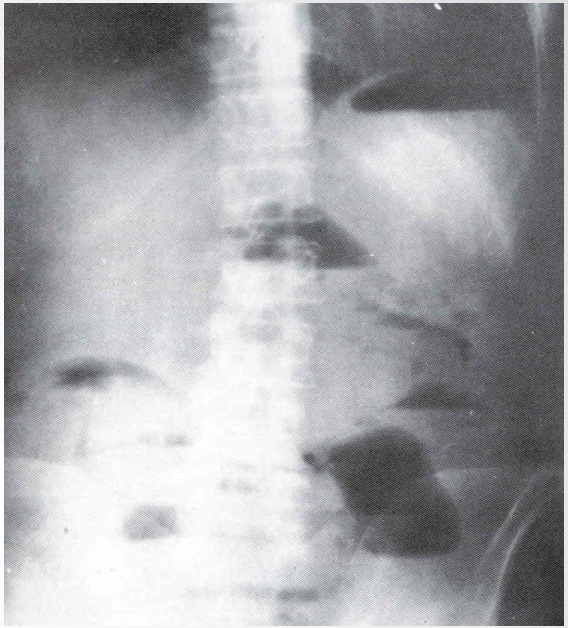
ACUTE ABDOMINAL PAIN ASSESSMENT



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PRESENTATION OBJECTIVES

- Describe the leading causes of acute abdominal pain.
- List the clinical signs associated with leading causes of acute abdominal pain.
- Describe the special assessment of acute abdominal pain in children and females.

HOW COMMON IS ACUTE ABDOMINAL PAIN IN EMERGENCY DEPARTMENT SETTINGS?

SCOPE OF ABDOMINAL PAIN

- Represents 15 percent of visits of emergency departments.
- 35 percent of primary care physicians report uncertainty with management.

WHAT ARE SOME COMMON ACUTE ABDOMINAL PAIN MANAGEMENT PROBLEMS?

COMMON MANAGEMENT PROBLEMS

- Failure to recognize patients with an acute abdomen.
- Failure to create a complete differential diagnosis.
- Failure to monitor patients adequately.
- Failure to make use of appropriate lab and X ray exams.

WHAT IS AN "ACUTE ABDOMEN"?

DEFINITION OF "ACUTE ABDOMEN"

- Marked pain, usually abrupt onset
- Often abdominal rigidity, distention
- Frequently accompanied by nausea & vomiting
- Atraumatic for the purposes of this presentation

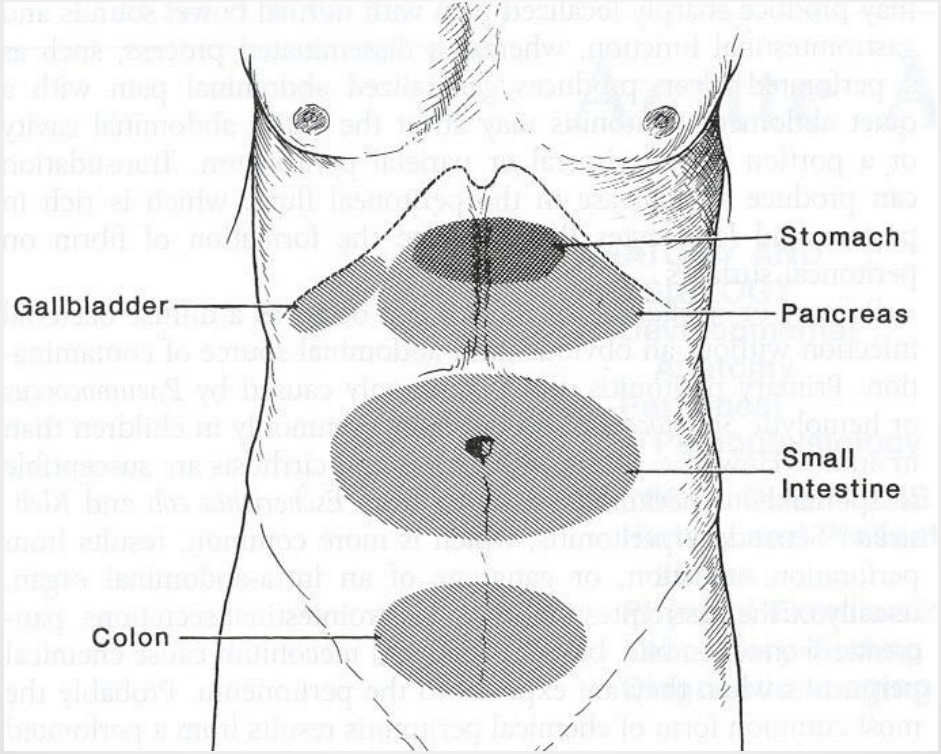
Abdominal Pain

DIAGNOSIS IS PARAMOUNT!

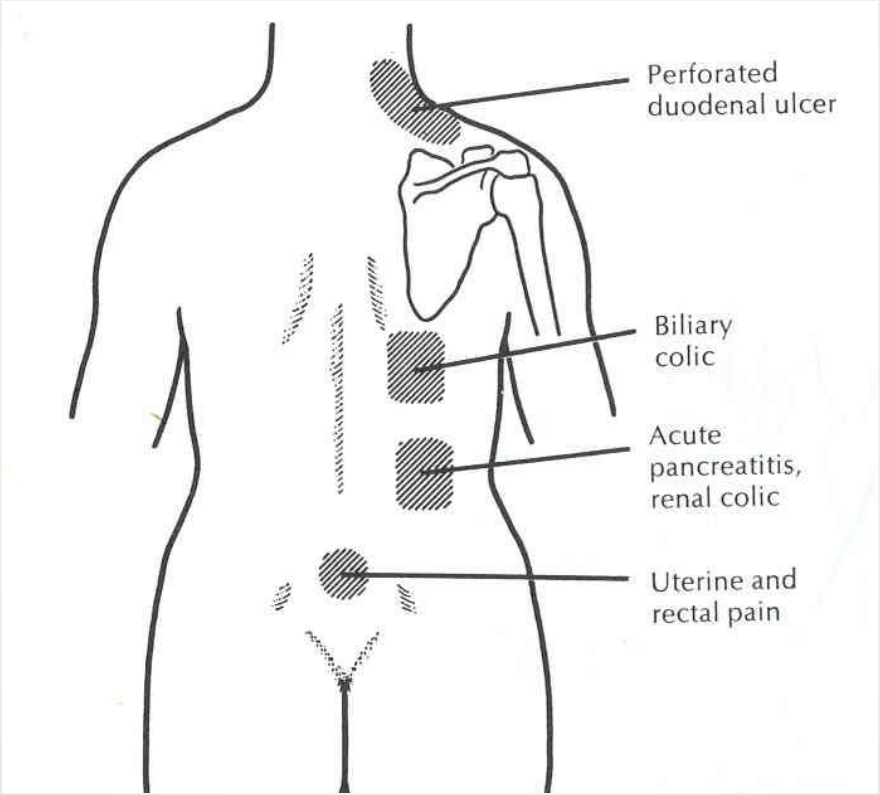
INITIAL EVALUATION - HISTORY

- Age greatly affects probabilities of etiologies
- Gender also effects probabilities, given factors of pregnancy and female organs
- Prior surgery, for example appendectomy
- Underlying diseases: diabetes, artery disease
- Substance abuse: alcohol, tobacco
- Trauma: location and mode of injury

