Acute Abdomen

UBC General Surgery Academic Half-Day

September 12, 2012

Overview

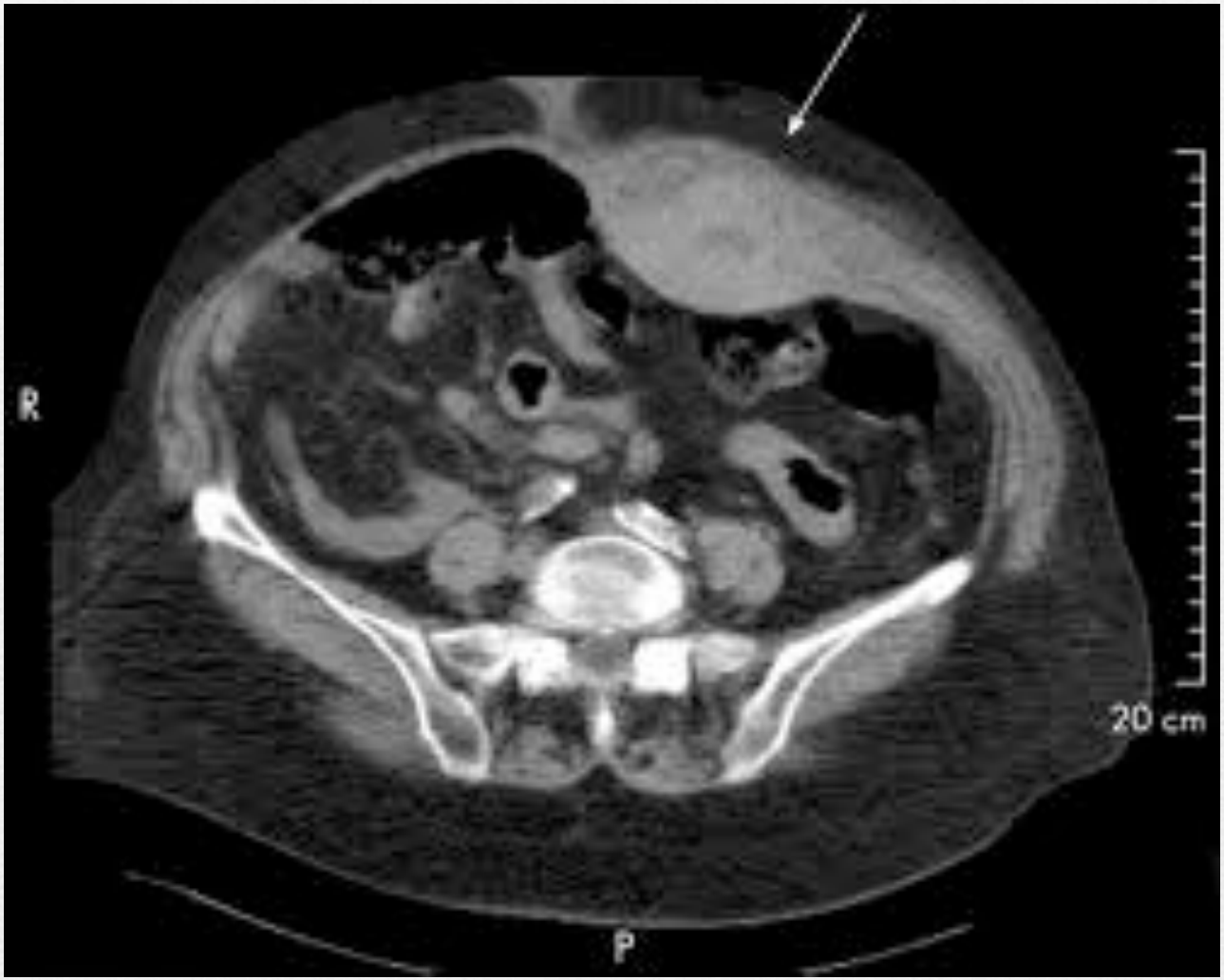
- Basic Definition and Principles
- Clinical Diagnosis / DDx
  - Characterizing the pain
  - Other history to elicit
  - Ways to remember such a broad differential
  - History & Physical / Labs / Imaging
  - Non-surgical causes of acute abdomen
- Clinical Management
- Decision to Operate
- Atypical presentations

Basic Definition and Principles

- Signs and symptoms of intra-abdominal disease *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

Case #1

- 25 yo M
- 4 hour hx lower abd pain
- Climbing up wall with rope as part of work-out
- Pain severe, constant, aggrevated by movement


