An Approach to Abdominal Pain
Block 10

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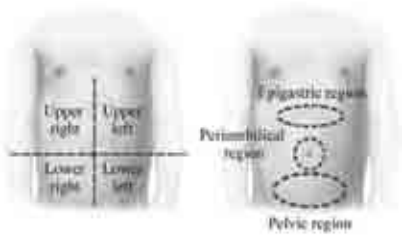
Abdominal pain

- Most common gastrointestinal complaint
- Diagnosis and management often challenging
- Associated of a wide variety of disorders
  - Acute and life-threatening…obstructions, infections
  - Chronic functional disorders…difficult to tolerate, not typically associated dire consequences

Types of abdominal pain

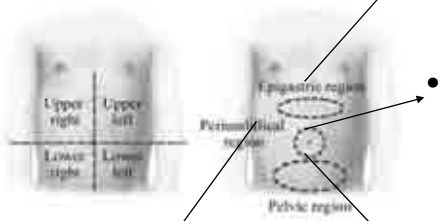


- Visceral pain
  - Dull aching, midline, poorly localized
- Somatic
  - Superficial structures peritoneum, sharp, well localized
- Referred pain
  - From parietal pleura to abdominal wall

Visceral pain

- Sensation produced in response to
  - Stretching or distention wall of hollow organ or capsule solid organ
  - Inflammation
  - Ischemia
- Dull, crampy, poorly localized pain in midline on level of dermatomes that innervate the organ
- Accompanied nausea, emesis, diaphoresis
- Visceral pain becomes somatic if the affected viscus involves a somatic organ eg peritoneum or abdominal wall

Location visceral pain



- Epigastric T5-T9
  - Foregut: Liver, pancreas, biliary tree, stomach, proximal intestine (duod)
- Periumbilical T8-L1
  - Midgut: Distal small intestine, asc colon, prox 2/3 transverse colon,appendix
- Suprapubic T11-L1
  - Hindgut: Dist 1/3 transverse colon, descending and rectosigmoid colon

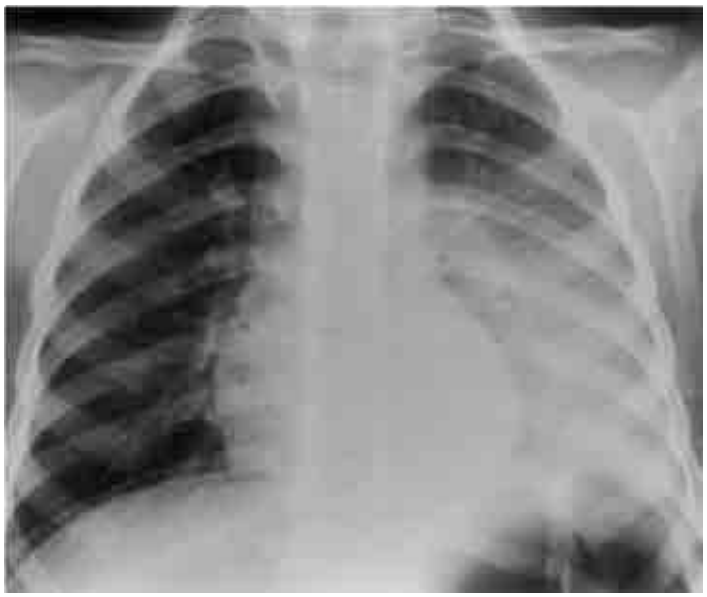
Lateral T10-L1

Nephrogenic cord: Kidneys, ureters, ovaries, falopian tubes

Somatic pain

- Peritoneal inflammation
- Localized area involved viscera
- Steady, sharp pain
- Associated voluntary guarding and involuntary rigidity overlying muscles
- Rebound pain
- Aggravated motion
  - Restlessness versus immobility

    Colic (visceral) vs peritonitis (somatic)



