Acute Abdominal Pain

I, Structure

A. Abdominal cavity – inferior to the diaphragm and superior to the top of the pelvis.

B. Contains organs necessary for digestion and excretion. Also, contains a major division of the aorta – the abdominal aorta.

C. Not protected by bony structures like the thoracic cavity. Makes the organs susceptible to injury from trauma.

D. Organs can be divided into solid organs and hollow organs.

1. Solid organs are highly vascular and damage often causes internal bleeding – possibly severe.

2. Hollow organs contain gastric juices that can spill into the abdominal cavity when ruptured.

E. No bony landmarks so abdomen is divided into quarters with the belly button (umbilicus) as the reference point.

1. LUQ

a. Most of the stomach – hollow – starting point for the digestion of food.

b. Spleen – solid – behind and to the right of the stomach. Aids in the production of blood cells as well as storage and filtering of blood.

c. Pancreas – gland - aids in digestion and regulates carbohydrate metabolism.

d. Large intestine – hollow – reabsorbs fluid from the intestinal contents , enabling secretion of solid waste from the body.

e. Small intestine – hollow – absorbs nutrients from intestinal contents

f. Left kidney (upper portion) – paired organs - behind the abdominal lining in the peritoneum – excrete urine and regulate water, electrolytes and acid-base balance.

2. RUQ

a. Liver – most of – solid – filters the nutrients from the blood as it returns from the intestines, stores glucose and certain vitamins, plays a part in blood clotting, filters dead red blood cells and aids in the production of bile.

b. Gallbladder – hollow – underneath the right side of the liver – holds bile that aids in the digestion of fat.

c. Part of the large intestine.

d. Right kidney (upper portion)

e. Small intestine

3. RLQ

a. Appendix

b. Large intestine

c. Female reproductive organs

d. Small intestine

e. Right kidney (lower portion)

f. Right ureter

g. Right ovary & fallopian tube

4. LLQ

a. Large intestine

b. Small intestine

c. Left kidney (lower portion)

d. Left ureter

e. Left ovary

f. Left fallopian tube

5. Midline structures

a. Small intestine

b. Urinary bladder

c. Uterus

II. Acute abdominal pain

A. Many causes – 150 if you believe medical texts.   Cause doesn't change your treatment. Most cases you won't have a clue.

B. Referred pain – problem in one area of abdomen – hurts in another place. Due to the overlap of nerve pathways of the abdomen with other areas of the body.

1. Right shoulder (or neck, jaw, scapula) – possible irritation of the diaphragm (usually on the right); gallstone; subphrenic absess; free abdominal blood.

2. Left shoulder (or neck, jaw, scapula) – possible irritation of the diaphragm (usually on the left); ruptured spleen; pancreatic disease or cancer; subphrenic absess; abdominal blood.

3. Midline, back pain – aortic aneurysm or dissection; pancreatitis, pancreatic cancer, kidney stone.

4. Mid-abdominal pain – small bowel irritation, gastroenteritis, early appendicitis

5. Lower abdominal pain – diverticular disease (herniations of the mucosa and submucosa of the intestines), Crohn's disease (a type of inflammatory bowel disease), ulcerative colitis

6. Sacrum pain – perirectal abscess, rectal disease

7. Epigastrium pain – peptic, duodenal ulcer; gallstone, hepatitis, pancreatitis, angina pectoris

8. Testicular pain – renal colic; appendicitis.

C. Treat any acute abdominal pain as life-threatening until prove otherwise. Associated hypotension, syncope or pale, cool, and clammy skin – bad! Pain for ≥ 6 hours – bad!

III. Assessment

A. Scene size-up – no surprises here.

B. Initial assessment – no real surprises here, but be looking for signs of hypoperfusion – main priority.

1. Pt may be in guarded position.

2. s/s of hypoperfusion

a. Restlessness, anxiety – early sign

b. Rapid, weak (thready) pulse

c. cool, moist (clammy) skin

    d. falling BP (late sign)

3. Priority – transport immediately
    a. Poor general impression
    b. Unresponsive – no gag reflex
    c. Responsive, but not appropriately
    d. Dyspnea
    e. Hypoperfusion
    f. Uncontrolled bleeding
    g. Severe pain

C. Focused history
1. Responsive pt – do SAMPLE first
2. Unresponsive – do rapid trauma assessment and focused hx and physical exam first.
3. Do normal SAMPLE. Additional questions
    a. Have you had recent fever, sweats or chills? Yes – suggests the presence of an infection.
    b. Have you had nausea and vomiting? Yes – suggests an intestinal obstruction, illness or poisoning
        i. Did the pt vomit? If so, what was the color and appearance of the vomitus. Coffee grounds = partially digested blood.
    c. Are you distended or bloated? Abd may appear abnormally large, but your pt may be overweight, pregnant or simply blessed with an abundant "beer belly".
        i. Distention may indicate bleeding into the abdominal cavity or bowel obstruction. Bloating may be due to free air in the abdomen.
    d. When was your last bowel movement? Was it normal?
        i. Distinguish between loose stools and frequent stools (diarrhea)
        ii. Has constipation been a problem?