R
20 cm
P

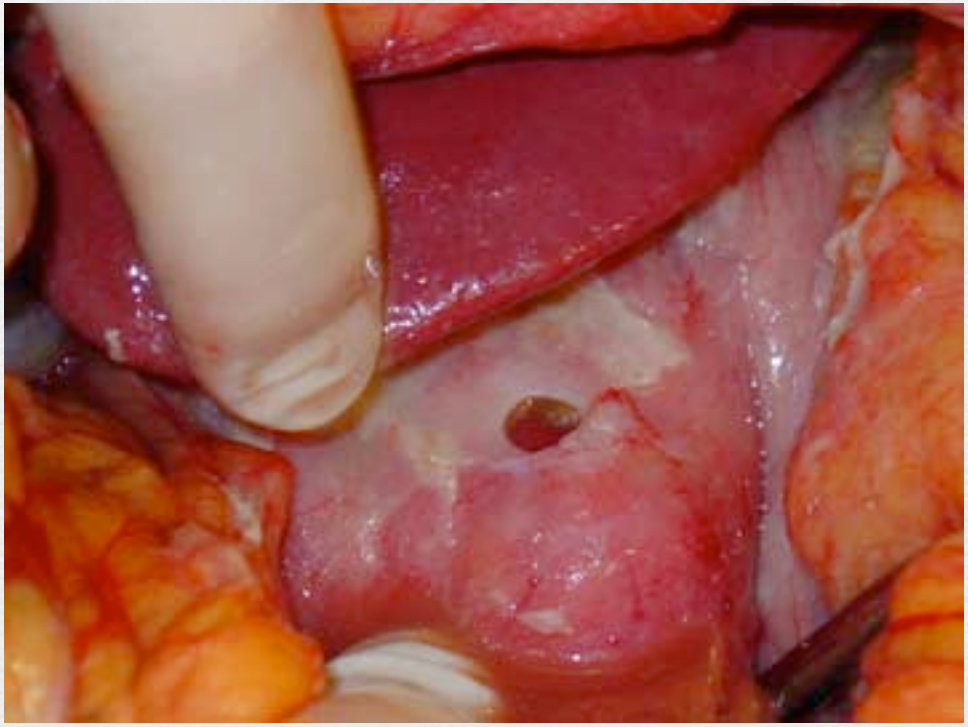
Clinical Diagnosis

- 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

Case #2

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

Case #2



Clinical Diagnosis – Pain

- Location
  - Upper abdomen → PUD, chol'y, pancreatitis
  - Lower abdomen → Divertic, ovary cyst, TOA
  - Mid abdomen → early app'y, SBO
- Migratory pattern
  - Epigastric → Peri-umbil → RLQ = Acute app'y
  - Localized pain → Diffuse = Diffuse peritonitis

