General signs and symptoms of abdominal diseases

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Symptoms

- A. Abdominal pain
- B. Vomiting
- C. Gastrointestinal hemorrhage
- D. Diarrhea, constipation
- E. Jaundice
Abdominal pain/Origin

- Stretching of a hollow organ or tension in the wall of an organ
- Inflammation
- Ischemia
- Referred pain to extraabdominal sites (sympathetic pathways-spinal sensory neurons also receive input from peripheral nonpain neurons)
Abdominal pain/Patterns

- Visceral - dull poorly localized
- Parietal peritoneum inflammation - intense, well localized
- Referred - superficial, innervated by the same spinal segment
# Abdominal pain/Acute

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DISEASES</th>
<th>PAIN QUALITY/CHARACTERISTICS</th>
<th>PAIN REFERRAL</th>
<th>PAIN PROGRESSION</th>
<th>ASSOCIATED FINDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Onset Pain</td>
<td>Perforated duodenal ulcer</td>
<td>Severe; may have history of chronic ulcer pain</td>
<td>Back</td>
<td>Rapidly progresses over the entire abdomen</td>
<td>Abdominal guarding, free air in peritoneal cavity on x-ray.</td>
</tr>
<tr>
<td></td>
<td>Acute cholecystitis</td>
<td>Colicky or steady</td>
<td>Tip of scapula</td>
<td>Pain intensity steadily increases over hours</td>
<td>Fever, localized tenderness in gallbladder.</td>
</tr>
<tr>
<td></td>
<td>Acute pancreatitis</td>
<td>Steady Boring</td>
<td>Back</td>
<td>Pain localizes to right upper quadrant</td>
<td>Gallstones visible on ultrasound examination.</td>
</tr>
<tr>
<td></td>
<td>Small bowel obstruction</td>
<td>Cramping</td>
<td>Back</td>
<td>Peritoneal signs may appear later in severe cases</td>
<td></td>
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<td></td>
<td>Hyperactive bowel sounds, nausea and vomiting, decreased bowel sounds.</td>
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<tr>
<td></td>
<td>Appendicitis</td>
<td>Cramping Steady</td>
<td>Back or groin in some cases</td>
<td>Pain localizes to right lower quadrant</td>
<td>Abdominal distention, localized tenderness.</td>
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<tr>
<td></td>
<td>Intestinal infarction</td>
<td>Severe aching; may be diffuse</td>
<td></td>
<td>Progresses to peritonitis</td>
<td>Occult blood in feces, abdominal and rectal examination.</td>
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<td></td>
<td>Lower quadrants</td>
<td>Dissecting aortic aneurysm</td>
<td>Flank Inguinal regions</td>
<td></td>
<td>Dehydration, lactic acidemia, shock.</td>
</tr>
<tr>
<td></td>
<td>Diverticulitis</td>
<td>Sudden, severe Boring, heaving; may be periumbilical</td>
<td>Back</td>
<td></td>
<td>Abdominal distention, abdominal mass.</td>
</tr>
<tr>
<td></td>
<td>Colon obstruction</td>
<td>Aching, often left lower quadrant</td>
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<td></td>
<td>Abdominal distention, hyperactive bowel sounds.</td>
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</tbody>
</table>

Chronic Pain
Acute abdominal pain/ Management

• **Potential lethal problems**- need for prompt surgical or medical intervention

• **Rule out extraabdominal causes:**
  - Thorax- pneumonia, inferior myocardial infarction
  - Spine- radiculitis
  - Genitalia-torsion of the testis
  - Metabolic causes: uremia, diabetic ketoacidosis, porphyria, lead poisoning
  - Neurogenic causes: herpes zooster, tabes dorsalis
Abdominal pain/Management

- History, associated symptoms
- Observation: restlessness, or immobile
- Palpation: tenderness-guarding, rigidity-signs of peritoneal irritation, presence of masses or incarcerated hernias
- Percussion: fluid in the abdomen, bowel distension
- Auscultation: bowel sounds
Abdominal pain/ Management

