

ADVANCED ASSESSMENT

Abdomen

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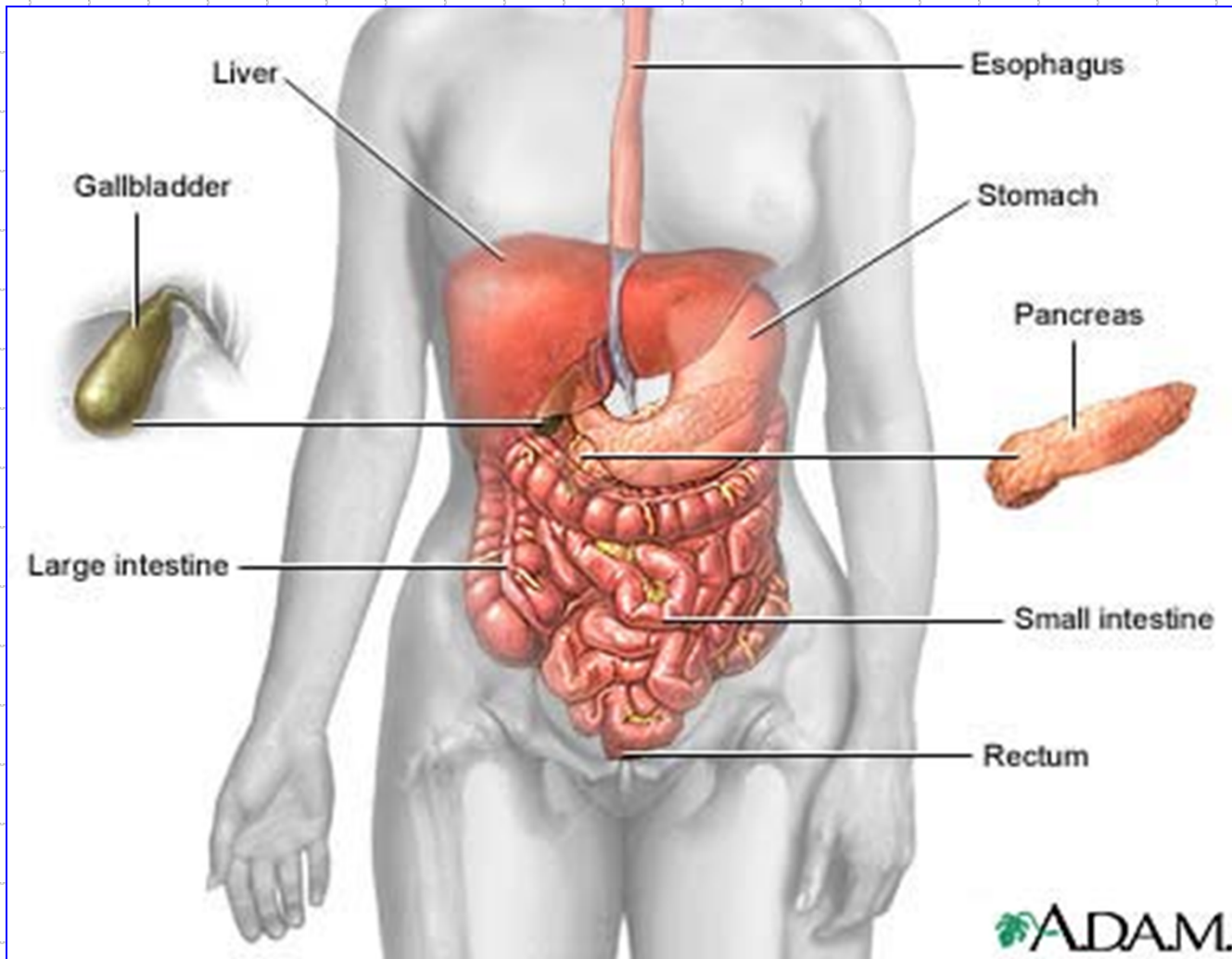
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Introduction

- ◆ why assess the abdomen in the prehospital setting?
- ◆ abdominal pain accounts for up 10% of emergency visits (Hamilton, 2003)
- ◆ 15-30% of patients with an acute abdomen will require a surgical procedure





Anatomy

- ◆ Gastrointestinal system involves the esophagus ,stomach, small and large intestines
- ◆ They work with the pancreas liver and gallbladder to convert nutrients from food into energy.
- ◆ Waste is then excreted.