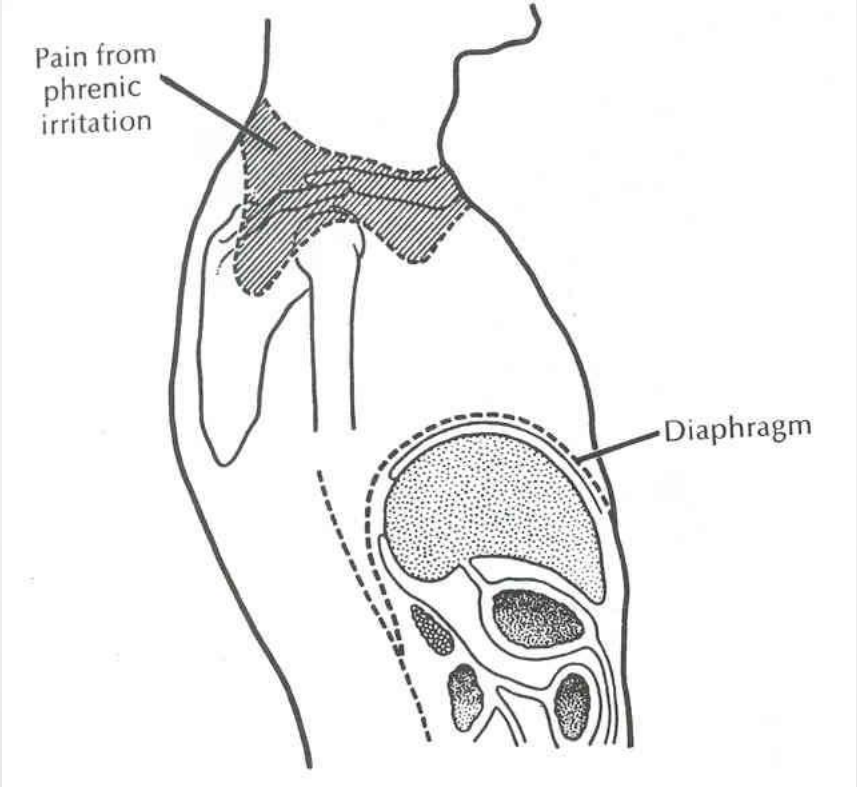
ABDOMINAL PAIN LOCATIONS



BACK PAIN LOCATIONS



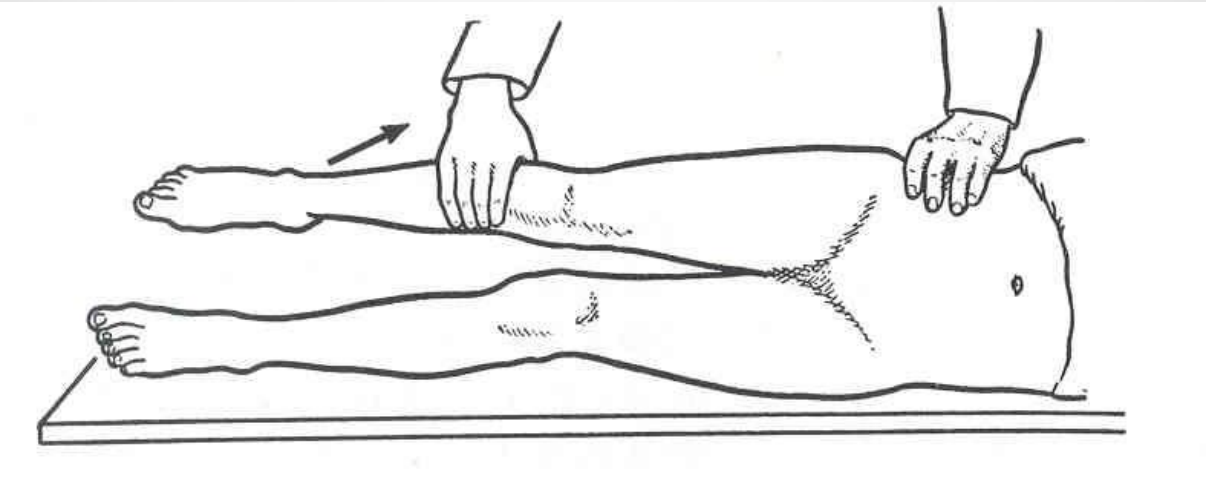
REFERRED PLEURITIC PAIN



INITIAL EVALUATION - PHYSICAL EXAM

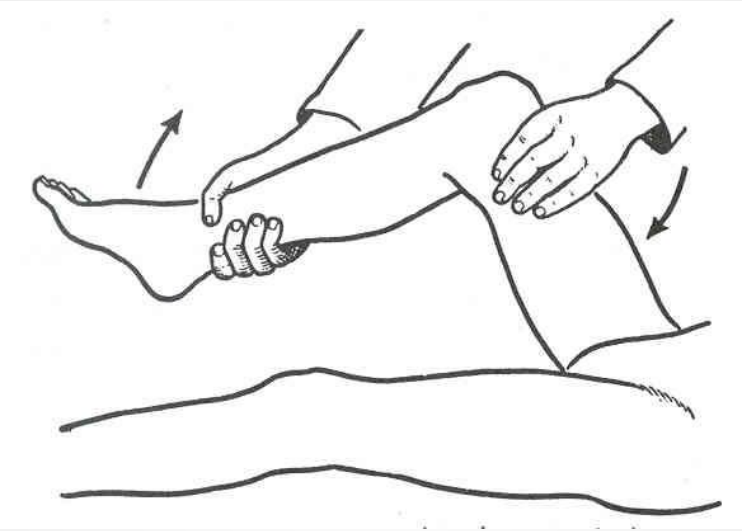
- Vital signs: temperature (infection), BP and HR (hypovolemia)
- Extra abdominal findings: chest exam, otitis media, back pain, jaundice
- Abdominal findings: contour, bowel sounds, organomegally, guarding, fluid wave
- Pelvic exam: uterine size, cervical tenderness
- Rectal exam

ILIOPSOAS TEST



- A positive test indicates an inflammatory process, such as a ruptured appendix or a psoas abscess.
- The patient lies supine and attempts to lift the right thigh against resistance from the examiner.

OBTURATOR TEST

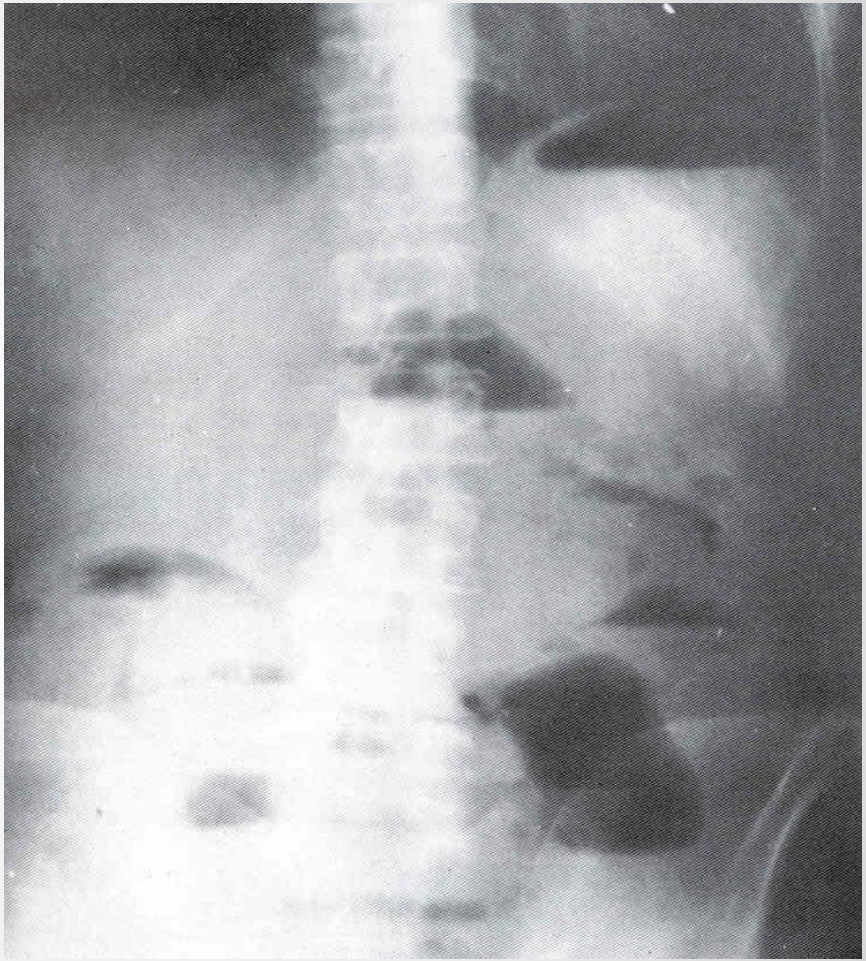


- To detect irritation of the obturator internus muscle, suggesting conditions like acute appendicitis or pelvic abscess.
- Passively flexing the right hip and knee to 90 degrees and rotate the hip internally.

