischemia → perforation

## Inflammation versus Obstruction

Organ	Lesion
Stomach	Gastric Ulcer Duodenal Ulcer
Biliary Tract	Acute chol'y +/- choledocholithiasis
Pancreas	Acute, recurrent, or chronic pancreatitis
Small Intestine	Crohn's disease Meckel's diverticulum
Large Intestine	Appendicitis Diverticulitis

Location	Lesion
Small Bowel Obstruction	Adhesions Bulges Cancer Crohn's disease Gallstone ileus Intussusception Volvulus
Large Bowel Obstruction	Malignancy Volvulus: cecal or sigmoid Diverticulitis

# Ischemia / Perforation

- **Acute mesenteric ischemia**
  - Usually acute occlusion of the SMA from thrombus or embolism
- **Chronic mesenteric ischemia**
  - Typically smoker, vasculopath with severe atherosclerotic vessel disease
- **Ischemic colitis**
- Any inflammation, obstructive, or ischemic process can progress to perforation
- **Ruptured abdominal aortic aneurysm**

# GYN Etiologies

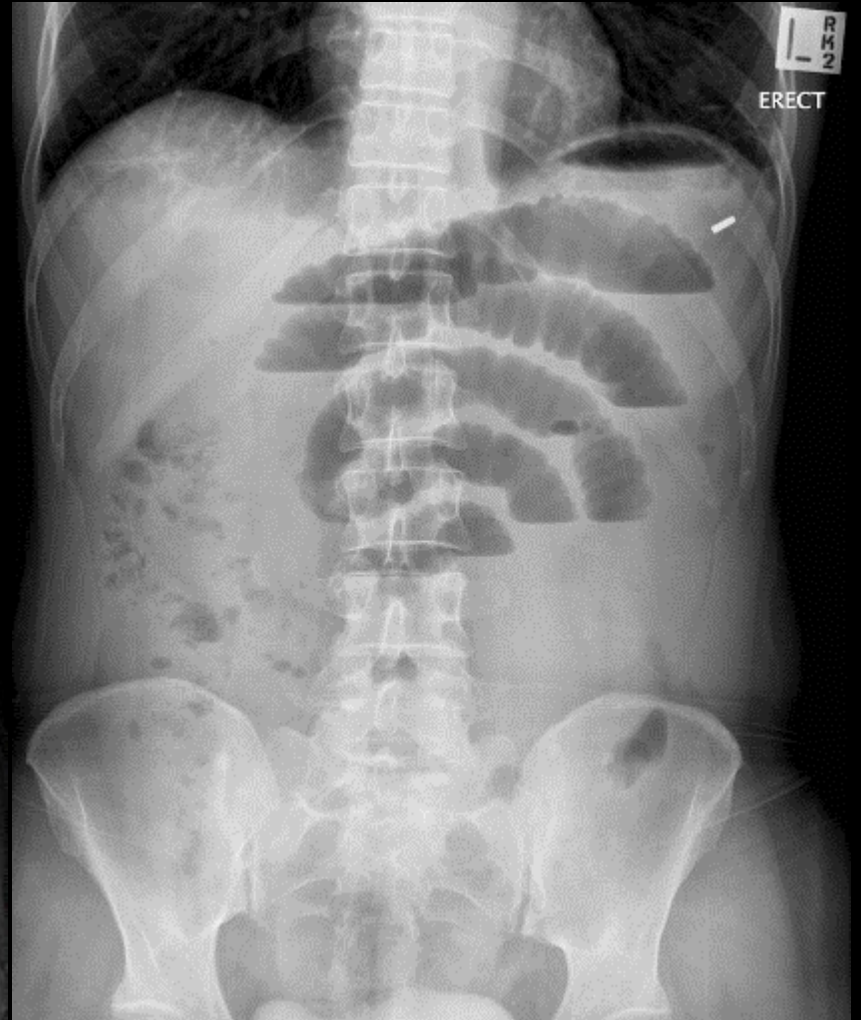
Organ	Lesion
Ovary	Ruptured graafian follicle Torsion of ovary Tubo-ovarian abscess (TOA)
Fallopian tube	Ectopic pregnancy Acute salpingitis Pyosalpinx
Uterus	Uterine rupture Endometritis