iii. What was the color of the pt's stool? Dark tarry stools = gastrointestinal bleeding.

a. Note that use of Pepto-Bismal type products and iron supplements may cause a pt to produce dramatically black stools.

e. When was your last period? Ruptured ectopic pregnancies are life-threatening and demand immediate transport.

f. Has there been a change in weight over the last few weeks?

i. A decrease may indicate chronic disease or cancer.

ii. An increase may indicate a collection of fluid in the abdomen or obstruction.

g. s/s

i. Pain or tenderness – may be diffuse, spaspodic or wavelike.

ii. Anxiety and fear

iii. Guarded position

iv. Rapid, shallow breathing

v. Rapid pulse – from pain or hypoperfusion

vi. s/s of hypotension

vii. Signs of internal bleeding

viii. N & V and diarrhea - distended abdomen

ix. Rigid or tense abdomen

h. Physical exam

i. Visual inspection

a. Expose abdomen and view with the pt in the supine position.

b. Check to see if the abdomen is flat sunken or distended.

c. Look for a bluish discoloration about the umbilicus – indicates free blood in the abdomen (Cullen's sign)

i. Auscultate the abdomen

i. Normal high-pitched peristaltic bowel sounds occur ~ every 5-10 sec.

ii. Blood or irritants inside the intestines cause hyperactive bowel sounds.

iii. Blood or irritants outside the intestines diminishes bowel sounds leading to a silent abdomen.

iv. If you do not hear bowel sounds after listening for one minute, you may report bowel sounds absent.

j. Palpate the abdomen.

i. If pt is ticklish, use pt's hand or a stethoscope.

ii. Soft bulges around the belly button may be hernias.

iii. Subcutaneous emphysema probably caused by intrathoracic trauma.

iv. Check for rigidity – muscles of the stomach are involuntarily tight or hard.

a. Indicates peritoneal irritation. Often will warrant surgical exploration.

v. Check for guarding – pt tenses abdominal wall to protect against pressure from your hand.

IV. Emergency care.

A. Maintain a patent airway.

B. Place pt in position of comfort.

C. Oxygen therapy – NRB – 15 lpm.

D. NEVER GIVE ANYTHING BY MOUTH.

E. Calm and reassure pt.

F. Expect hypoperfusion.

G. Transport.

V. Possible causes

A. Appendicitis

1. s/s

a. Abdominal pain & guarding – pain initially diffuse then localized.

b. N & V

c. Low-grade fever or chills

d. Loss of appetite

e. Abdominal guarding

f. Rebound reflex

B. Pancreatitis – inflammation of the pancreas

1. Triggered by ETOH or pigging out.

2. s/s

a. N & V

b. Abdominal tenderness

c. Severe abdominal pain with radiation from the belly button to the back and shoulders

d. Extreme cases – fever, rapid pulse and signs of shock

C. Cholecystitis – inflammation of the gallbladder – gallstones.

1. Occurs more often in women aged 30-50.

2. Gallstones may block opening from gallbladder to small intestine – increased pressure – big pain!

3. s/s

a. Sudden onset of abdominal pain from the middle of the upper quadrants to RUQ. Pain usually at night and associated with ingestion of fatty foods.

b. Tenderness upon palpation of RUQ

c. Low-grade fever

d. N & V (greenish)

D. Intestinal obstruction – adhesions, hernia, fecal impaction or overloading, or tumors.

1. Small intestine blockage – adhesions or hernia

2. Large intestine blockage – tumors or impaction.

3. s/s

a. Abdominal pain

b. Constipation

c. N & V

d. Distention

E. Hernia – projection of intestine through hole in abdominal wall.

1. Associated with heavy lifting or straining.

2. s/s

a. Sudden onset of abdominal pain

b. Fever

c. Tachycardia

d. Similar to intestinal obstruction

F. Ulcer – open wounds in the digestive tract

1. s/s

a. Sudden onset of abdominal pain in LUQ and epigastric area – described as burning or gnawing type pain before meals or stressful events

b. N & V – sometimes bloody

c. Signs of shock

d. Peritonitis with board-like abdomen

G. Esophageal varices – bulging, engorgement or weakening of blood vessels in the lining of the lower esophagus.

1. Common in alcoholics or pt's with liver disease.

2. s/s

a. Vomiting of large amounts of bright red blood.

b. Blood in the back of the throat with or without vomiting

c. Absence of pain or tenderness in the abdomen

d. Tachycardia

e. Dyspnea

f. Poor skin color, temperature and condition

g. Signs of hyperperfusion

h. Jaundice

H. Abdominal Aortic Aneurysm (AAA)

1. Weak spot in abdominal aorta

2. May rupture – often lethal.

3. 20% of men over 50 will have one.

4. s/s

a. Sudden onset of severe, constant abdominal pain. May radiate to lower back, flank or pelvis. Described as a tearing pain.

b. N & V

c. Mottled or spotty abdominal skin

d. Pale skin in legs due to decreased blood supply

e. Absent or decreased femoral or pedal pulses

e. Pulsating mass in abdomen – not burst.

f. Rigid and hard abdomen – burst.