Clinical Diagnosis

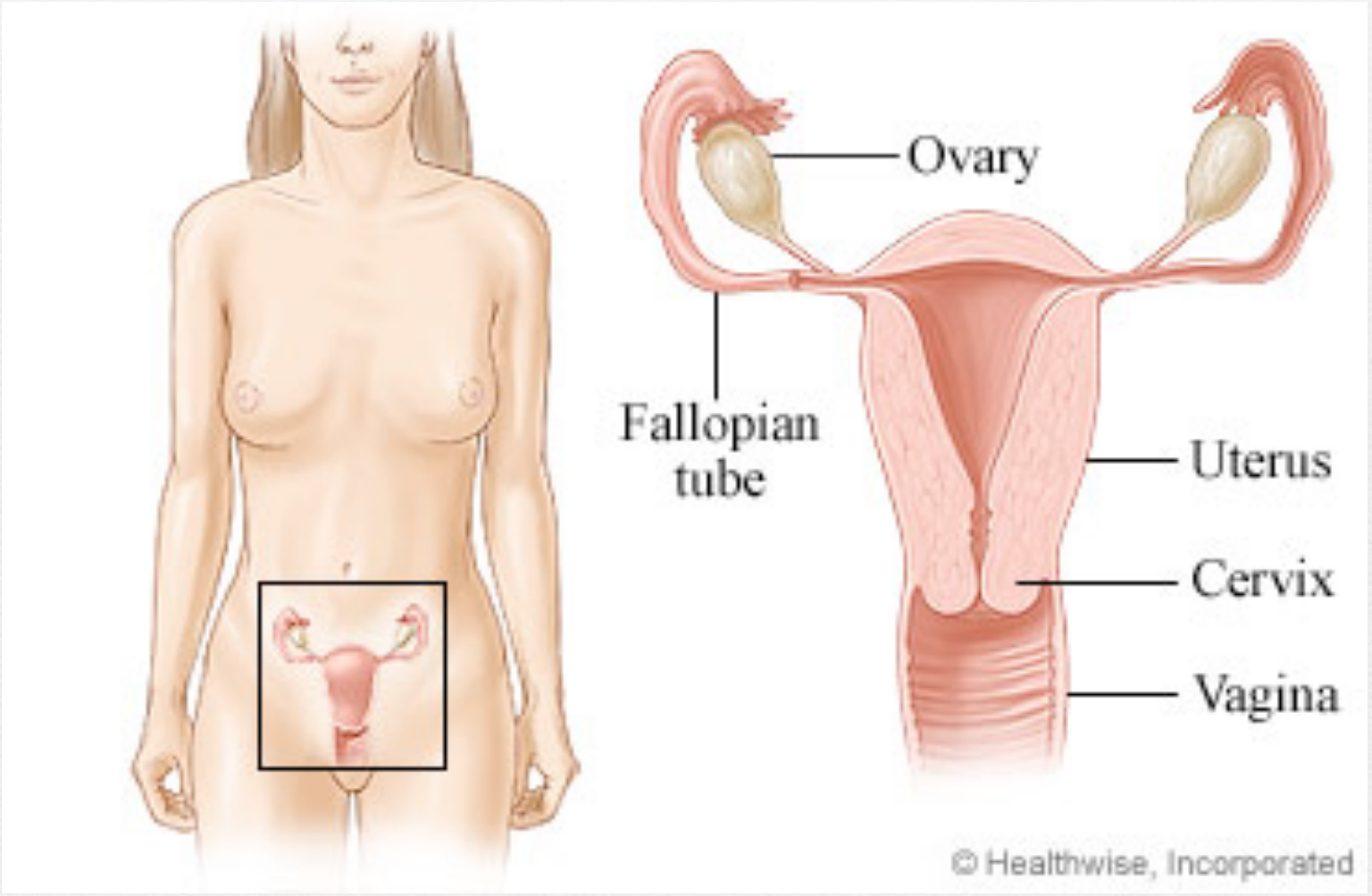
- "Referred pain"
  - Biliary disease → R shoulder or back
  - Sub-left diaphragm abscess → L shoulder
  - Above diaphragm(lungs) → Neck/shoulder
- Acute onset & unrelenting pain = bad
- Pain which resolves *usu.* not surgical

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

Case #3

- 78 yo F back in town from stay in Las Vegas
- cc: n/v, generalized abdominal pain, weakness
- p/e: diffuse peritonitis