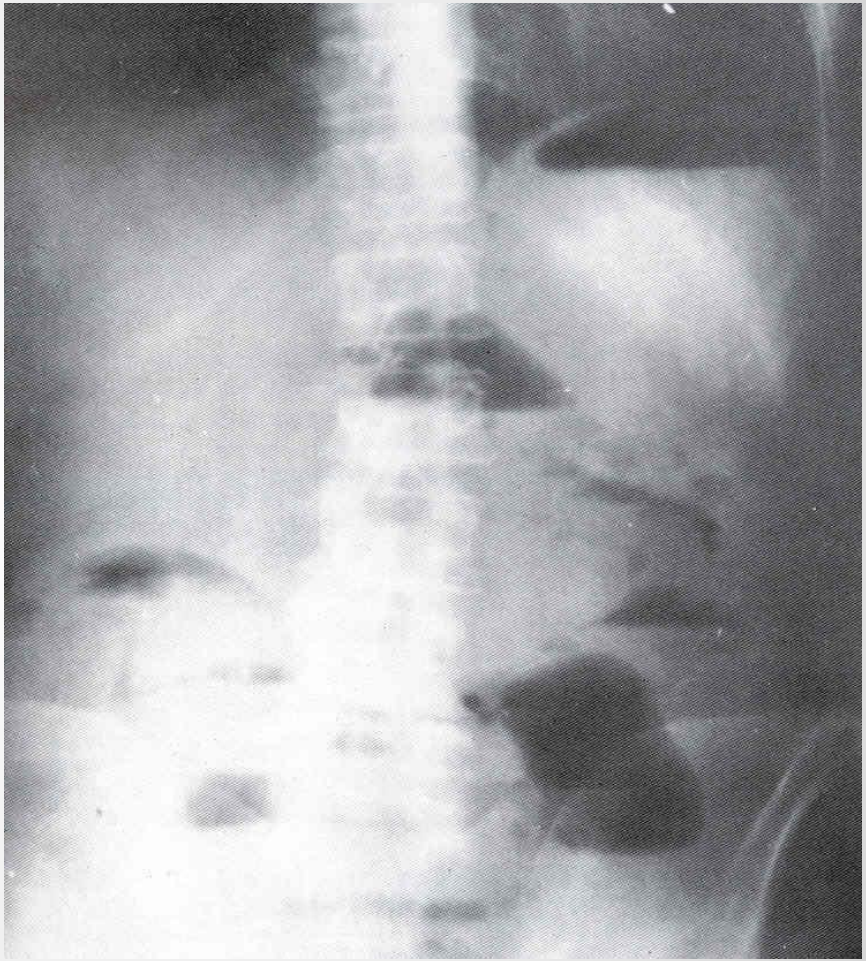
INITIAL EVALUATION - RADIOLOGY

- Plain X ray: upright and supine
- CT: abdomen, pelvis with contrast
- Ultrasound: gall bladder, pancreas
- Intravenous pyelogram to evaluate urinary system

WHAT IS THIS FINDING?



DIFFUSE INTESTINAL ILEUS



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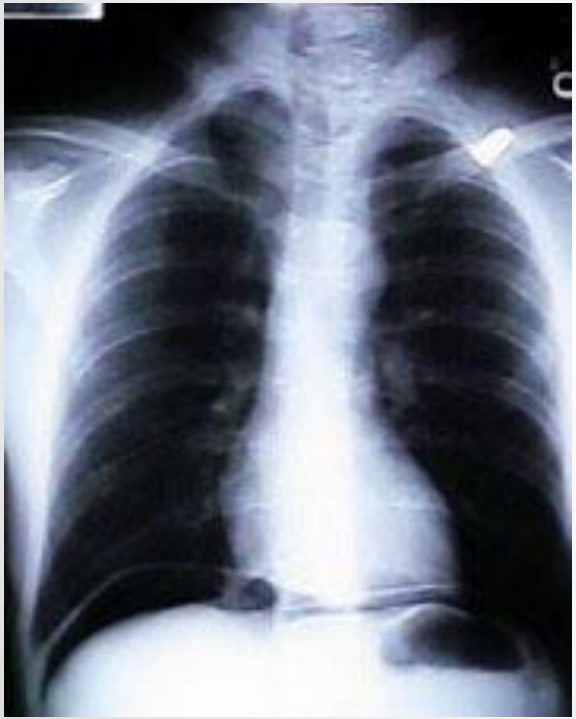

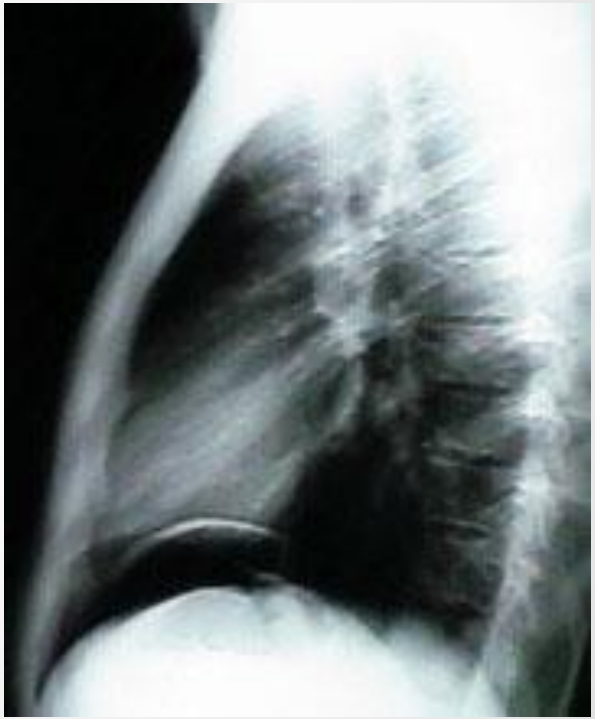

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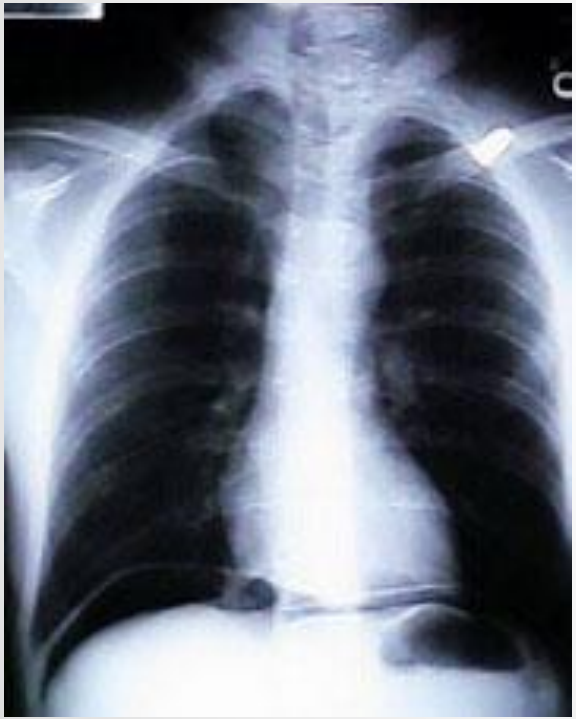
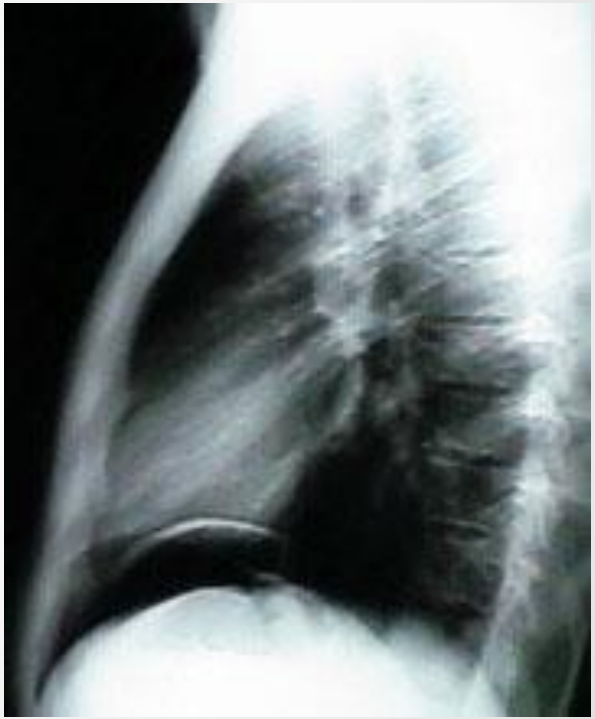
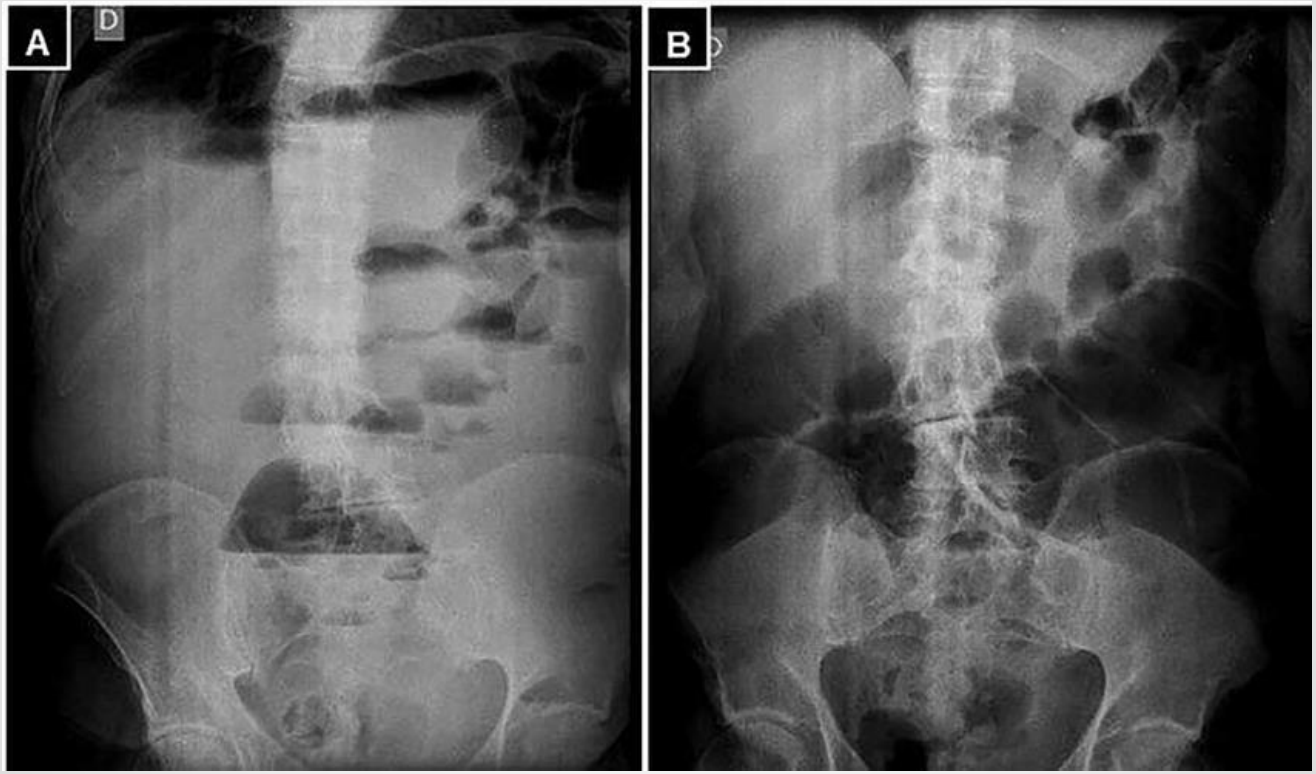




