Acute Abdomen

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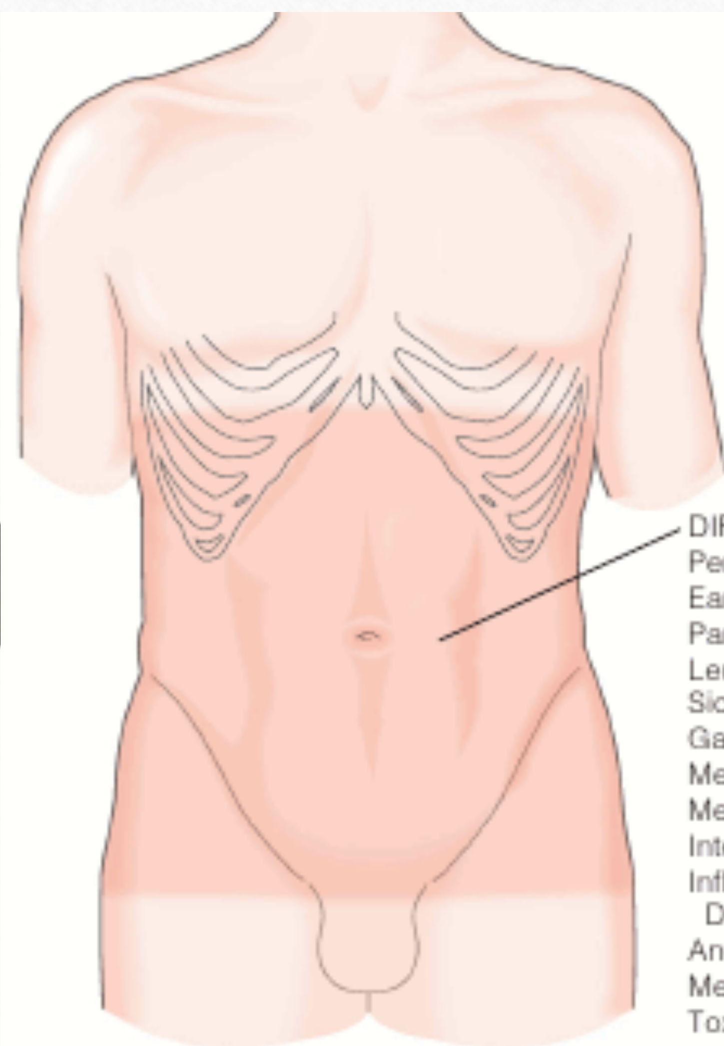
- Basic Definition and Principles
- Clinical Diagnosis / DDx
  - Characterizing the pain
  - Other history to elicit
  - Broad differential
  - History & Physical / Labs / Imaging
  - Non-surgical causes of acute abdomen
- Clinical Management
- Decision to Operate
- Atypical presentations

Basic Definition and Principles

- Signs and symptoms of intra-abdominal disease that is ***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 potentially unstable?
- Learn to think in “worst-case” scenario
- Remember medical causes of abdominal pain
  - AFTER you rule out surgical causes!