- Rectal digital examination
- Laboratory tests: Ht, wbc, differential, glucose, bilirubin, electrolytes, BUN, transaminase, amylase, lipase, urinalysis, stool for occult blood or pus
- Imaging procedures:
  plain films-free air, intestinal gas pattern, stones
  US, TcHida
  endoscopic procedures
Free abdominal air
Bowel obstruction

- Dilated loops of small bowel
- Collapsed colon
Necrotizing colitis
Obstructive uropathy
Gallbladder stones
Acute appendicitis with stone
Acute appendicitis US
Choledochus stone and sludge by US
Pancreas pseudocyst by CT
B. Vomiting - characteristics

History
• Early morning - pregnancy, uremia, alcoholism
• Without nausea - elevated intracranial pressure

Inspection of vomitus:
• Undigested food - pylorus stenosis
• Bile constantly present in large quantities - obstruction below the ampulla of Vater
• Feculent or putrid - distal intestinal obstruction
• Bloody - upper GI cause
B. Vomiting-associated symptoms

Diarrhea - gastroenteritis
Meningism, headache - increased intracranial pressure
Colic – biliary, - kidney stone
Visual disturbance - glaucoma
Confusion - intoxication
Amenorrhoea - pregnancy
Management of vomiting patient

Physical examination
- Signs of hypovolaemia (blood pressure and pulse rate)
- Examination of the abdomen – signs of abdominal diseases
- Neurological examination – consciousness, reflexes, edema of papillae, visual field defects

Other examinations:
- As at acute abdomen, if you suspect abdominal disease
- Neurologic consultation- brain CT /MR
- Toxicologic examinations
Abdominal pain and nausea, vomiting

- Obstruction
- Motility disorders
- Peritoneal irritation
- Drugs, gastric mucosa irritants
- Other-intracranial pressure increase, psychogenic, pregnant, alcoholics
Case of a 42 years old man

- 1988. Dg.: Obesity. HLP. IGT. Cholelithiasis
- 1990. After some hours of dinner, abdominal pain and vomiting
- Physical exam.: distended abdomen, moderate, diffuse tenderness, diminished bowel sounds. RD: empty ampulla, brown colored stool.
Case of a 42 years old man/2

- Chest X ray: Fleischner atelectasis
- Plain abdominal: no characteristic abnormalities
- Abd. US: pseudocyst of the pancreas
- Lab. Values: Sed., Hb, leukocytes, liver enzymes were normal, Se bi 22 uM/l (n:19) gammaGT 101U/l (n:28), Se amilaz 836U/l (n:121), vizelet amilaz 13376 (n:530)
- Dg. Acute pancreatitis.
Case of a 40 years old woman

- Smoker, but never had any illness.
- In the morning she squattingly cleaned the stove, stood up, when acute sharp, epigastric pain appeared.
- Chest and abdominal X ray: free abdominal air
- Urgent surgery: perforation of a duodenal ulcer.
Case of a 50 years old man

- Moderate obesity, and smoking
- After some hours of dinner epigastric/chest pain and vomiting.
- Ambulance doctor did an ECG.
50 years old man, ECG 2
Case of an 50 years old man/3

- Urgent coronary angio: no coronary disease
- Transportation to our department.
- Physical ex.: fever 37,8 C, moderate abdominal distension, right upper abdominal tenderness
- Lab.values: leukocytosis, moderately elevated Sebi, SGOT GPT, SAP
- Abd. US: cholecystolithiasis, inflamed, thick-walled gall-bladder.
- Dg: Acute cholecystitis.
Case of a 65 years old man/1

- Gradually increasing abdominal pain in the last some days.
- ECG: Sinus tachycardia.
- Blood and urine specimens for lab.
Case of a 65 years old man/2