SUPINE VS UPRIGHT



WHAT BASIC LABORATORY EXAMINATIONS ARE HELPFUL IN EVALUATING AN ACUTE ABDOMEN?

INITIAL EVALUATION - LABORATORY

- Urine analysis: RBCs, WBCs
- Pregnancy test
- Complete blood count: hemoglobin, leukocytes
- Blood chemistry: amylase, lipase, bilirubin, transaminase
- EKG

DIFFERENTIAL DIAGNOSIS IS PARAMOUNT

- The key to management of abdominal pain is the differential diagnosis
- 3 methods to create a differential diagnosis:
  - Pathophysiologic causes
  - Probabilities according to age & gender
  - Anatomical-based causes

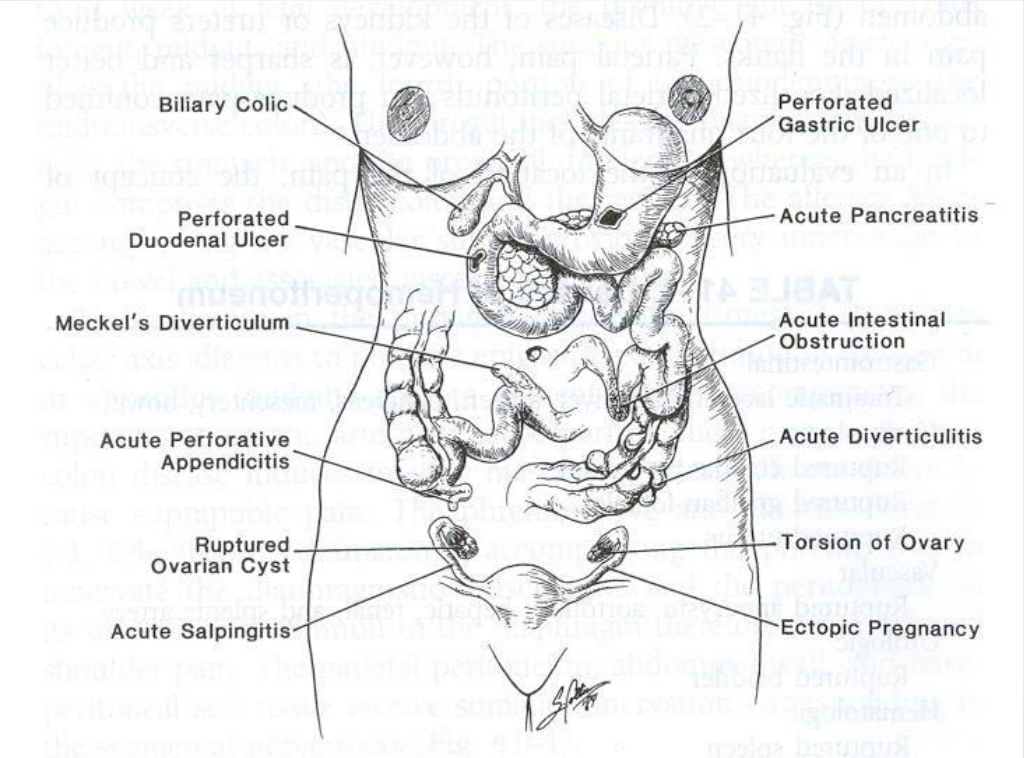
PATHOPHYSIOLOGICAL DIFF DIAGNOSIS

- ABDOMINAL CAUSES
- Peritoneal inflammation: perforated appendix or ulcer, PID, pancreatitis
- Visceral obstruction: intestinal, biliary, urinary
- Vascular: embolism, thrombosis, rupture, torsion
- Distension of capsular surfaces: liver, kidney

PATHOPHYSIOLOGICAL DIFF DIAGNOSIS

- EXTRA-ABDOMINAL CAUSES
- Pain referred: chest (pneumonia, MI), spine (radiculitis), genitalia (testicular torsion)
- Metabolic causes: spider bite, DKA, uremia
- Neurologic: herpes zoster, psychogenic

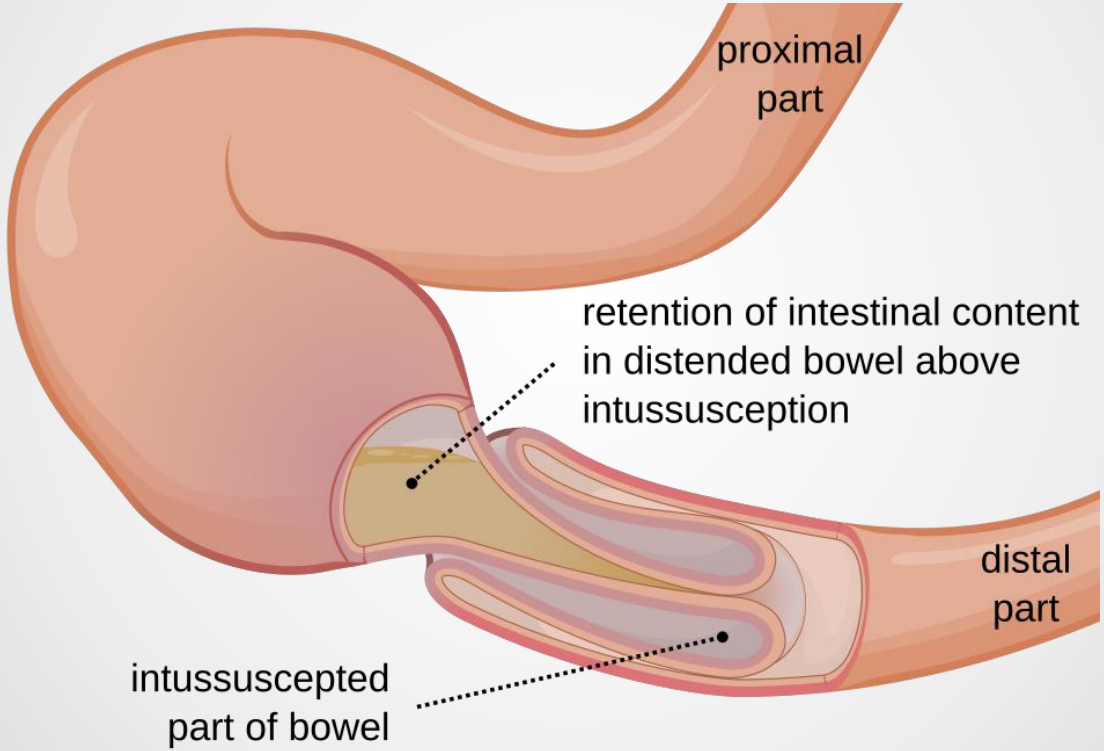
ABDOMINAL PAIN: COMMON AND SERIOUS CAUSES



AGE-BASED DIFFERENTIAL DIAGNOSIS

- Children: gastroenteritis, mesenteric adenitis, appendicitis

INTUSSUSCEPTION



WHAT ARE SOME COMMON AND SERIOUS CAUSES OF SEVERE ABDOMINAL PAIN IN OLDER PERSONS?