Anatomy - 4 Quadrant System

Right Upper Quadrant (RUQ)

- ◆ diaphragm
- ◆ liver
- ◆ gallbladder
- ◆ kidney
- ◆ Hepatic flexure -large colon
- ◆ small intestine

Left Upper Quadrant (LUQ)

- ◆ spleen
- ◆ kidney
- ◆ pancreas
- ◆ stomach
- ◆ Splenic Flexure –large colon
- ◆ small intestine

Right Lower Quadrant (RLQ)

- ◆ appendix
- ◆ large ascending colon
- ◆ ovary
- ◆ uterus
- ◆ bladder
- ◆ small intestine

Left Lower Quadrant (LLQ)

- ◆ descending colon
- ◆ ovary
- ◆ uterus
- ◆ bladder
- ◆ small intestine



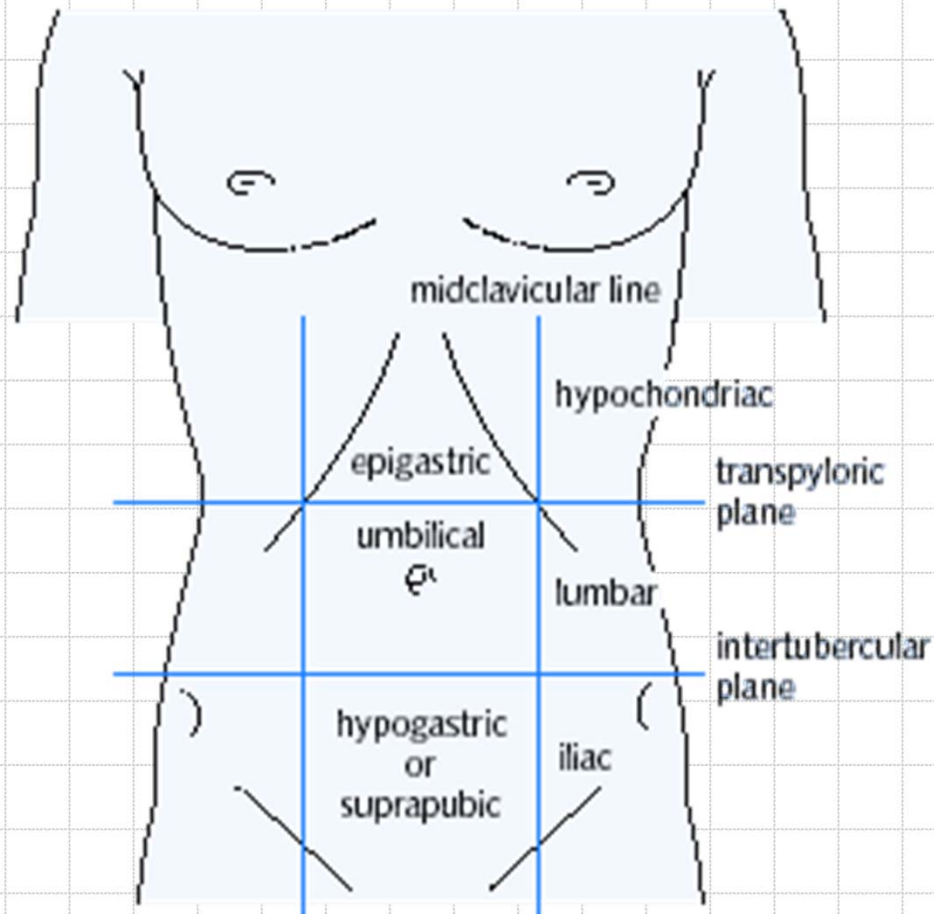
Anatomy - 9 Quadrant System

Right Hypochondriac	Epigastric	Left Hypochondriac
Right Lumbar	Umbilical	Left Lumbar
Right Iliac	Hypogastric (suprapubic)	Left Iliac