# Labs & Imaging

Test	Reason
CBC w diff	Left shift can be very telling
BMP	N/V, lytes, acidosis, dehydration
Amylase	Pancreatitis, perf DU, bowel ischemia
LFT	Jaundice, hepatitis
UA	GU- UTI, stone, hematuria
Beta-hCG	Ectopic

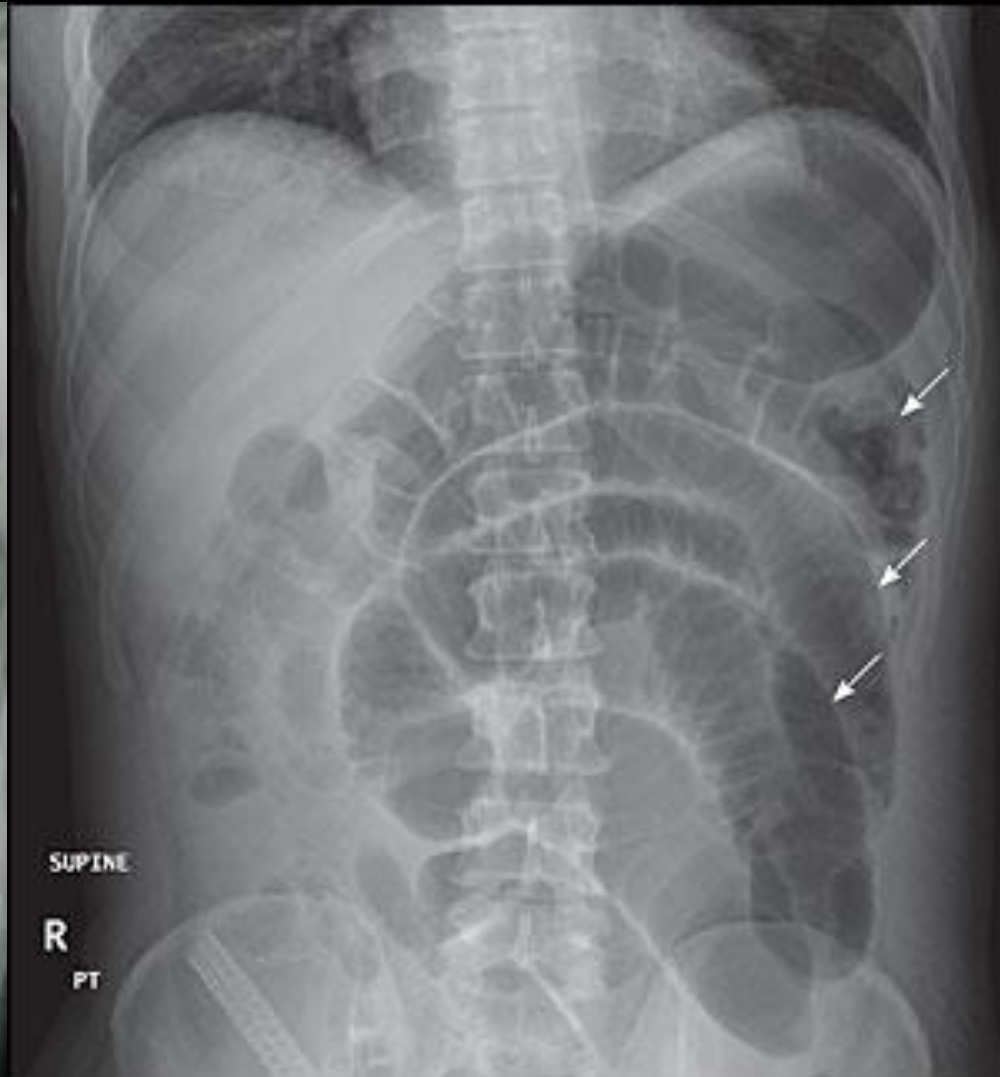
Test	Reason
KUB Flat & Upright	SBO/LBO, free air, stones
Ultrasound	Chol'y, jaundice GYN pathology Free fluid
<b>CT scan</b> -Diagnostic accuracy	Anatomic dx Case not straightforward