AGE-BASED DIFFERENTIAL DIAGNOSIS

- Adults: gastroenteritis, constipation, pancreatitis
- Elderly: mesenteric ischemia, aortic aneurysm, diverticulitis

ACUTE ABDOMINAL PAIN CAUSES BY AGE < 50 YEARS OLD

• Nonspecific	40%
• Appendicitis	32%
• Other	13%
• Biliary tract	6%
• Acute GYN Ds	4%
• Bowel obst	2%
• Pancreatitis	2%

ACUTE ABDOMINAL PAIN CAUSES BY AGE > 50 YEARS OLD

• Biliary tract	21%
• Nonspecific	16%
• Appendicitis	15%
• Other	13%
• Bowel obstruction	12%
• Pancreatitis	7%
• Diverticular disease	6%
• Acute GYN disease	4%

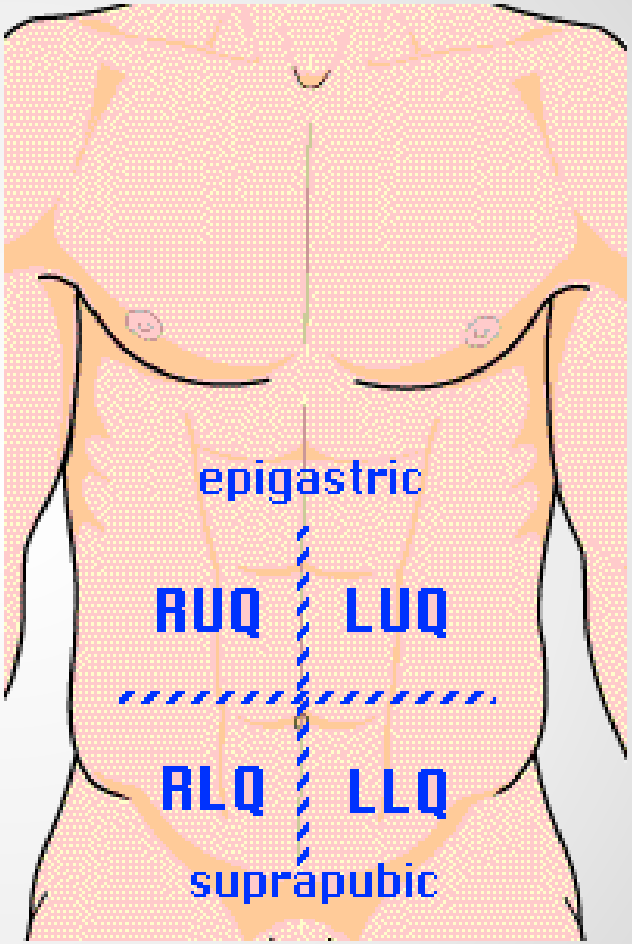
WHAT ARE SOME COMMON AND SERIOUS CAUSES OF ABDOMINAL PAIN EXCLUSIVELY IN WOMEN?

GENDER-BASED DIFFERENTIAL DIAGNOSIS

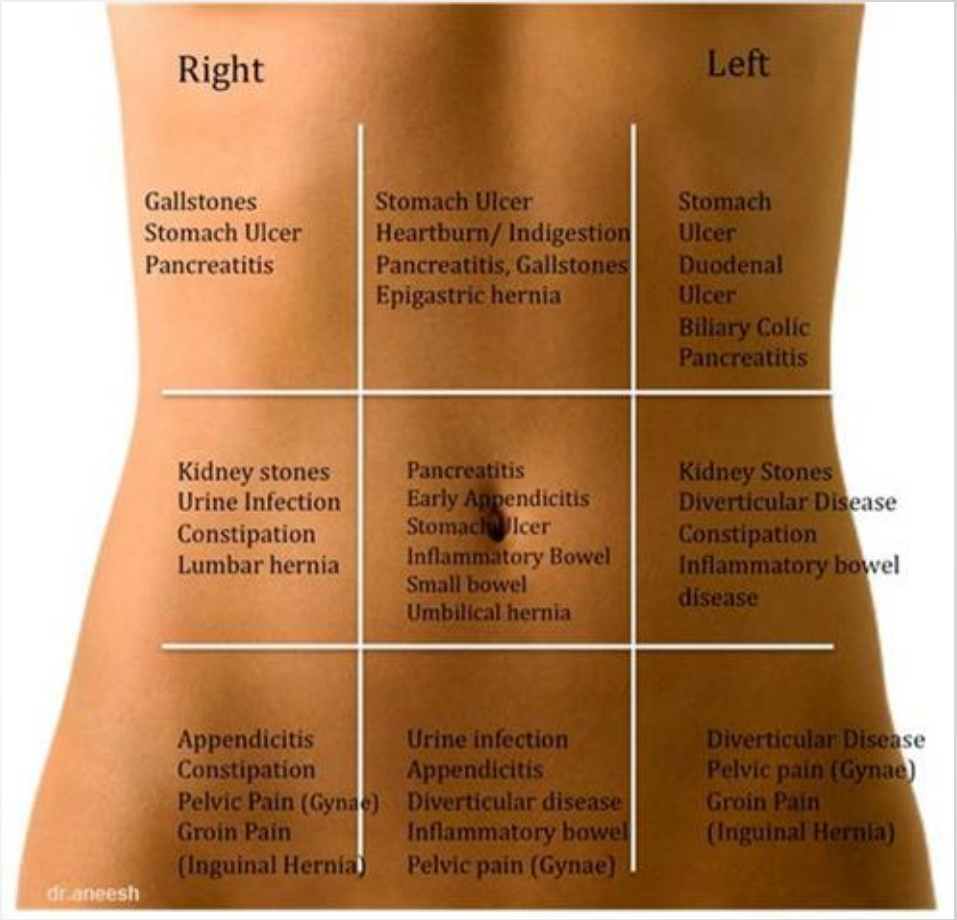
- Ectopic pregnancy
- Salpingitis
- Endometriosis
- Ovarian torsion
- Ruptured ovarian cyst
- Middleschmertz ovulation

PAIN LOCATION DIFFERENTIAL DIAGNOSIS

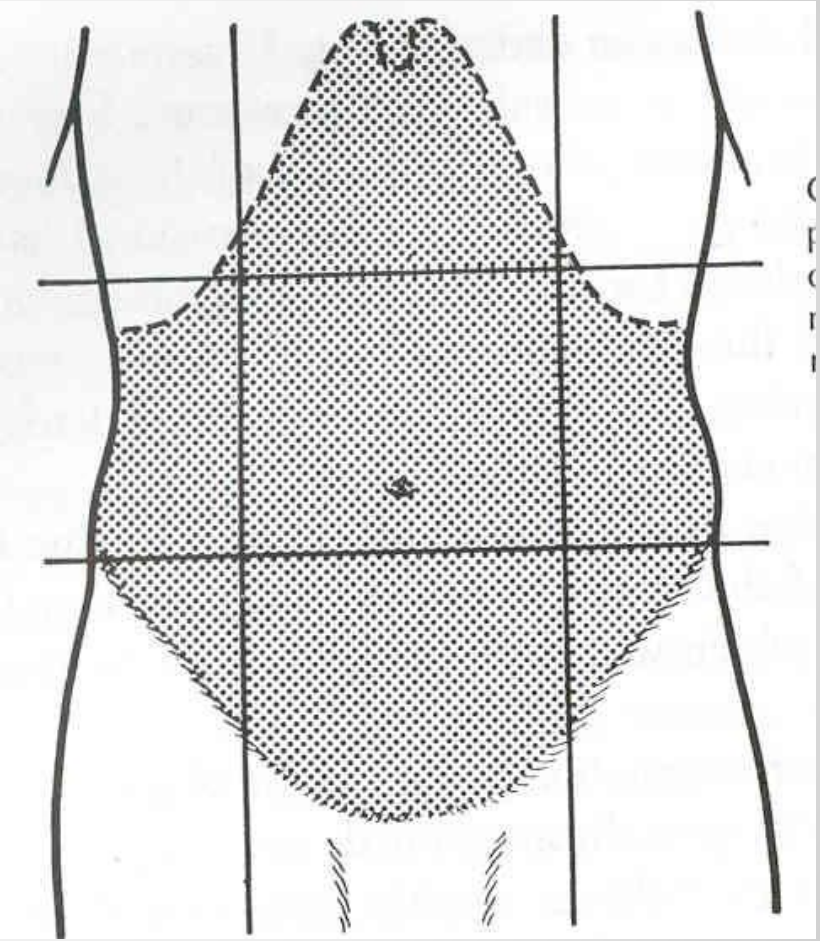
ABDOMINAL AREAS



ABDOMINAL AREAS



WHAT ARE SOME CAUSES OF DIFFUSE, SEVERE ABDOMINAL PAIN?