See graphic on next slide

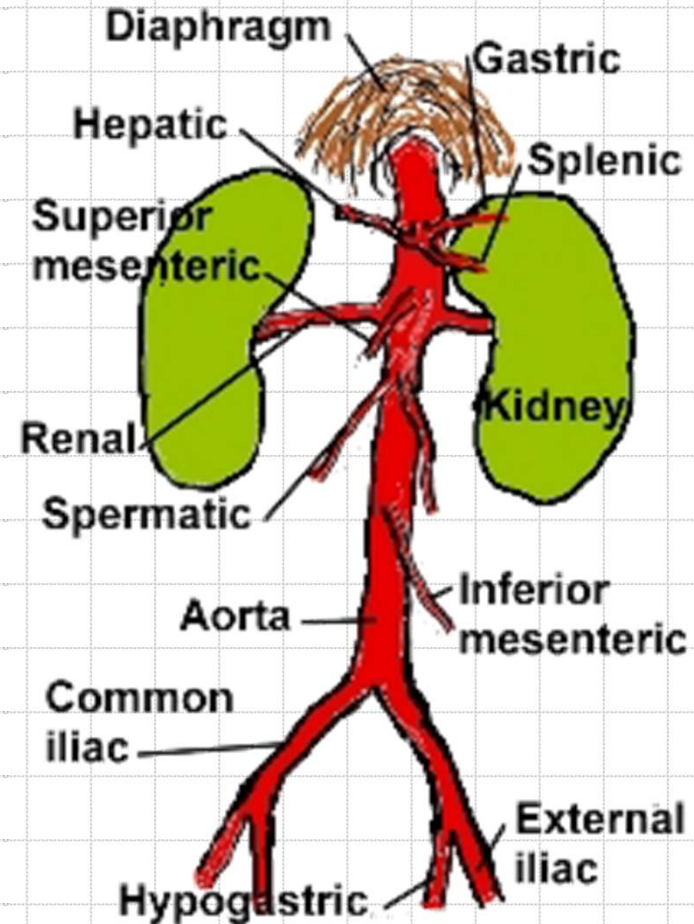


Anatomy - 9 Quadrant System



Anatomy of Abdominal vessels

- ◆ The descending aorta runs through the abdomen
- ◆ The hepatic artery branches off and supplies the liver
- ◆ The mesenteric artery branches off and supplies the stomach and intestines



Neuroanatomy of abdominal pain

Visceral

- ◆ stimulated by distension, inflammation and/or ischemia
- ◆ stretch receptors in the walls and capsules of hollow organs (i.e. gallbladder and intestines) and solid organs (i.e. spleen and liver)
- ◆ dull, achy, cramping or gassy pain
- ◆ generally localized to the epigastrium , periumbilical or suprapubic area
- ◆ comes and goes
- ◆ presents with nausea and vomiting, diaphoresis and tachycardia



Neuroanatomy of abdominal pain

Somatic / parietal

- ◆ also known as parietal
- ◆ constant and localized
- ◆ knife like with increased pain on movement
- ◆ presents with guarding and lying on side or back with legs up
- ◆ usually caused from bacterial or chemical irritation of nerves



Neuroanatomy of abdominal pain

Referred

- ◆ Pain located nowhere near where the affected organ is
- ◆ Due to neurons that share the same pathway
- ◆ “Kehr’s” sign is shoulder pain associated with abdominal pain.
- ◆ Back pain is also a common occurrence with abdominal pain



Assessment of Abdominal pain

O-P-Q-R-S-T

O_NSET

- ◆ rapid onset of severe pain is more consistent with a vascular catastrophe, passage of a ureteral or gallbladder stone, torsion of the testes or ovaries, rupture of a hollow, viscous, ovarian cyst, or ectopic pregnancy
- ◆ slower onset is more typical of an inflammatory process such as appendicitis or cholecystitis