Ovary
Fallopian tube
Uterus
Cervix
Vagina
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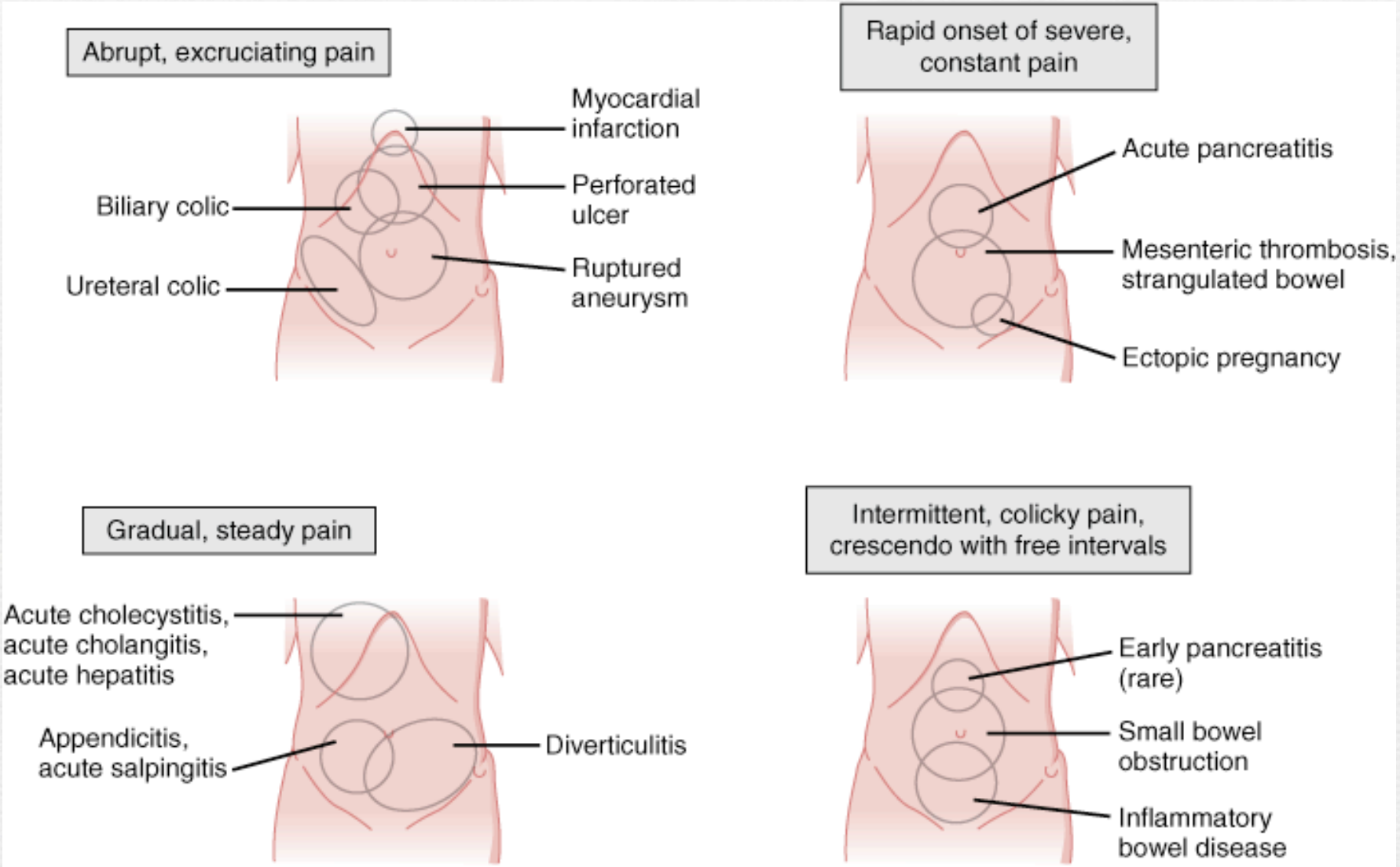
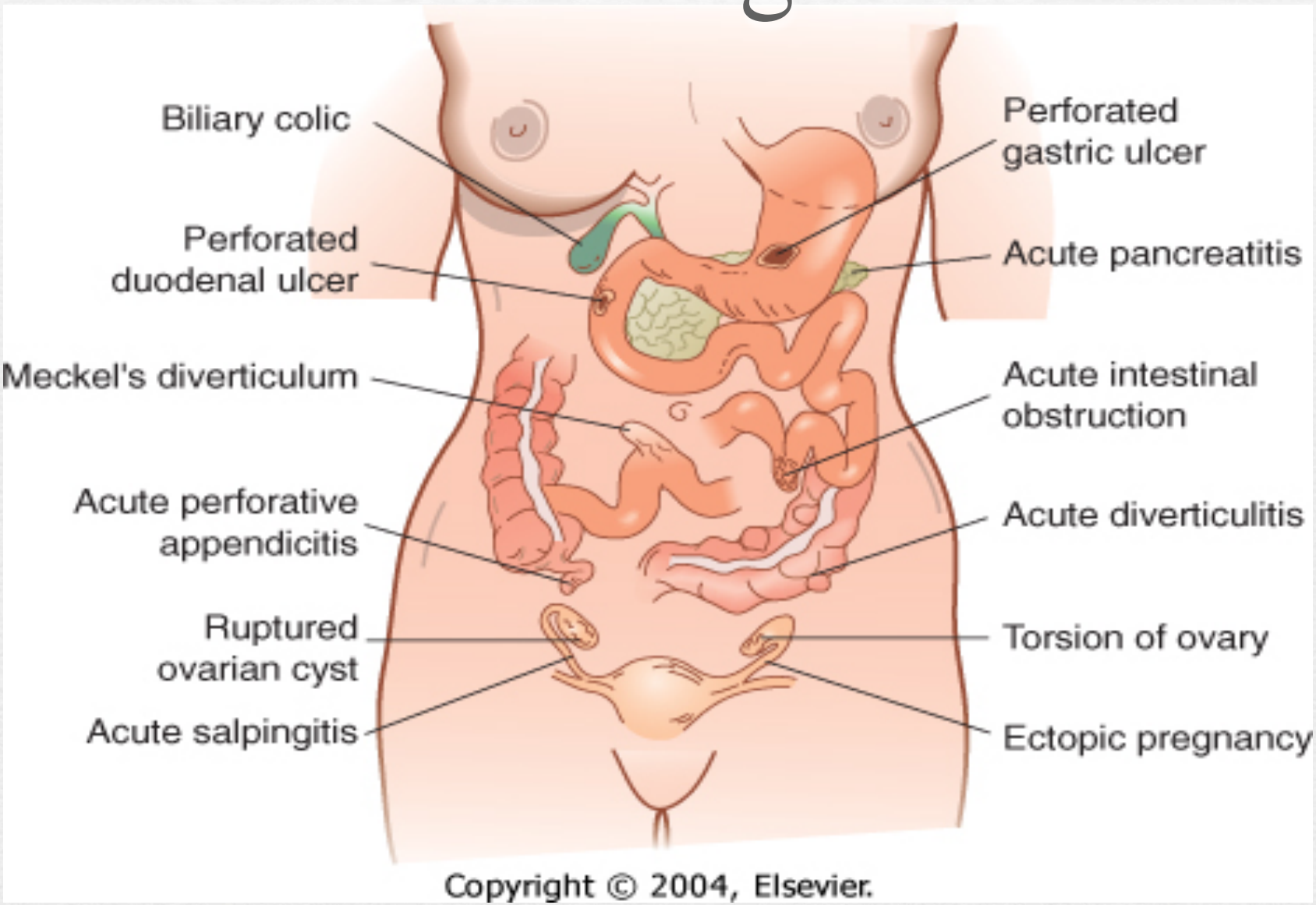
Clinical Diagnosis