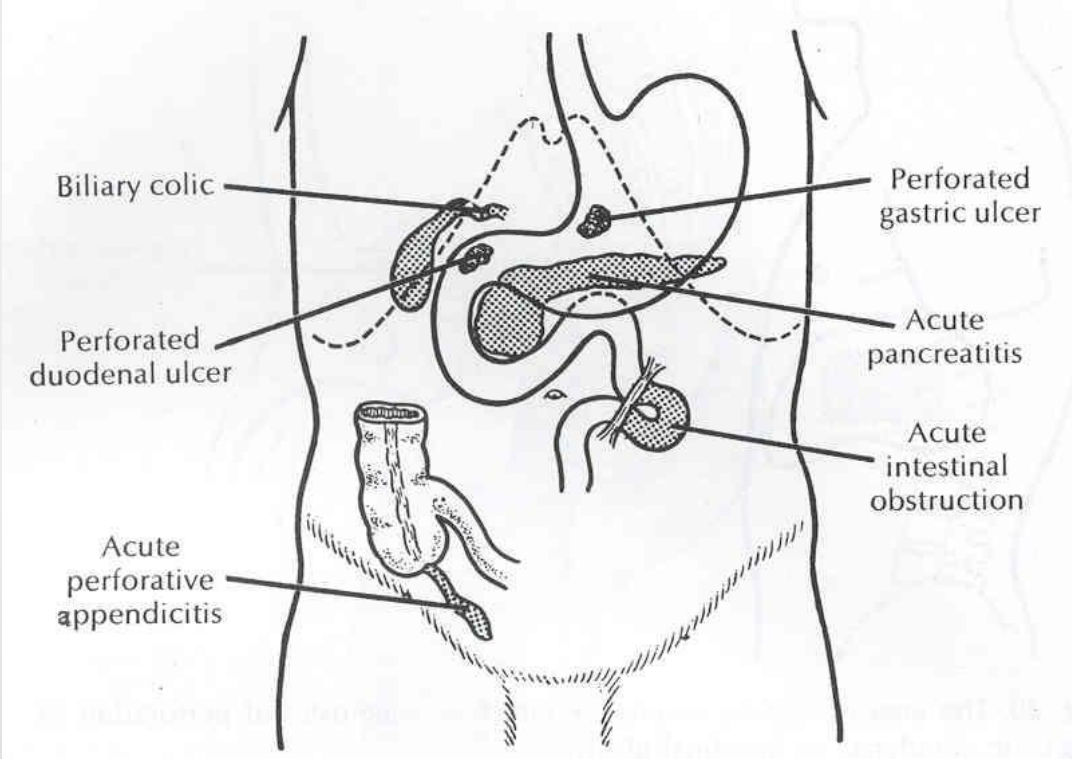


PAIN LOCATION DIFFERENTIAL DIAGNOSIS

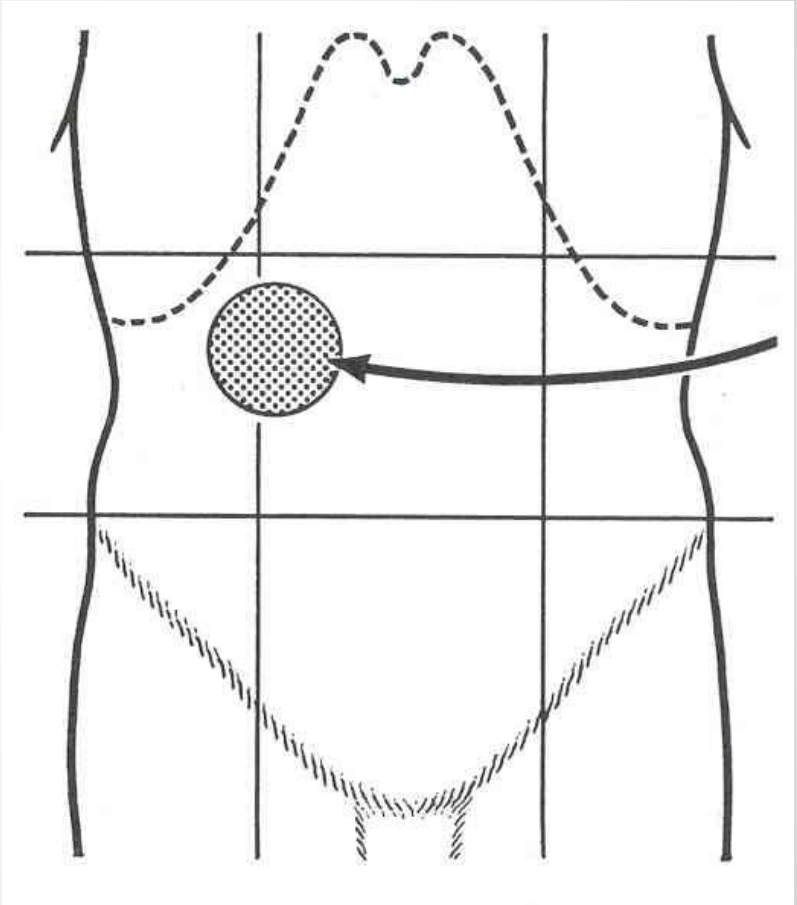
SEVERE, DIFFUSE ABDOMINAL PAIN

- Perforated appendicitis
- Perforated gastric or duodenal ulcer
- Acute pancreatitis
- Acute intestinal obstruction
- Mesenteric ischemia

SEVERE, DIFFUSE ABDOMINAL PAIN ETIOLOGIES



WHAT ARE SOME CAUSES OF SEVERE RIGHT UPPER QUADRANT PAIN?