- Chest and abd. plain X ray: neg.
- Abd. US: negative
- Lab. results: glucose level is high, glucose and ketonuria
- Dg. Diabetic ketoacidosis.
  (metabolic acidosis induced compensatory hyperventilation and can cause abdominal pain)
- After adequate amount of fluid infusion, and insulin treatment, metabolic acidosis and symptoms disappeared.
C. Gastrointestinal hemorrhage

- Acute, chronic
- Hematemesis: vomiting of bright red blood or coffee grounds gastric contents—bleeding site is proximal to the lig. of Treitz
- Melena: passage of black tarry stool—blood loss is greater than 500ml—cause most often upper GI bleeding
- Hematochezia: passage of bright red or maroon-colored stools—cause most often lower GI bleeding
Gastrointestinal hemorrhage/ Causes

<table>
<thead>
<tr>
<th>UPPER GI</th>
<th>UPPER OR LOWER GI</th>
<th>LOWER GI</th>
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<tbody>
<tr>
<td>Duodenal ulcer</td>
<td>Neoplasms</td>
<td>Hemorrhoids</td>
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<tr>
<td>Gastric ulcer</td>
<td>Arterial-enteric fistulas</td>
<td>Anal fissure</td>
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<tr>
<td>Anastomotic ulcer</td>
<td>Vascular anomalies</td>
<td>Diverticulosis</td>
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<tr>
<td>Esophagitis</td>
<td>Angiodyplasia</td>
<td>Ischemic bowel disease</td>
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<tr>
<td>Gastritis</td>
<td>Arteriovenous malformations</td>
<td>Inflammatory bowel disease</td>
</tr>
<tr>
<td>Mallory-Weiss tear</td>
<td>Hematologic disease</td>
<td>Meckel’s diverticulum</td>
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<tr>
<td>Esophageal varices</td>
<td>Elastic tissue diseases</td>
<td>Solitary colonic ulcer</td>
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<tr>
<td>Hematobilia</td>
<td>Pseudoxanthoma elasticum</td>
<td>Intussusception</td>
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<tr>
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<td>Ehlers-Danlos syndrome</td>
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<td>Vasculitis syndrome</td>
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</table>
Recognition of hemorrhage and assessment of severity

Hemodynamic resuscitation

**History and physical**
Pass nasogastric (NG) tube

Hematemesis, or blood in NG aspirate, or melena only
Ix: peptic ulcer disease, analgesics, alcohol, signs of cirrhosis

YES

NO

GI endoscopy

Hematochezia
(Hx: hemorrhoids, polyps, diverticulitis, rectal mass)

Melena only, no lesion or bleeding seen

ANOSCOPY
Proctosigmoidoscopy

Bleeding minimal or stopped

Elective colonoscopy

Negative

Consider:
Small bowel series
Meckel's scan
Arteriography

Continued or brisk bleeding

Upper GI endoscopy
(if not performed earlier)

Negative

Red cell radionuclide scan
Arteriography
Urgent bowel prep and colonoscopy
Gastric ulcer bleeding
Bleeding from colonic diverticulum
Mesenteric angio.: jejunal dysplasia, bleeding
Diarrhea

- Increase in stool liquidity and weight (more than 200gm/day)
- Associated with increased stool frequency, urgency perianal discomfort and/or fecal incontinence
# Diarrhea Classification