Assessment of Abdominal pain

O-P-Q-R-S-T

Provokes / palliates

- ◆ pain provoked/aggravated by movement, such as hitting bumps on the road or walking is typical of somatic (parietal) peritoneal pain such as that seen in pelvic inflammatory disease or appendicitis
- ◆ eating often relieves ulcer related pain
- ◆ eating exacerbates biliary colic – especially fatty foods (usually 1-4 hours following a meal)
- ◆ Pancreatitis is palliated (relieved) by curling up in a fetal position
- ◆ frequent movement or writhing in pain is more typical of renal colic



Assessment of Abdominal pain

O-P-Q-R-S-T

Quality

- ◆ dull, achy or crampy is more likely to be visceral
- ◆ sharp, stabbing pain is more likely to be somatic or peritoneal
- ◆ severe tearing pain is classic of dissecting aneurysm



Assessment of Abdominal pain

O-P-Q-R-S-T

Region / radiation

- ◆ location of pain can vary with time
- ◆ periumbilical pain that migrates to the right lower quadrant is classic of appendicitis
- ◆ epigastric pain localizing to the right upper quadrant for several hours is typical of cholecystitis



Assessment of Abdominal pain

O-P-Q-R-S-T

Severity

- ◆ the patient's quantification of severity of pain is generally unreliable for distinguishing the benign from the life-threatening
- ◆ assigning a 1-10 pain scale rating does however allow for a baseline to gauge the patient's response to treatment
- ◆ pain that increases in severity over time suggests a surgical condition
- ◆ Severe epigastric or mid-abdominal pain out of proportion to physical findings is classic for mesenteric ischemia or Pancreatitis



Assessment of Abdominal pain

O-P-Q-R-S-T

T iming

- ◆ crampy pain that comes in waves is generally associated with obstruction of a viscus
- ◆ constant pain has a worse diagnostic outcome



Associated signs & symptoms

Nausea & vomiting (N/V)

- ◆ N/V generally associated with visceral disorder
- ◆ excessive vomiting should raise suspicion of a bowel obstruction or Pancreatitis
- ◆ lack of vomiting is common in uterine or ovarian disorders
- ◆ pain present before vomiting is more likely caused by a disorder that will require surgery
- ◆ vomiting that precedes Abdo pain is more likely a gastroenteritis or other non-surgical condition



Associated signs & symptoms

Urgency to defecate

may suggest...

- ◆ intra-abdominal bleeding
- ◆ inflammation/irritation in the recto sigmoid area
- ◆ ectopic pregnancy
- ◆ abdominal aortic aneurysm (AAA)
- ◆ retro peritoneal hematoma
- ◆ omental vessel hemorrhage



Associated signs & symptoms

Anorexia

- ◆ intra-abdominal inflammation
- ◆ common in appendicitis



Associated signs & symptoms

Change in bowel habits

- ◆ diarrhea with vomiting is almost always associated with gastroenteritis
- ◆ diarrhea may occur with Pancreatitis, Diverticulitis and occasionally Appendicitis
- ◆ bloody stool indicates GI bleed
- ◆ constipation or difficulty passing stool or gas may be due to an ileus (impairment in peristalsis) or bowel obstruction



Associated signs & symptoms

Genitourinary symptoms

- ◆ dysurea, urgency and frequency are suggestive of cystitis (inflammation of the bladder), salpingitis, diverticulitis or appendicitis
- ◆ Hematuria with pain suggests urinary tract infection, but can also indicate renal colic, prostatitis or cystitis