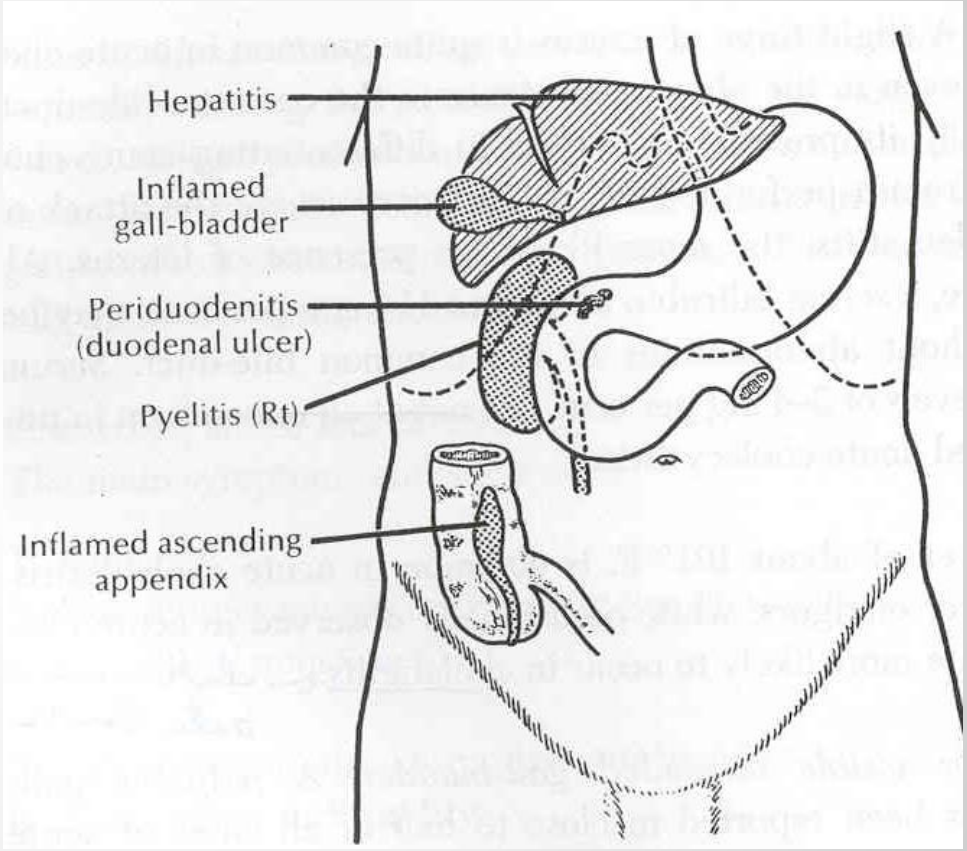
PAIN LOCATION DIFFERENTIAL DIAGNOSIS

RIGHT UPPER QUADRANT

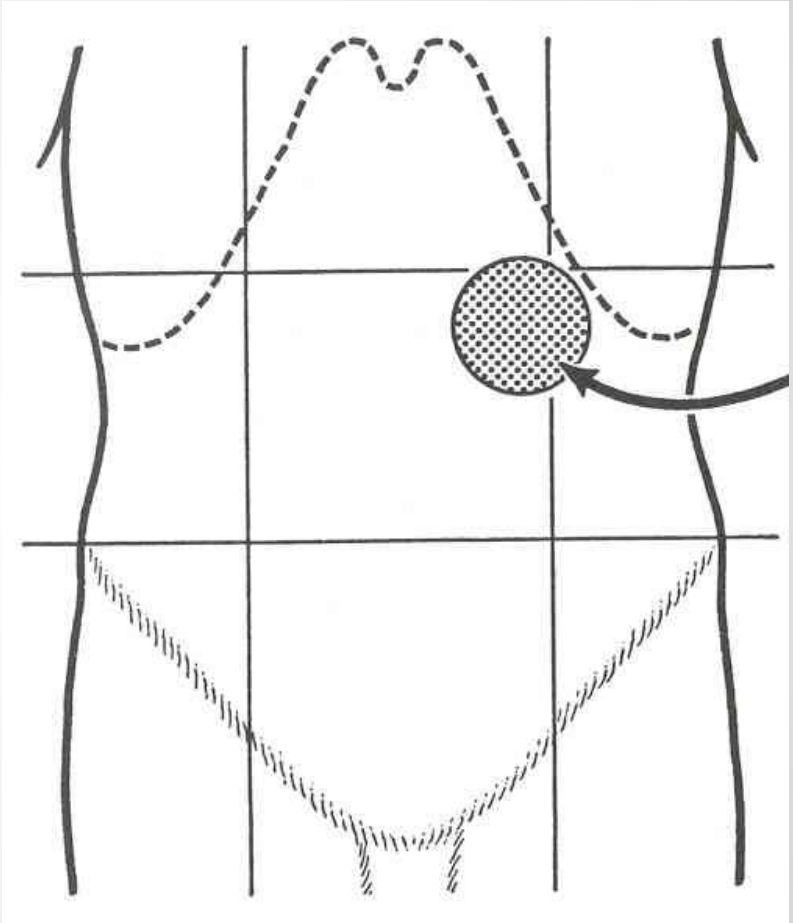
- Cholelithiasis, cholecystitis
- Hepatitis
- Gastritis, peptic ulcer disease
- Pleuritis
- Nephrolithiasis

WHAT DISEASES MAY MIMIC ACUTE CHOLECYSTITIS?

CHOLECYSTITIS DIFFERENTIAL DIAGNOSIS



WHAT ARE SOME CAUSES OF SEVERE LEFT UPPER QUADRANT PAIN?



PAIN LOCATION DIFFERENTIAL DIAGNOSIS

LEFT UPPER QUADRANT

- Colitis
- Myocardial infarction
- Acute splenomegally
- Nephrolithiasis

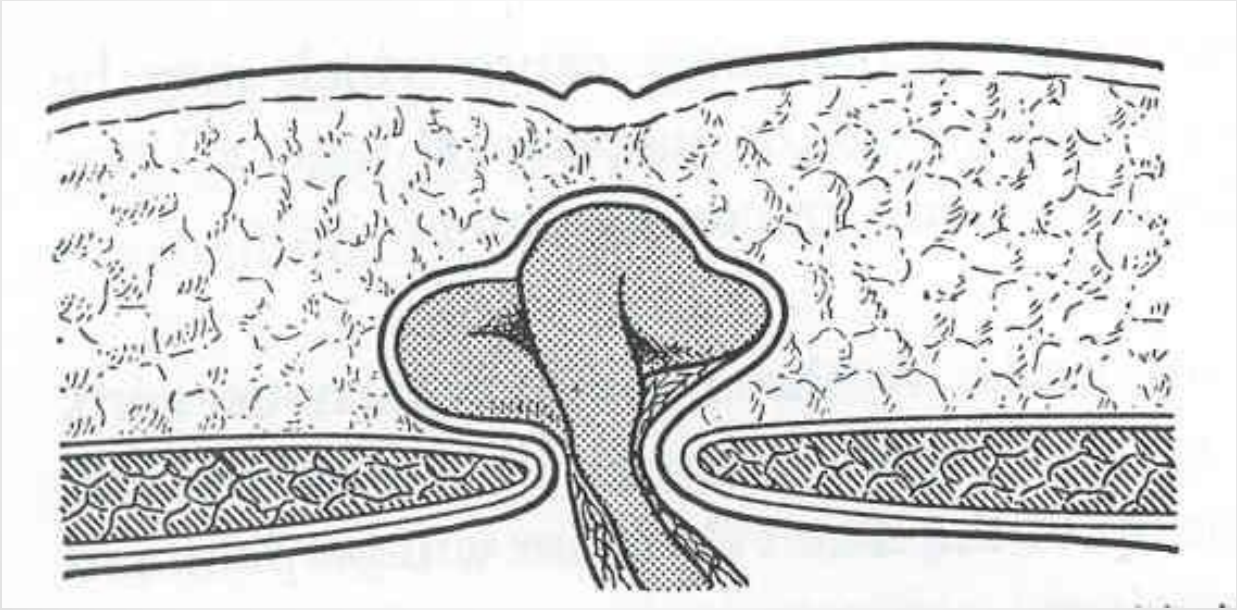
WHAT ARE CAUSES OF SEVERE EPIGASTRIC PAIN?

PAIN LOCATION DIFFERENTIAL DIAGNOSIS

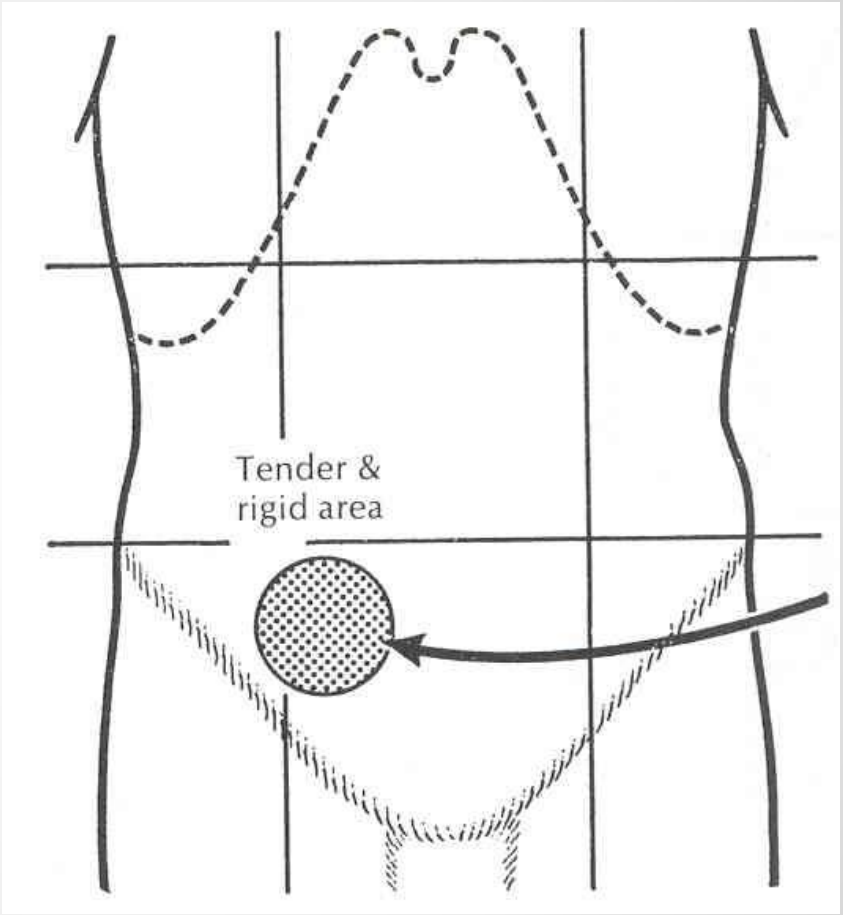
EPIGASTRIC

- Esophagitis
- Gastritis, peptic ulcer disease
- Cholelithiasis, cholecystitis
- Appendicitis
- Myocardial infarction
- Abdominal aortic aneurysm
- Mechanical bowel obstruction

ABDOMINAL WALL HERNEAS



WHAT ARE SOME CAUSES OF SEVERE RIGHT LOWER QUADRANT PAIN?