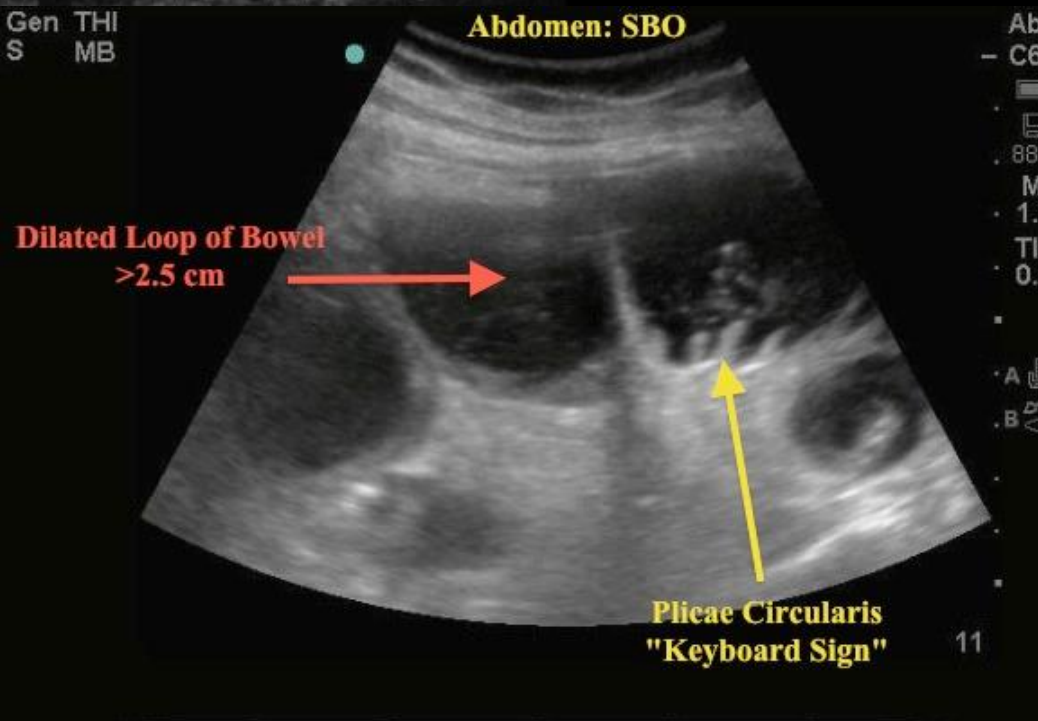
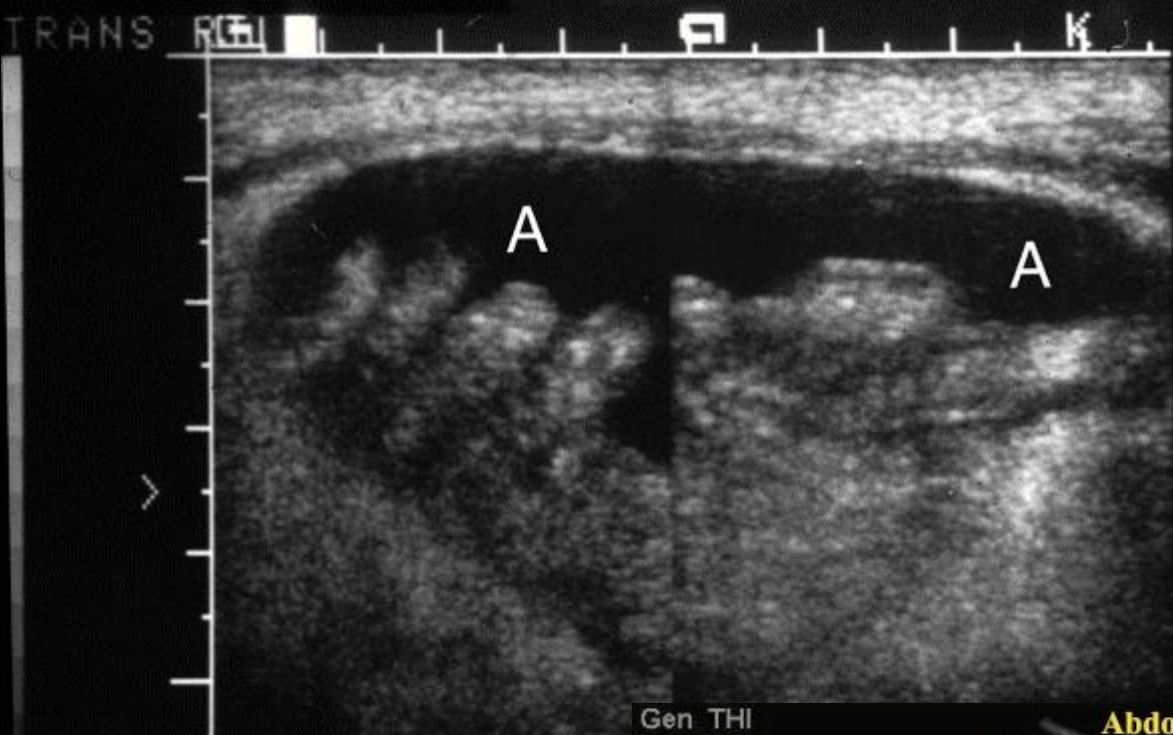
# Acute Abdomen