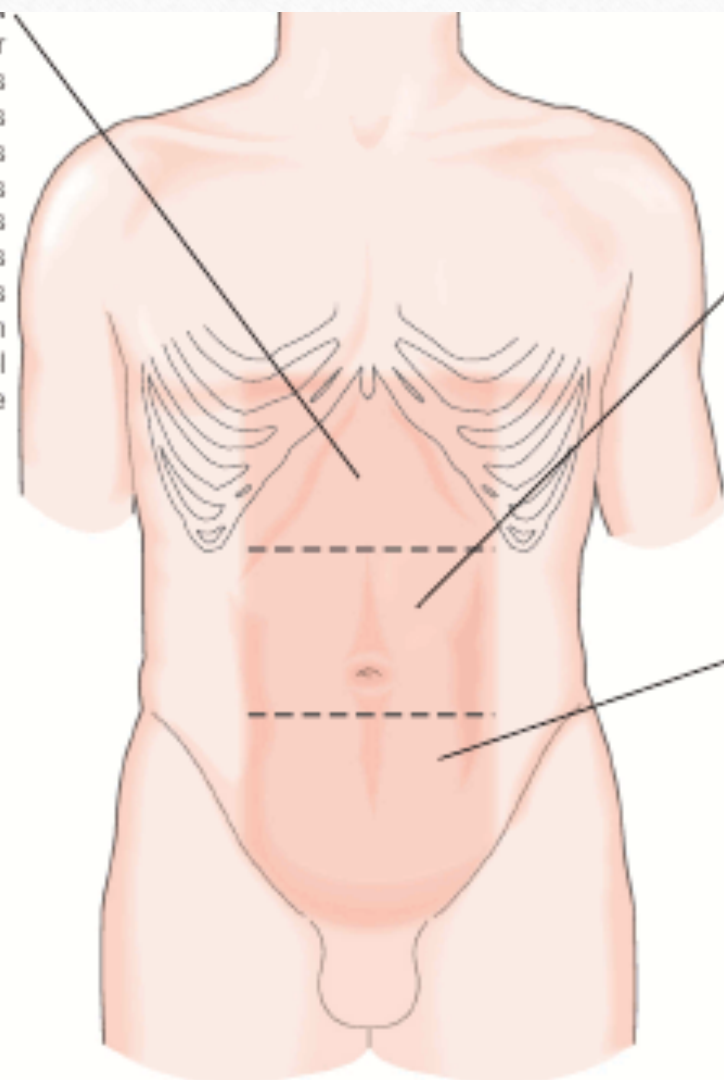
Clinical Diagnosis

- 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
  - Inflammation of parietal peritoneum



DIFFUSE
Peritonitis
Early Appendicitis
Pancreatitis
Leukemia
Sickle Cell Crisis
Gastroenteritis
Mesenteric Adenitis
Mesenteric Thrombosis
Intestinal Obstruction
Inflammatory Bowel Disease
Aneurysm
Metabolic Causes
Toxic Causes

Peptic Ulcer
Gastritis
Pancreatitis
Duodenitis
Gastroenteritis
Early Appendicitis
Mesenteric Adenitis
Mesenteric Thrombosis
Intestinal Obstruction
Inflammatory Bowel Disease



UMBILICAL REGION
Early Appendicitis
Gastroenteritis
Pancreatitis
Hernia
Mesenteric Adenitis
Mesenteric Thrombosis
Intestinal Obstruction
Inflammatory Bowel Disease
Aneurysm

HYPOGASTRIC REGION
Cystitis
Diverticulitis
Appendicitis
Prostatism
Salpingitis
Hernia
Ovarian Cyst/Torsion
Endometriosis
Ectopic Pregnancy
Nephrolithiasis
Intestinal Obstruction
Inflammatory Bowel Disease
Abdominal Wall Hematoma

