Clinical Aspects of Acute Abdomen

Egil Johnson
Dep. of Gastroenterological and Pediatric Surgery
Oslo University Hospital, Ullevål
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Acute Abdomen
• Disease manifested by abdominal pain
• Localisation - intraperitoneal
  - retroperitoneal
  - extraperitoneal
• Referred pain
  - Intra- and extraabdominal disease
    - Pain within and outside of abdomen

Acute appendicitis
• Symptoms
  Periumbilical pain ⇒ right fossa iliaca
• Clinical findings
  Patient supine, flected hips
  Direct/indirect tenderness/rebound tenderness
  McBurney’s point
  Defense
  Rectal exploration-palpable mass in fossa Douglas
  Local peritonitis
  Perforation occurs after 1-2 days of symptoms

• Lab
  Leukocyte count, CRP
• Treatment
  ⇒ appendectomy (laparoscopic/open)

• Differential diagnosis
  Mesenterial lymphadenitis
  - catarrhous symptoms
  Salpingitis
  - longer symptom duration
  - more symmetric lower abdominal pain
  - vaginal fluor (discharge)
  - pain upon rectovaginal palpation (PID)

Differential diagnosis
Radiology
• Terminal ileitis
  Crohn’s disease
  Yersinia enterocolitis
  Ultrasonography
  • A-fluid filled appendix
  • appendicolith

Acute appendicitis

Acute appendicitis
Perforated gastric ulcer

Ulcus duodeni perforans

Perforated peptic ulcer

• Typical patients
  Bothered with ulcer and being dyspeptic
  Treated with steroids NSAID
• Symptoms
  Acute upper/diffuse abdominal pain
• Clinical findings
  Pale, battered, sweating, tachycardia, tachypnea
  Hypotension, cold extremities
  Rigid abdomen/typanic at percussion/no bowel movements at auscultation

• Treatment
  Intravenous liquid resuscitation
  Nasogastirc tube
  Immediate operation ⇒ closure and tegmentation
• Radiology
  Plain thoracoabdominal X-ray
  (pneumoperitoneum)

Cholecystitis/Cholelithiasis

Cholecystitis/Cholelithiasis

• Typical patients
  Fat, female, fertile, forties
• Symptoms
  Intermittent pain in right hypochondria⇒ const. pain
  Referred pain (phrenic nerve/right shoulder)
  Jaundice/dark urine/pale stool
  Related to ingestion of food
  Fever/Nausea/Vomiting
Cholecystitis/Cholelithiasis

- Clinical findings
  - Subcostal tenderness/palpable mass
  - Positive Murphy’s sign
- Examinations
  - Lab. infection/liver-bile-pancreas
  - Ultrasound
  - Jaundice ⇒ MRCP/ERCP

Cholecystitis/Cholelithiasis

- Treatment
- Colelithiasis
- Antibiotics ⇒ cholecystectomy in early phase (< 4 d.)
- At perforation ⇒ cholecystectomy
- High comorbidity ⇒ PTC with gall bladder drainage

Acute pancreatitis

- Typical patients
  - Alcoholics and those with cholelithiasis
- Symptoms
  - Epigastric pain radiating posteriorly
  - Often sitting bent forwards
  - Usually vomiting/Subfebrilia/Tachycardia
  - Serious cases ⇒ cyanosis, subcutaneous bleeding and development of shock
- Clinical findings
  - Defense/abdominal distension/rebound tenderness

Radiology

- Cholecystitis
  - Distended
  - Pericholecystic fluid
  - Stone
  - Wall thickening
  - Inflammatory changes

At suspicion of Choledocholithiasis (MRCP)
Acute pancreatitis

- Examinations
  Amylase/Lipase/Calcium
  CT abdomen with peroral and iv contrast)
- Treatment
  1. Symptomatic
  2. Percutaneous/endoscopic drainage of pseudocysts and abscess
  3. Operation in seldom and extreme cases with necrotic pancreatitis (necrosectomy/abscess drainage/colonic resection from fistulisation)

Diverticulitis (sigmoiditis) coli

- Increase with age, seldomly below 40 years
- Symptoms
  Gradually increasing pain, exacerbation at perforation
  Often localised direct and indirect tenderness at palpation, diffuse tenderness
  Subfebrilia/Fever
- Examinations
  Leukocytes, CRP, CT at suspected abscess/perforation

Diverticulitis

- Treatment
  Few symptoms/Low CRP – expectoration/laxatives
  Usually antibiotics ± CT guided abscess drainage
  Operation at perforation/larger abscess - resection

  • Meckels diverticulitis
  Children, usually <2 år
  Melena
Intestinal obstruction (ileus)

