

# Abdominal Pain

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# Common Causes of Abdominal Pain

- *Infants* - colic, gastroenteritis, constipation, viral, pyloric stenosis, intussusception
- *Older children* - appendicitis, UTI's, toxic ingestions
- *Adolescents* - pelvic infections, ovarian cysts, dysmenorrhea, appendicitis, pregnancy
- *Adults (Geriatric)* - cholecystitis, malignancy, bowel obstruction

# Three Types of Abdominal Pain

- *Visceral* - crampy, colicky, intermittent, poorly localized
- *Somatic* - sharper, more localized, inflamed organ
- *Referred* - felt in cutaneous site distant from diseased organ

# Sources of Abdominal Pain

- *Intra-abdominal* - obstruction of hollow viscus, vascular disease
- *Extra-abdominal* - renal colic, metabolic disorders

# Principles of Diagnosis

- Acute abdominal pain
  - Needs an early diagnosis
  - Tendency to temporize & allow condition to declare itself
  - Severe abdominal pain in otherwise well patient for >6 hours; suggests surgical abdomen
  - No narcotics unless given by surgeon in charge, after thorough evaluation
  - Control emesis
  - No nasogastric tube unless bowel obstruction documented

# Knowledge of Anatomy

- Referred pain
  - In appendicitis, irritation of psoas muscle causes flexion of the thigh
  - If abscessed immediate to fascia, pain results with inward rotation of flexed thigh
  - Referred pain to testes can be appendicitis or pain in testes can be kidney on same side
  - Shoulder pain - seen with subphrenic abscess, diaphragmatic pleurisy, acute appendicitis, pancreatitis, ruptured spleen

# Knowledge of Anatomy

- Referred pain, cont.
  - Pain on top of both shoulders, median diaphragmatic irritation
  - Heel tap - pain at right lower quadrant
    - Think appendicitis
    - Consider ectopic pregnancy

# Knowledge of Physiology

- Possible to crush, tear, or cut intestine without pain to patient
- Stimulus for intestinal pain is stretching or distention
- Distension of intestine - colic
- Severe colic - occurs in paroxysms
- Small intestine pain - usually epigastric or umbilical

# Knowledge of Physiology

- Large intestine colic - localized to hypogastrium
- Biliary distension - pain localized to right subscapular area
- Renal colic - localized to loin and corresponding testicle
- Not peritonitis - movement makes the pain worse

# Paroxysmal pain with Characteristic Twisting and Doubling Over

- Usually intestinal obstruction
- Not peritonitis - movement makes this pain worse

# Shock

- Tachycardia, pale, diaphoretic, BP drop in early stages of abdominal pain usually indicates intra-abdominal hemorrhage; shock in later stages of abdominal pain - more associated with decreased intravascular volume secondary to fluid loss, vomiting, sequestration of fluids into distended intestine, bleeding into infarcted intestine

# Exclusion of Medical Diseases

- Patients taking adrenal steroids
  - Special case, diminishes symptoms due to inflammation
  - Can cause intestinal perforations with chronic use
  - Even slight abdominal pain should be taken seriously

# History

- Time of onset (indication of severity, changing nature of pain and time)
- Pain with activity (what were you doing when the pain began?)
- Presence of nausea/vomiting (if N/V follow pain, suspect a surgical abdomen)
- Patient's age (acute intussusception in temperate climates occurs in infants under two years of age)

# History

- Torsion of gut or ovary - sudden, sharp pain
- Shifting or localizing of pain - first felt in thorax, but now in a dissecting aneurysm
- Character of pain - gastric ulcer - burning pain
- Acute pancreatitis - agonizing pain
- Dissecting aneurysm - tearing pain (also renal lithiasis)

# History

- Biliary colic - sharp, constricting pain - “takes the breath away”
- Abdominal obstruction - gripping pain
- Appendicitis - acute aching
- Pyelonephritis - constant, dull pain

# History

- Radiations of pain
  - Sometimes diagnostic
  - Biliary colic - pain referred to inferior angle of right scapula
  - Renal colic - testicle on same side
  - Pleuritic pain - worse with deep inspiration
  - Gallbladder inflammation - pain is worse with forced respiration

## Special Types of Pain

- Pain with micturition - renal stone, colic, pelvic abscess, inflamed appendix irritating right ureter, acute hydronephrosis
- Pain with reclining, relieved by sitting up; is often retroperitoneal
- Always ask about menstruation