Source: Gerard M. Doherty: *CURRENT Diagnosis & Treatment: Surgery, 13th Edition*: http://www.accessmedicine.com

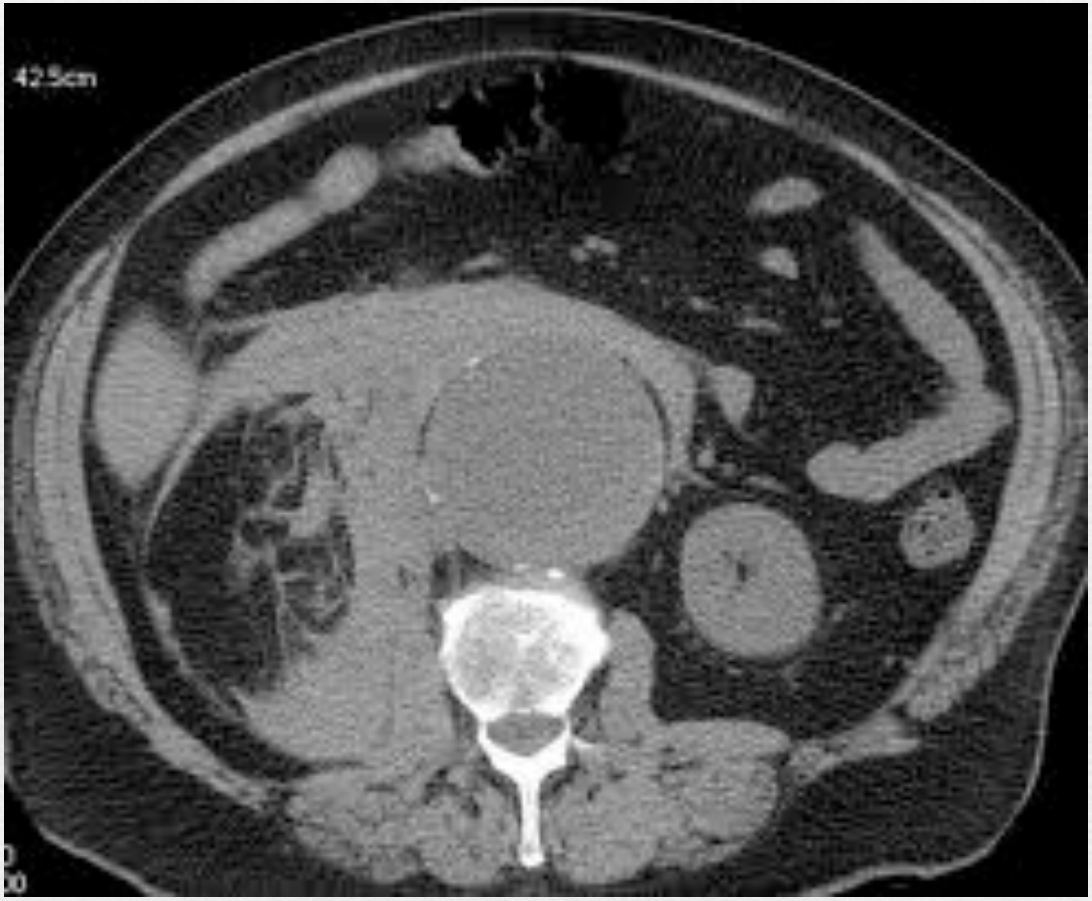
Clinical Diagnosis



Case #4

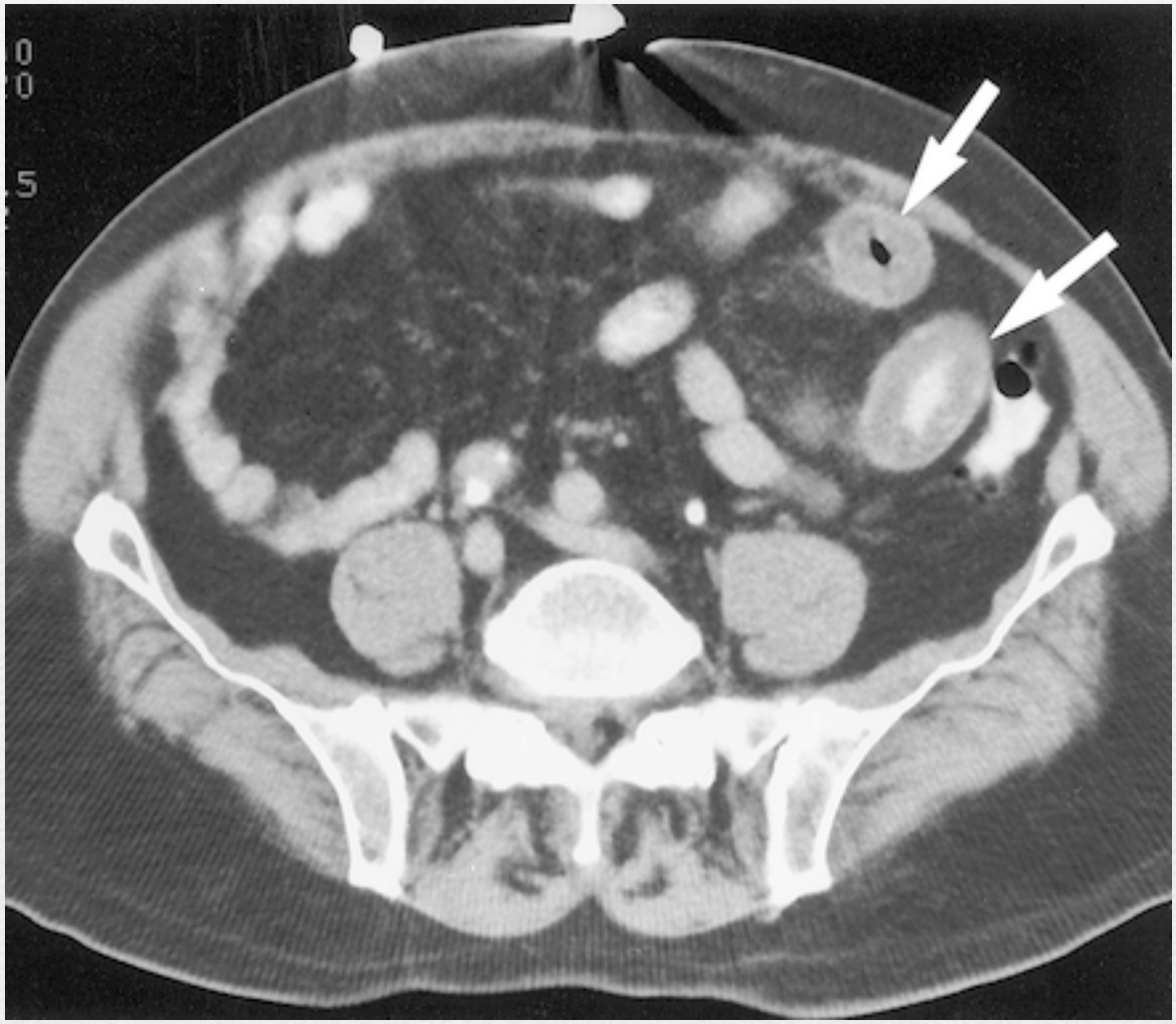
- 64 M DM, HTN
- Hypotension with LOC at home
- c/o flank pain

Case #4



Case #5

- 72 yo to ED with abrupt onset crampy left abd pain
- 3/7 profuse diarrhea, nausea, emesis, limited po intake
- o/e diffusely tender (not peritoneal); FOB +
- PMHx HTN, cholecystectomy



Think **Broad** categories

- Inflammation
- Obstruction
- Ischemia
- Perforation (any of above can end here)
  - Offended organ becomes distended
  - Lymphatic/venous obstrux due to ↑pressure
  - Arterial pressure exceeded → ischemia
  - Prolonged ischemia → perforation

DDx

GI tract	Gynecologic
Liver, spleen & biliary tract	Vascular
Pancreatitis	Peritoneal
Urinary tract	Retroperitoneal