Associated signs & symptoms

Extra-abdominal symptoms

- ◆ myocardial infarction
- ◆ pneumonia
- ◆ pulmonary embolus

} can present with abdominal pain



Relevant history

Past medical history

- ◆ prior abdominal surgery is a common cause of adhesions and can lead to bowel obstruction
 - ◆ prior surgery may also help eliminate certain diagnosis – e.g. appendicitis, cholecystitis
 - ◆ Diabetes, heart disease, lung disease, liver disease, hypertension, or renal disease increase the risk of abdominal disorders – e.g. HTN is associated with abdominal aortic aneurysm, atrial fibrillation is a common cause of emboli in the mesenteric vessels and can lead to infarction of parts of the GI tract and an ileus or bowel obstruction



Relevant history

Medication

- ◆ Corticosteroids and other immunosuppressants alters the response to abdominal pathology – i.e. pain less severe or absent. Fever may be absent
- ◆ antibiotics may cause GI discomfort and diarrhea – especially erythromycin and tetracycline
- ◆ laxatives, narcotics and psychotropic medication may alter GI motility – e.g. use of codeine can to an ileus, severe constipation or bowel obstruction
- ◆ ASA and other NSAIDS can cause gastritis, peptic ulcer and GI bleeding



Causes of Abdominal Pain

- ◆ Mesenteric artery occlusion
 - ◆ Mortality rate of 70 – 90%
 - ◆ Found in people with heart conditions like atrial fibrillation, atrial flutter and those who have had heart valves replaced
 - ◆ Occlusion causes ischemia and pain out of proportion to their appearance



Causes of Abdominal Pain

- ◆ Appendicitis
 - ◆ Most common abdominal emergency
 - ◆ Caused by viral or bacterial infection or obstruction
 - ◆ Becomes gangrenous and ruptures
 - ◆ Early onset presents as visceral pain
 - ◆ Later presentation is somatic, intense and localized to “McBurney’s Point” (RLQ just inside the iliac crest)



Causes of Abdominal Pain

- ◆ Abdominal Aortic Aneurysm
 - ◆ AAA
 - ◆ Usually found between the bottom of the renal arteries and the top of the iliac arteries
 - ◆ Affects more men than women
 - ◆ Usually over 50 years old
 - ◆ Tearing ripping pain through to the back
 - ◆ Look for a pulsating mass



Causes of Abdominal Pain

- ◆ Epigastric pain
 - ◆ Gastro-esophageal reflux (heart burn) is caused from the back up of stomach acid into the esophagus
 - ◆ Peptic ulcers may be the cause. This is when there is a break in the lining of the esophagus or the stomach
 - ◆ Gnawing or burning feeling
 - ◆ REMEMBER this can be cardiac related



Causes of Abdominal Pain

- ◆ Bowl Obstruction
 - ◆ common in the elderly
 - ◆ Intestinal pathway becomes blocked
 - ◆ usually a severe onset with nausea and vomiting
 - ◆ gassy fecal odour
 - ◆ localized cramping pain



Causes of Abdominal Pain

- ◆ Pancreatitis
 - ◆ Inflammation of the pancreas due to poor production of digestive enzymes
 - ◆ Sharp twisting pain in the LUQ or in the epigastric area radiating to the back
 - ◆ Presents with fever, nausea and vomiting, distention and diaphoresis



Causes of Abdominal Pain

- ◆ Gallstones
 - ◆ Formed in the gallbladder from cholesterol saturated in bile which then calcifies
 - ◆ Sharp pain localized in the RUQ
 - ◆ Restless, nausea and vomiting
 - ◆ Pain can radiate into back
 - ◆ Often have had past occurrences



Causes of Abdominal Pain

- ◆ Gastrointestinal Bleeding
 - ◆ Often caused from ruptured esophageal varicies
 - ◆ Peptic ulcers
 - ◆ Mallory-Weis tear at the esophageal gastric junction from severe retching
 - ◆ Rectal abnormalities
 - ◆ Presents with frank bright red emesis, coffee ground emesis, melena and bright red stool



Causes of Abdominal Pain

Ectopic Pregnancy

- ◆ assume females of child bearing years with abdominal have an ectopic pregnancy until proven otherwise
- ◆ when the fertilized egg implants outside the uterine cavity
- ◆ also called a tubal pregnancy
- ◆ present with extreme unilateral lower pain – worsened by palpation
- ◆ referred pain to shoulder
- ◆ usually around 6 weeks
- ◆ has menstrual cycle been regular?
- ◆ any loss of blood or other coloured fluid?