# Physical Exam

- General appearance
  - Facial expressions, grimace, able to communicate
  - Cool, clammy skin
  - Pallor to skin, cheeks, tongue, conjunctiva, fingernails (capillary refill), anemia
  - Nasal flaring, temperature, respiratory rate, pulse

# Physical Exam

- Attitude lying down
  - Restlessness and severe colic
  - Immobile - peritonitis
  - Knees drawn up - peritonitis
  - Pancreatitis or retroperitoneal pain - prefer to sit up

# Abdominal Exam

- Ask patient where it hurts
- Inspection of abdomen - look for distension (local or general)
- Check hernial areas
- Movement on respiration - with a perforated viscus, the abdomen wall does not move well with respiration

# Abdominal Exam

- Palpation and percussion of abdomen
  - Be gentle
  - Extent and intensity of muscle rigidity
  - Locate tender areas
  - Flex patient's thighs while palpating abdomen
  - Percussion
    - Amount of distension of gut
    - Map out any dullness

# Abdominal Exam

- Rebound tenderness
  - Press down, then suddenly release; severe pain on rebound
  - Not always a good test

# Abdominal Exam

- Rigidity
  - Contraction of abdomen muscles
- Board-like abdomen - usually young people with severe irritation of peritoneum
- Rigidity often absent in pelvic inflammatory lesion and intestinal obstruction

# Abdominal Exam

- Hyperesthesia
  - Tested with light stroke of finger or cotton swab
  - Useful in patients with chronic or recurring pain
  - Testing for nerve root compression as source of pain

# Abdominal Exam

- Iliopsoas rigidity
  - Inflamed focus in relation to psoas muscle
  - Corresponding thigh is flexed to relieve pain
  - Patient lies on opposite side and extends thigh, reproducing pain

# Abdominal Exam

- Male
  - Check prostate, bladder, seminal vesicles
- Female
  - Swelling of pouch of Douglas, enlargement/displacement of uterus

# Abdominal Exam

- Rectal
  - Fecal impaction
  - Test for tenderness of pelvic peritoneum
  - Pressure laterally - tender appendix
  - Pressure posterior - tumor, inflammation of pyriformis
  - Cervical manipulation - pelvic peritoneal inflammation

# Abdominal Exam

- Auscultation
  - A quiet abdomen - relates more to peritonitis
  - Loud, hyperactive sounds - association with intestinal obstruction
  - Check for bruits

# Abdominal Exam

- Lab
  - Often useless
  - UA
  - Pregnancy test, quantitative Beta-HCG
  - ECG in older patients
  - Electrolytes/BUN in patients with contracted volumes

# Abdominal Exam

- Lab
  - CBC, if blood loss suspected
  - Type and cross for suspected shock
  - Flat plate and upright of abdomen - look for free air, stair-stepping
  - Barium useful in suspected intussusception
  - Reserve MRI, ultrasound, CT, endoscopy for specific problems

# Specific Diseases - Appendicitis

- 10-30 year age range, most common
- Symptoms: anorexia, periumbilical pain, localized right lower quadrant pain (not always present), rebound tenderness suggests peritoneal involvement

## Specific Diseases - Cholecystitis

- Cholelithiasis, acalculous cholecystitis, ascending cholangitis, empyema gangrene
- Post cholecystectomy - obstruction of cystic duct
- Ascending cholangitis - common duct stones - intolerance to fatty foods, gas in gallbladder wall on x-ray, stones on ultrasound

## Specific Diseases - Perforated Viscus

- Causes patients on nonsteroidals (NSAIDs) and steroids, foreign bodies, inflammation, neoplastic disease
- Sudden onset
- Perforation of ulcers, gallbladder, acute distress, colicky pain, vomiting, tachypnea, signs of shock, abdominal tenderness, rigidity, decreased bowel sounds, free air under diaphragm

# Specific Diseases - Intestinal Obstruction

- Dynamic or paralytic
- Small bowel obstruction - mechanical, causes, postsurgical adhesions (number one)
- Incarcerated inguinal hernias
- Tumors

# Intestinal Obstruction

- Crohn's disease
- Colonic obstruction - carcinoma, diverticulitis
- Volvulus, impaction, characterized by distension
- Vague pain, flatus

# Hernias

- Indirect, most common type, mostly in men
- Incarcerated hernia - leads to strangulation and toxicity
- The larger the hernia the less likely it will incarcerate and easier it is to reduce

## Reference

- Silen, W. Cope's Early Diagnosis of the Acute Abdomen. Revised, 18<sup>th</sup> Edition. Oxford University Press, New York. 1991.