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MECHANISM</th>
<th>EXAMPLES</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Secretory</td>
<td>Increased secretion and/or decreased absorption of Na⁺ and Cl⁻</td>
<td>Cholera, VIP-secreting tumor, bile salt enteropathy, fatty acid–induced diarrhea, lactose intolerance (lactase deficiency), generalized malabsorption (particularly carbohydrates), Mg²⁺-containing laxatives</td>
<td>Large volume, watery diarrhea, no blood or pus, no solute gap, little or no response to fasting, watery stool, no blood or pus, improves with fasting, stool may contain fat globules or meat fibers and may have an increased solute gap</td>
</tr>
<tr>
<td>2. Osmotic</td>
<td>Nonabsorbable molecules in gut lumen</td>
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<tr>
<td>3. Inflammatory</td>
<td>Destruction of mucosa, impaired absorption, outpouring of blood, mucus</td>
<td>Ulcerative colitis, shigellosis, amebiasis</td>
<td>Small frequent stools with blood and pus, fever, variable</td>
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<tr>
<td>4. Decreased absorptive surface</td>
<td>Impaired reabsorption of electrolytes</td>
<td>Bowel resection, enteric fistula</td>
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<td>5. Motility disorder</td>
<td>Increased motility with decreased time for absorption of electrolytes and/or nutrients, decreased motility with bacterial overgrowth</td>
<td>Hyperthyroidism, irritable bowel syndrome, scleroderma, diabetic diarrhea</td>
<td>Variable</td>
</tr>
</tbody>
</table>

* Diarrhea is, in many instances, due to a combination of mechanisms. The diarrhea of generalized malabsorption, for example, is attributable to osmotic and secretory diarrhea as well as to decreased absorptive surface.
Management of diarrhea

• Acute:
  - Fluid replacement (electrolytes p os, or iv.)
  - If no fever, symptomatic th.- loperamid
  - In most milder cases there is no need for AB treatment.
  - Fever, blood or pus in the stool-culture and antibiotic treatment

• Chronic: stool culture for bacter, parasites, tests for malabsorption/maldigestion, inflammatory bowel diseases, endocrine disease, and tumor.
D.2. Constipation

- Less than two bowel movements a week, less than 50gr/ day
- History: for years/or recent onset, abdominal or defecations pain, stool color, mucus or blood in/on the stool, after constipation spontaneous diarrhea( colonic obstruction), weight loss etc…
Causes of constipation

Recent onset:
- Colon obstruction - tumour, inflammation, strictures, impactation
- Sphincter ani spasm - inflammation, fissures, fistulas

Chronic:
- Alimentari causes - decreased dietary fibers and fluids
- Irritable bowel sy.
- Drugs, toxins: Ca channel inhibitors, opiates, iron drugs, diuretics, lead poisoning...
- Endocrine/metabolic: hypothyroidism, hypoK, hyperCa, diab. mell. ...
- Neuromuscular: megacolon, Parkinson disease. Spinal medullar compression...
- Psychiatric: depression, drug, immobility
Management of constipation

• Physical examination::general and focus on the abdomen (tumor), RD.
• Labor.:blood smear and test for occult blood in the stool. TSH.
D. Jaundice

• Hyperbilirubinemia causes skin and sclera yellow discoloration.

• Other pigments (caroten, urochrom) can cause mainly skin discoloration - overdigestion of carots, pumpkin, orange
Classification of jaundice

• Prehepatic (haemolitic)
  increased production (*indirect bi*)

• Hepatocellular
  decrease uptake, or conjugation
    (*indirect bi*)
  impaired excretion of conjugated bi
    (*direct bi*)

• Posthepatic (obstructive) (*direct bi*)
History in jaundice

- Dark urine, acholic stool - posthepatic-or hepatocellular
- Age: young - Gilbert, viral hepatitis, drug
  old - malignoma
- Familiar: Gilbert, haemolizis
- Fever: cholangitis, hepatitis
- Weight loss: pancreas tu
- Pain: choledochus stone
- Itching: primary biliary cirrhosis, cholestasis
- Alcoholabuse: alkoholiv liver dis.
- Contact with icteric patient, travell to abroad: hepatitis A,E
- Transzfusion: hepatitis B,C,D
- Crohn, colitis ulcerosa: primer sclerotizáló cholangitis
Management of jaundice

• **Rule out posthepatic/obstructive causes!**
• Urine bilirubin negative—hemolysis
• Urine bilirubin positive (brown discoloration) + acholic stool—choledochus obstruction of the choledochus or Vater papillae
Choledochus stone and sludge by US
Tc-HIDA