Causes of Abdominal Pain

Renal Colic

- presents with sudden severe pain..
- can be flank radiating down to groin
- can be just flank or even just around the back
- Patient writhing in pain..have a yellow/green hue to their skin
- vomiting with the pain
- may have a previous history of the same
- can have blood in the urine..new or ongoing for a couple of days.



Causes of Abdominal Pain

- ◆ Questions to ask
 - ◆ Use the mnemonic OPQRST
 - ◆ Is it tender to touch
 - ◆ Have they had a fever
 - ◆ Any history of the same
 - ◆ Are they pregnant (females of course), and which trimester are they in
 - ◆ Have they eaten or had anything to drink



Causes of Abdominal Pain

- ◆ Have they eaten anything different
- ◆ Any excessive alcohol or drug use
- ◆ Any history of hypertension, cardiac or respiratory disease
- ◆ What is the position of most comfort
- ◆ Any dizziness
- ◆ Check for orthostatic vital signs – if patient stable
- ◆ If they look sick.....they are.



Causes of Abdominal Pain

- ◆ Look for pulsating masses (don't press it)
- ◆ Are there bowel sounds present
- ◆ Look for distal cyanosis
- ◆ Tenderness, guarding or distention
- ◆ Bowel movements. Have they been regular or has there been a change (diarrhea or blood)
- ◆ Any vaginal bleeding



Question # 1

A 42 year old has ingested ethyl alcohol 2 hours previous and is now complaining of severe abdominal pain. He seems quite hot to touch and is tachycardic and hypotensive. What is this most likely to be?

- A** gastritis
- B** hernia
- C** peptic ulcer
- D** Pancreatitis

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- D Pancreatitis



Question # 2

A 24 year old just recovered from “gastroenteritis” however he states that he has severe pain that he pinpoints to being just above his right groin. What would be the most likely cause?

- A diverticulitis
- B appendicitis
- C bowel obstruction
- D Pancreatitis

Question # 2

A 24 year old just recovered from “gastroenteritis” however he states that he has severe pain that he pinpoints to being just above his right groin. What would be the most likely cause?

A diverticulitis

B appendicitis

C bowel obstruction

D Pancreatitis



Question # 3

A 40 year old female is complaining of severe diffuse abdominal pain. Questions to ask?

A last menstrual period?

B any problems voiding?

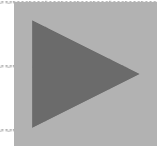
C last bowel movement?

D all of the above

Question # 3

A 40 year old female is complaining of severe diffuse abdominal pain. Questions to ask?

- A last menstrual period?
- B any problems voiding?
- C last bowel movement?
- D all of the above



Question # 4

The cause of acute abdominal pain is most accurately assessed in the prehospital setting by which of the following?

A abdominal examination

B patient history

C secondary assessment

D vital signs assessment

Question # 4

The cause of acute abdominal pain is most accurately assessed in the prehospital setting by which of the following?

B patient history

RATIONALE: The patient's age, gender and description of the medical history often reveals more about the abdominal problem than the physical examination of the abdomen. The severity of the patient's condition is determined by the physical exam.



Question # 5

Which of the following conditions best describes an open erosion wound in the digestive system that can bleed?

A

gastritis

B

hernia

C

peptic ulcer

D

abdominal aortic aneurysm

E

esophageal varicies

Question # 5

Which of the following conditions best describes an open erosion wound in the digestive system that can bleed?

- A gastritis
- B hernia
- C peptic ulcer
- D abdominal aortic aneurysm
- E esophageal varicies



Well Done!

Ontario Base Hospital Group
Self-directed Education Program



MENU

QUIT

SORRY,
THAT'S NOT THE CORRECT ANSWER