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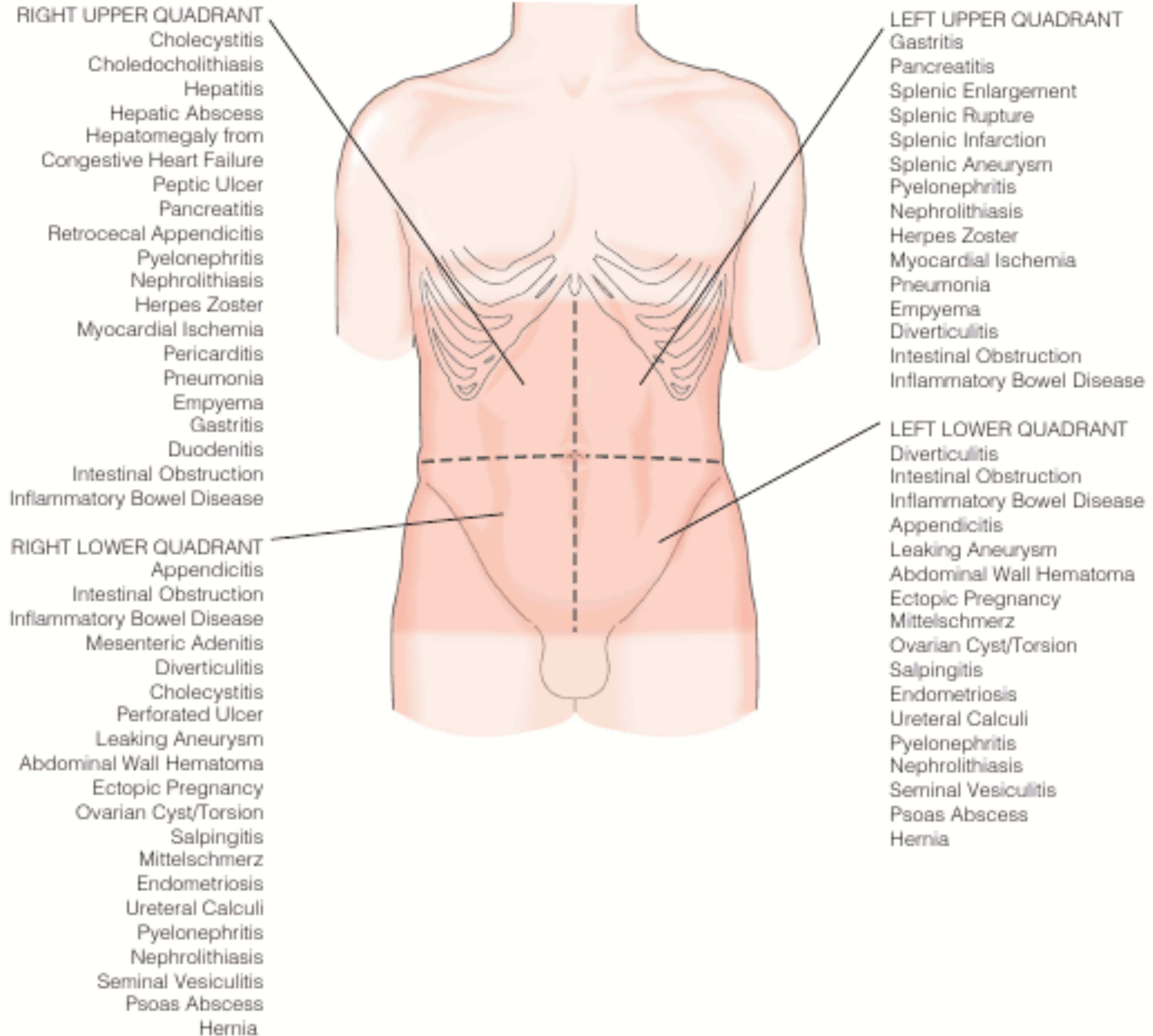
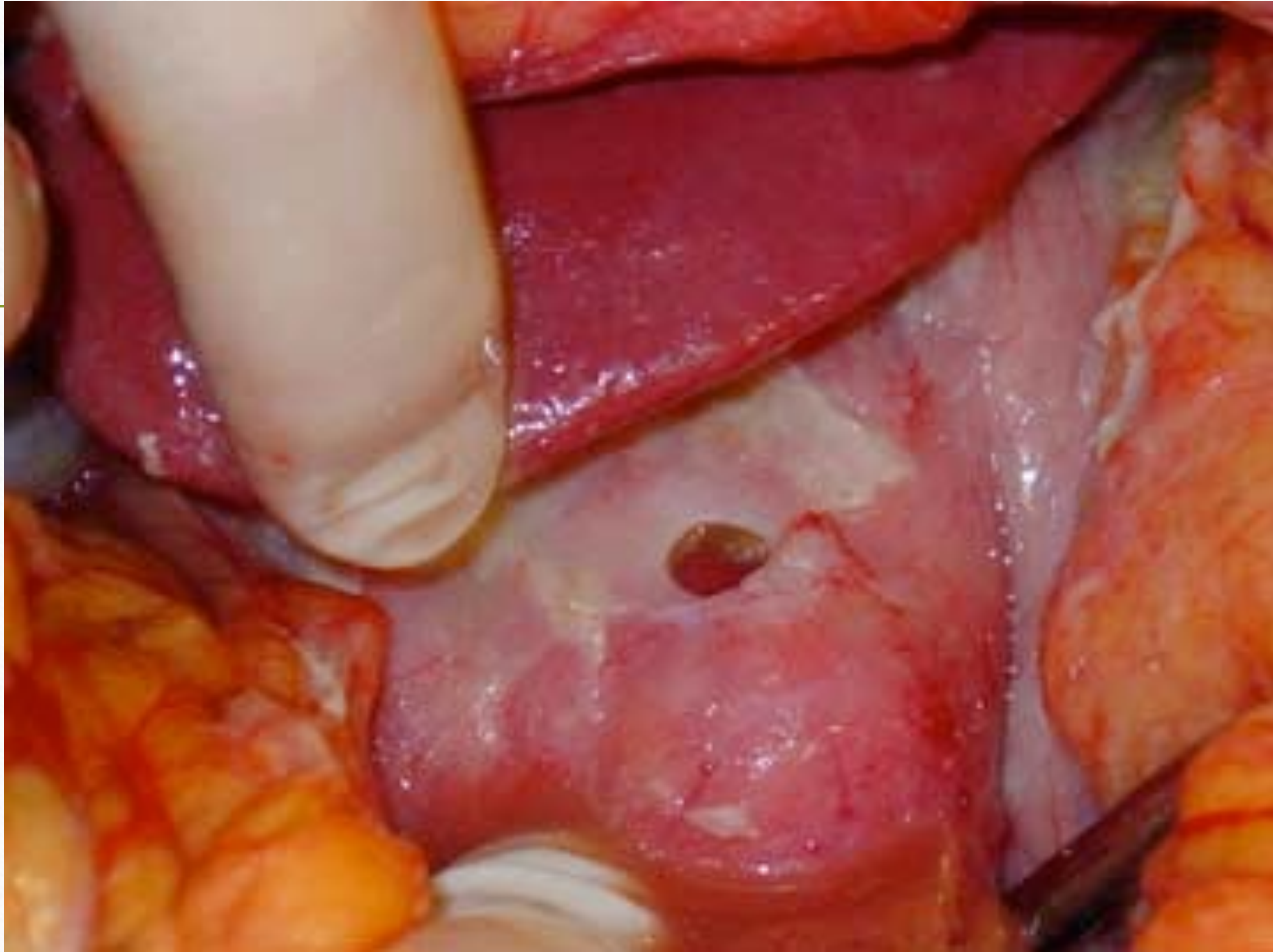
- Inflammation of parietal peritoneum