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

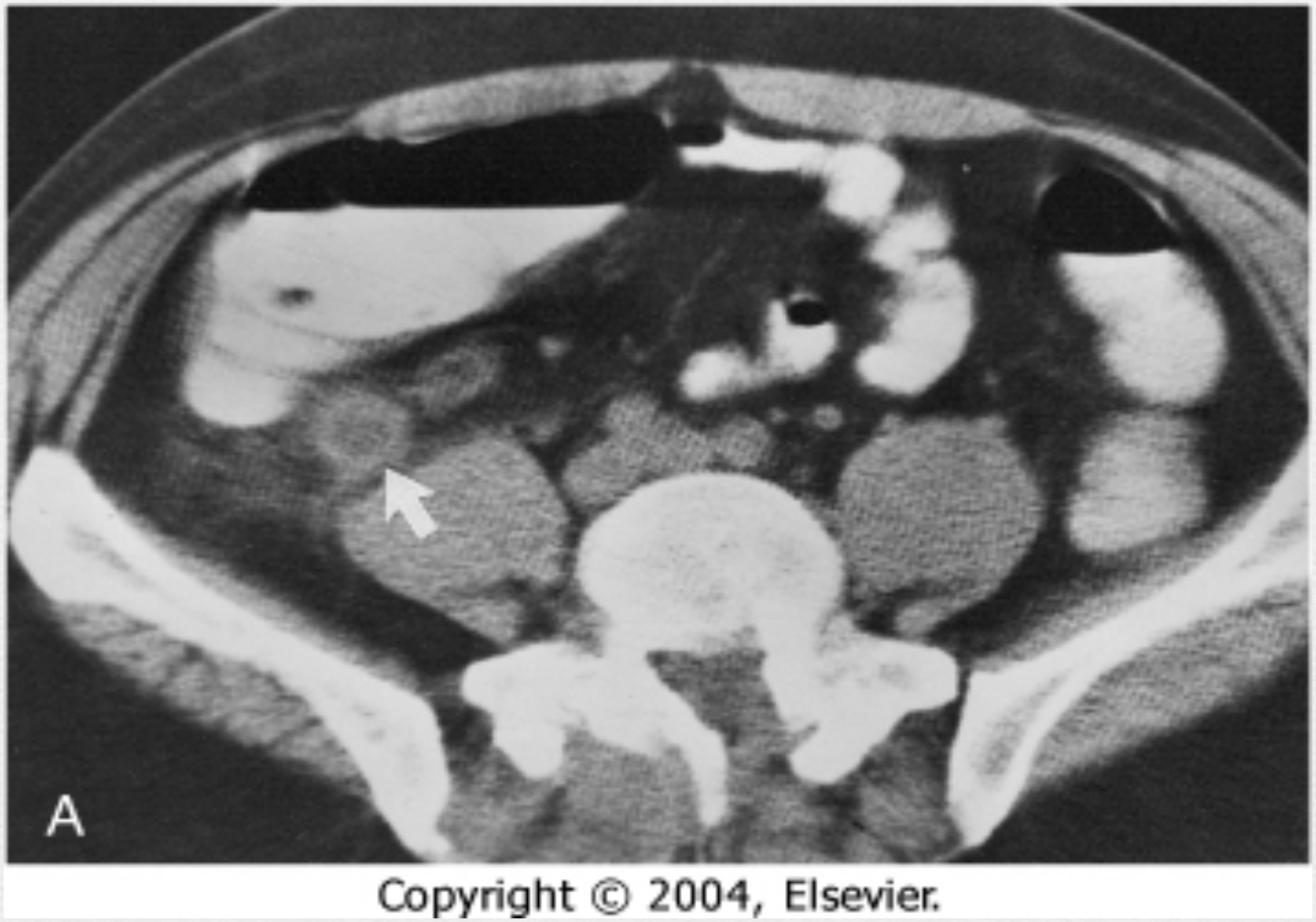
Organ	Lesion
Ovary	Ruptured graafian follicle Torsion of ovary Tubo-ovarian abscess (TOA)
Fallopian tube	Ectopic pregnancy Acute salpingitis Pyosalpinx
Uterus	Uterine rupture Endometritis

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,hepatitis
UA	GU- UTI, stone, hematuria
Beta-hCG	Ectopic