- Mechanical ileus
- Typical patients: Abdominal operations, hernia, Parkinson’s disease, use of psychopharmaca
- Symptoms: Nausea/Vomiting, Intermittent pain
- Lack of passage of stool and flatus

Mechanical ileus

- Clinical findings:
  - Abdominal distension: Bowel peristalsis towards abdominal wall can be seen in thin patients
  - Initially frequent bowel sounds ⇒ that later become reduced
  - Presence of hernia
- Examinations:
  - Abdominal X-ray: fluid filled dilated bowel
  - Lack of air in rectum
  - Abdominal CT: level of obstruction

Mechanical ileus

- Contrast X-ray of gut:
  - Resolve a condition with subileus/ileus
  - Passage of contrast into colon
- Double contrast barium enema of colon
  - Localize point of obstruction
- Treatment:
  - Nasoenteral tube
  - Intravenous fluid/electrolyte (sodium/potassium) substitution

Mechanical ileus

- Etiology:
  - Tumor
  - Volvulus
  - Alimentary ileus
  - Cholecystolithiasis from bilioduodenal/-jejunal fistula
  - Perforation of corpus alien
  - Invagination, usually in children <2 år

Mechanical ileus

- Treatment:
  - Proctoscopy/rectal tube for colonic decompression
  - Operation
  - How to differentiate high and low ileus?
    - Duration of symptoms
    - Degree of vomiting and liquid-electrolyte aberrations
    - Color of vomit
- Etiology:
  - Adhesions after previous abdominal surgery
Mechanical ileus with strangulation

Strangulation (5%) means occlusion of blood supply to the gut from twisting of the mesentery

- Special symptoms and findings
  - Localised and ultimately constant pain
  - Tachycardia
  - Fever
  - Leukocytosis
  - Palpable pseudotumor

Circulatory changes of mesenterial vessels

- Arterial ischemia >80%
- Venous ischemia <20%
- Embolus more frequent than trombosis
- Etiology
  - Cardiac arrythmia
  - Arterio-/Atherosclerosis obliterans
- Symptoms/Clinical findings
  - Pain/Vomit/Diarrhea/Melena
  - Tenderness (defense)

Sigmoid volvulus

Sigmoid volvulus after decompression

Mechanical ileus

Radiology

- Small bowel obstruction
- Obstructed sigmoidal cancer

Circulatory changes of mesenterial vessels

- Peritonitis
- Shock
- Leukocytosis
- Examinations
  - Abdominal X-ray-multiple fluid accumulations
  - Arteriography
- Treatment
  - Symptomatic
  - Laparoscopy/-tomy/resection/embolectomy
Ruptured abdominal aortic aneurysm

- Typical patients
  - Elderly, obese with atherosclerosis
- High mortality
- Symptoms
  - Sudden central abdominal pain radiating to the spine
  - Palpable often pulsating mass
  - Patient is disturbed and restless
  - Hypotension/tachycardia/sweating/anemic/weak femoral pulse in the groin/in shock

Ruptured abdominal aortic aneurysm

- Treatment
  - Unstable patient: Immediate intravenous resuscitation and operation (graft) or stenting
  - Stable patient: CT abdomen before intervention

Other potentially ruptured aneurysms
- Splenic artery
- Renal artery

Abdominal aortic aneurysm

Radiology

- Ruptured AAA
- Infrarenal dissecting AAA

Acute scrotum – Testicular torsion

- Typical patients
  - Young men
- Occurs most often spontaneously, also at sleep
- Physical and sexual activity may predispose
- Symptoms
  - Sudden pain
  - Scrotal swelling
  - Nausea and vomiting
- Usually not, but may have fever

Testicular torsion

- Clinical findings
  - Excessive tenderness by testicular palpation
  - Retracted and horizontally oriented testicle
- Examinations
  - Clinical findings
    - Doplher examination of blood perfusion in vas deferens
- Treatment
  - Operation with bilateral fixation of the testicles
Acute scrotum - Epididymitis

• Differential diagnosis
  Acute epididymitis
  More gradually increasing pain
  Usually fever
  Increase of inflammatory parameters (CRP/hvite)
  The patient often have pyuria and/or prostatitis

• Clinical findings
  Early in the disease, palpable enlarged and tender epididymis, and normal testicle
  When in diagnostic doubt => operation

Acute abdomen

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Conclusion

Radiology is crucial as a diagnostic tool as well as a therapeutic tool in treatment of patients with acute abdomen

Radiology is especially important in dealing with:
- Gallstone disease
- Pancreatitis
- Visceral perforation
- (Bleeding)