Case

- 83 yo F brought to ED by daughter
- Progressive weakness & functional decline over past 5 days
- Initially vague abdominal complaints
- P/E generalized tenderness maximum over RUQ



Clinical Diagnosis

- “Referred pain”
  - Biliary disease → R shoulder or back
  - Sub-left diaphragm abscess → L shoulder
  - Above diaphragm(lungs) → Neck/shoulder
  - Acute onset & unrelenting pain = bad
- Pain which resolves *usually* not acutely surgical

Other history

- GI symptoms
  - Nausea, emesis (? bilious or bloody)
  - Constipation, obstipation (last BM or flatus)
  - Diarrhea (? bloody)
- Change in symptoms with eating? Loss of appetite?
- NSAID use (perf DU)
- Jaundice, acholic stools, dark urine

Other history

- Drinking history (pancreas)
- Prior surgeries (adhesions→ SBO, ?still have gallbladder & appendix)
- History of hernias
- Urine output (dehydrated)
- Constituational Symptoms
  - Fevers/chills
- Sexual/mesnstrual history

Think **Broad** categories

- Inflammation
- Obstruction
- Ischemia
- Perforation (any of above can end here)
  - Offended organ becomes distended
  - Lymphatic/venous obstruction due to ↑pressure
  - Arterial pressure exceeded → ischemia
  - 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	**A**dhesions **B**ulges **C**ancer **C**rohn'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