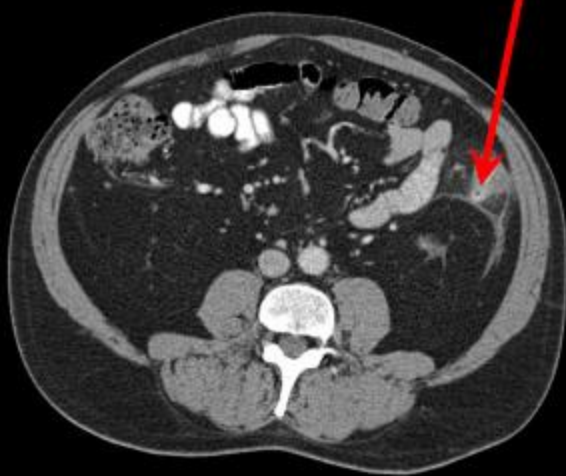
# Acute Abdomen





Acute diverticulitis

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# CT scan



What is the diagnosis?

Acute appendicitis

# Non-Surgical Causes by Systems

System	Disease	System	Disease
Cardiac	Myocardial infarction Acute pericarditis	Endocrine	Diab ketoacidosis Addisonian crisis
Pulmonary	Pneumonia Pulmonary infarction PE	Metabolic	Acute porphyria Mediterranean fever Hyperlipidemia
GI	Acute pancreatitis Gastroenteritis Acute hepatitis	Musculo- skeletal	Rectus muscle hematoma
GU	Pyelonephritis	CNS PNS	Tabes dorsalis (syph) Nerve root compression
Vascular	Aortic dissection	Heme	Sickle cell crisis

# Decision to operate

- **Peritonitis**
  - Tenderness w/ rebound, involuntary guarding
- **Severe / unrelenting pain**
- **“Unstable”** (hemodynamically, or septic)
  - Tachycardic, hypotensive, white count, fever
- Intestinal ischemia, including strangulation
- Pneumoperitoneum
- Complete or “high grade” obstruction

# Special Circumstances

- Situations making diagnosis difficult
  - *Stroke or spinal cord injury*
  - *Influence of drugs or alcohol*
- Severity of disease can be masked by:
  - *Steroids*
  - *Immunosuppression (i.e. AIDS)*
  - Threshold to operate must be even lower



# Results

- Careful history (pain, other GI symptoms)
- Remember DDX in **broad** categories
- Narrow DDX based on hx, exam, labs, imaging
- Always perform ABC, Resuscitate before Dx
- If patient's sick or "toxic", get to OR (surgical emergency)
  - Ideally, resuscitate patients before going to the OR
- Don't forget GYN/medical causes, special situations
- For acute abdomen, think of these commonly (below)

Perf DU	Appendicitis +/- perforation	Diverticulitis +/- perforation	Bowel obstruction
Cholecystitis	Ischemic or perf bowel	Ruptured aneurysm	Acute pancreatitis