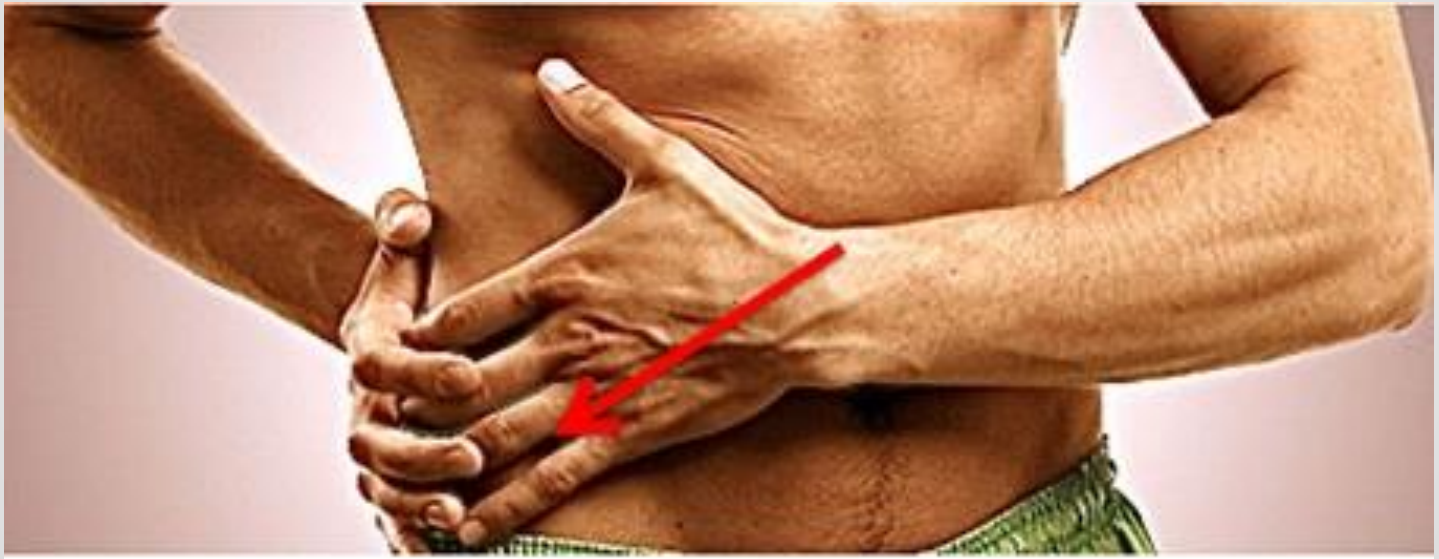


PAIN LOCATION DIFFERENTIAL DIAGNOSIS

RIGHT LOWER QUADRANT

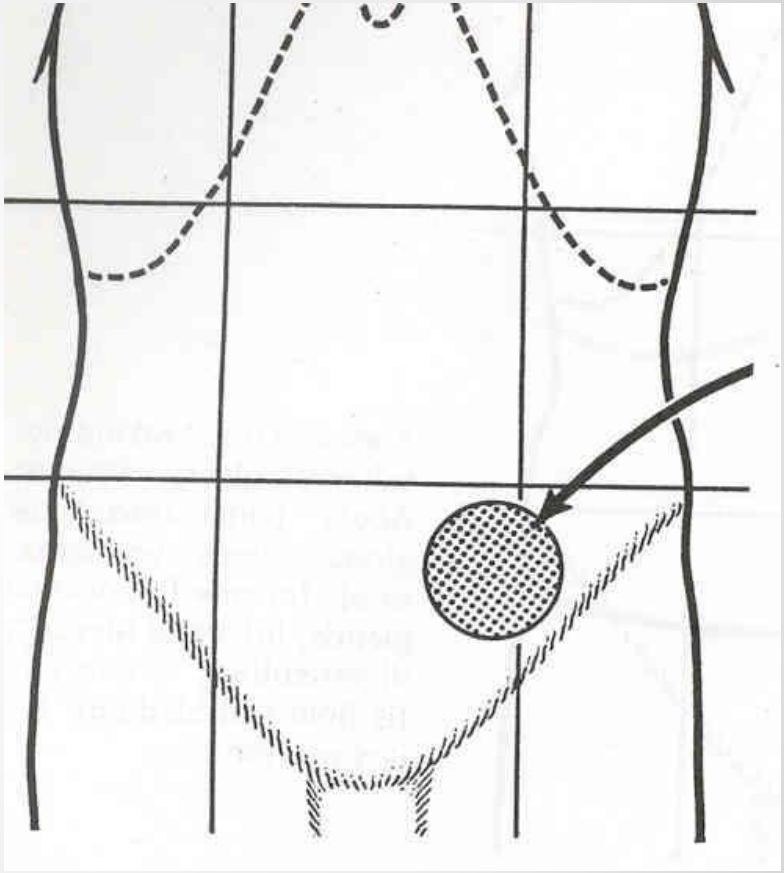
- Appendicitis
- Colitis
- Nephrolithiasis
- Mechanical bowel obstruction
- Females: ectopic pregnancy, ovarian torsion, pelvic inflammatory disease

APPENDICITIS
PAIN MIGRATION



Abdominal pain starts around the umbilicus, then shifts towards right lower abdomen

WHAT ARE CAUSES OF SEVERE LEFT LOWER QUADRANT PAIN?



PAIN LOCATION DIFFERENTIAL DIAGNOSIS

LEFT LOWER QUADRANT

- Colitis
- Nephrolithiasis
- Mechanical bowel obstruction
- Females: ectopic pregnancy, ovarian torsion, pelvic inflammatory disease

WHAT ARE SOME CAUSES OF SEVERE SUPRAPUBIC PAIN?

PAIN LOCATION DIFFERENTIAL DIAGNOSIS

SUPRAPUBIC

- Cystitis
- Abdominal aortic aneurysm
- Females: ectopic pregnancy, ovarian torsion, pelvic inflammatory disease

ABDOMINAL PAIN CASE STUDY

19-year-old male with epigastic pain. What are the likely causes?

DIFFERENTIAL DIAGNOSIS

- Gastroenteritis
- Gastritis, peptic ulcer disease
- Appendicitis
- Constipation
- Pancreatitis

ABDOMINAL PAIN CASE STUDY

30 year old female with lower abdominal pain. What are the likely causes?

DIFFERENTIAL DIAGNOSIS

- Cystitis
- Inflammatory bowel disease
- Constipation
- Appendicitis
- Ectopic pregnancy, ovarian torsion, pelvic inflammatory disease

ABDOMINAL PAIN CASE STUDY

45 year old male with epigastic pain. What are the likely causes?

DIFFERENTIAL DIAGNOSIS

- Myocardial infarction
- Gastritis/esophagitis
- Cholecystitis
- Gastroenteritis
- Pancreatitis

ABDOMINAL PAIN CASE STUDY

60-year-old female with periumbilical pain. What are the likely causes?

DIFFERENTIAL DIAGNOSIS

- Appendicitis
- Inflammatory bowel disease
- Gastroenteritis
- Pancreatitis
- Mechanical bowel obstruction
- Aortic aneurysm
- Abdominal wall hernea

ABDOMINAL PAIN CASE STUDY

75-year-old male with diffuse abdominal pain. What are the likely causes?

DIFFERENTIAL DIAGNOSIS

- Peritonitis: perforated ulcer or appendix
- Appendicitis
- Myocardial infarction
- Mechanical bowel obstruction
- Diverticulitis
- Mesenteric ischemia

How can you best increase your skills in managing acute abdominal pain?

INTERNATIONAL HEALTH ROTATIONS & SUPERVISED LEARNING OPPORTUNITIES

EQUIP YOURSELF TO BETTER SERVE FORGOTTEN PEOPLE

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