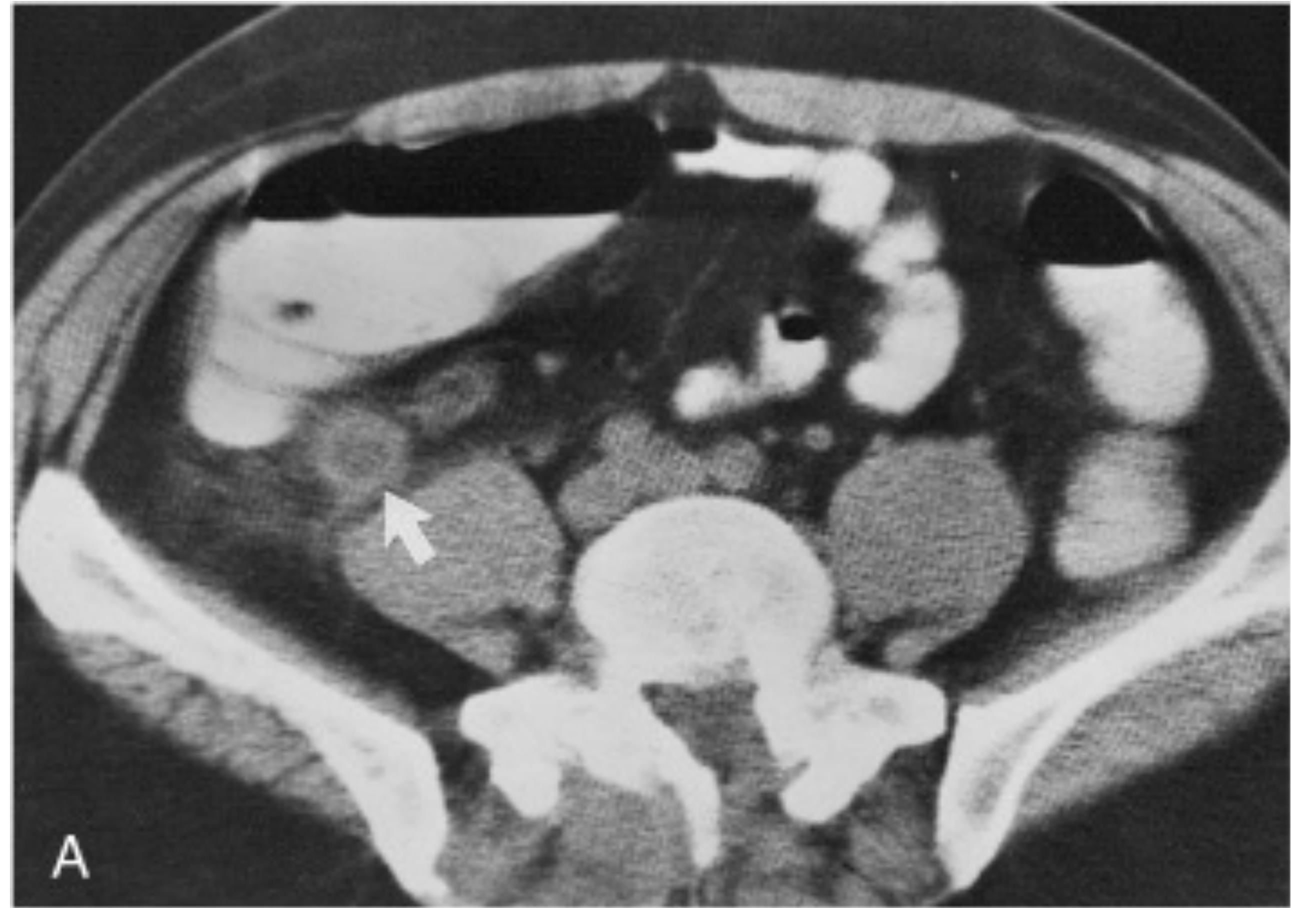
Labs & Imaging

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,hepatiti s
UA	GU- UTI, stone, hematuria
Beta-hCG	Ectopic

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

Case

- 19 year old man with periumbilical pain that shifted to RLQ.
- On exam febrile, sick and tender RLQ
- CT scan
- What is the diagnosis?



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Emergency OR!!!

- Peritonitis
  - Tenderness w/ rebound, involuntary guarding
- "Unstable" (hemodynamically, or septic)
  - Tachycardic, hypotensive, white count
- Intestinal ischemia, including
  - strangulation
  - Closed loop obstruction
- 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

Take Home Points

- Careful history (pain, other GI symptoms)
- Remember DDx in **broad** categories
- Narrow DDx based on hx, exam, labs, imaging
- Always perform ABCs, **Resuscitate** before diagnosis
- Don't forget GYN/medical causes, special situations.
- Common things are common in acute abdomen.

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