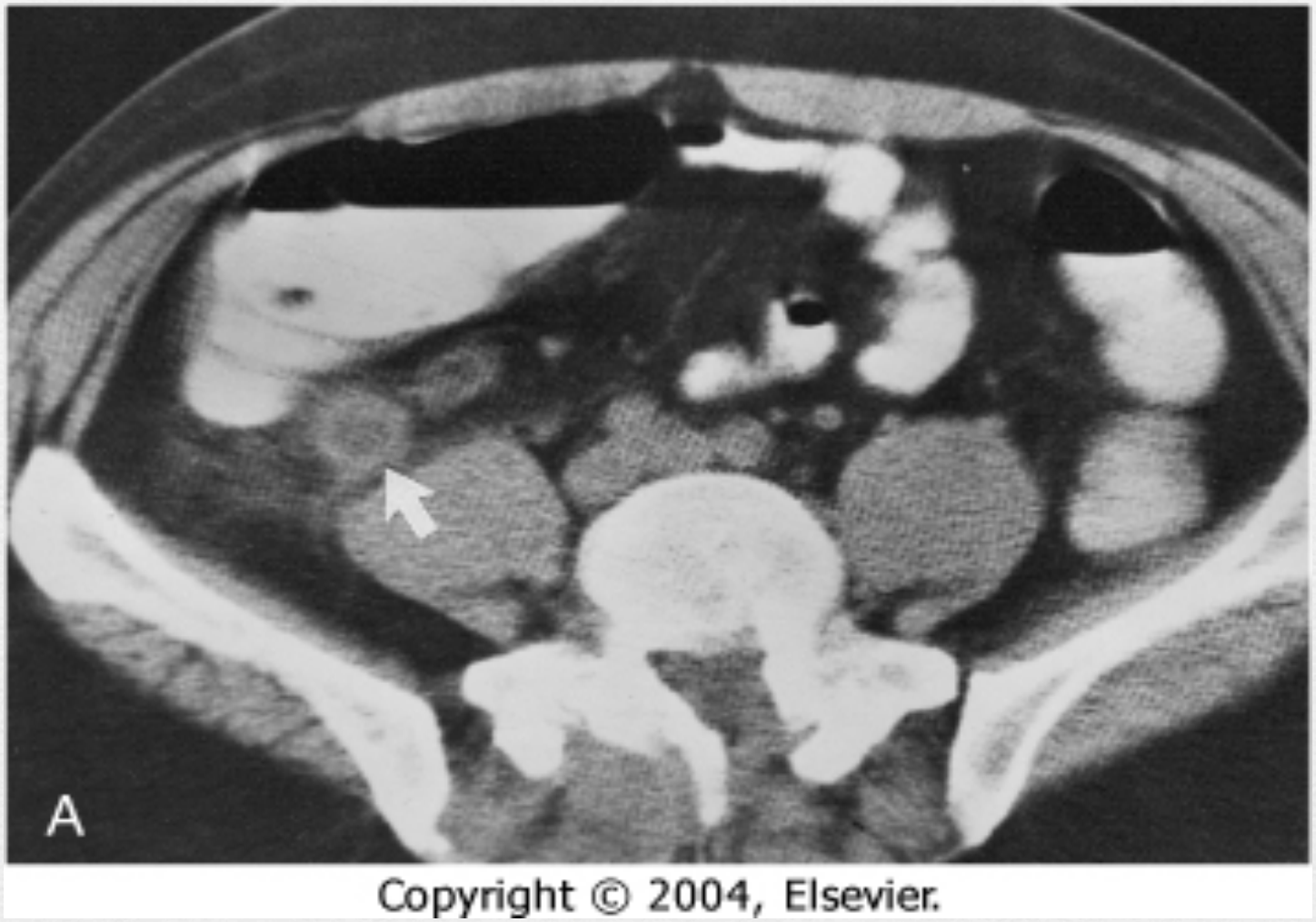
Test	Reason
KUB Flat & Upright	SBO/LBO, free air, stones
Ultrasound	Chol'y, jaundice GYN pathology
CT scan - Diagnostic accuracy	Anatomic dx Case not straightforward

CT scan



What is the diagnosis?

CT scan



What is the diagnosis? Acute appendicitis

Non-Surgical Causes by Systems

System	Disease	System	Disease
Cardiac	Myocardial infarx Acute pericarditis	Endocrine	Diab ketoacidosis Addisonian crisis
Pulmonary	Pneumonia Pulmonary infarx 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
- 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

Post-Op Considerations

- Bleeding
- Anastomotic Leak
- Fascial Dehiscence
- Bowel Obstruction
- Abscess
- Abdominal compartment syndrome

Bowel Obstruction

- Dx confounded by normal post-op adynamic ileus
- Narcotic analgesia
- Complete obstruction or nonresolving / worsening PSBO requires reoperation

Leak

- In cases where leak controlled by drainage w/ little or no peritoneal contamination, may not need early operative intervention
- Percutaneous drainage
- NPO, TPM
- If peritoneal spillage or signs of intraabdominal sepsis, need emergent reoperation

Abscess

- Need approximately 7 days post-op days to organize an abscess
- Small ones may only require abx
- Larger ones or those w/ continued enteric contamination (leak) require drainage
- Percutaneous - operative if not accessible

Take Home Points

- 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 the common dx