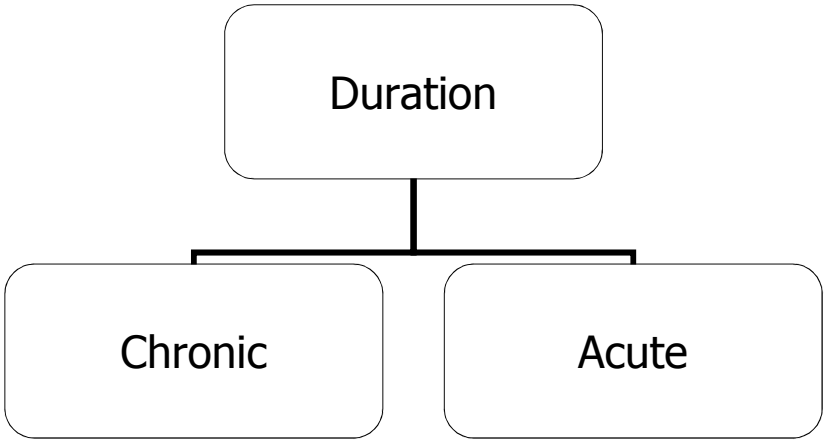
Referred pain

- Well localized pain area remote pathology
- Skin hyperalgesia over cutaneous dermatome supplied by same neural segment injured organ
- Pancreas: T5-T9 interscapular region
- Liver / biliary tree : right subscapular area

Evaluation abdominal pain

1. “How ill?”
2. “How long?”

Approach to abdominal pain



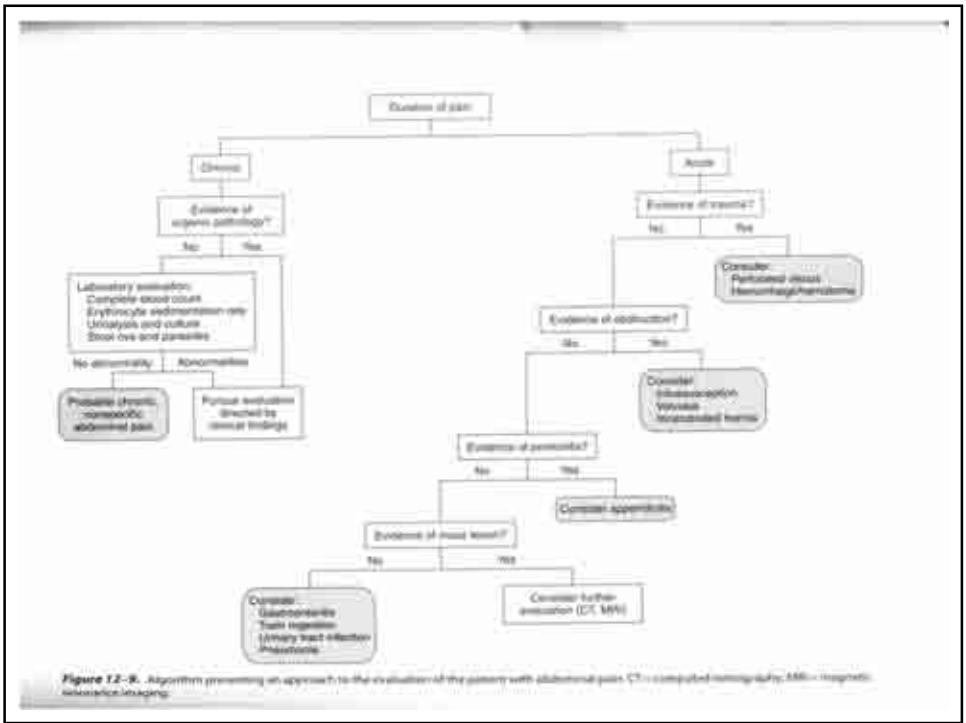


Figure 12–9. Algorithm presenting an approach to the evaluation of the patient with abdominal pain. CT = computed tomography; MRI = magnetic resonance imaging.

Clinical approach: Acute History

- Pain:
  - time of onset, duration, relation initiating event
  - Character, change over time, radiate
  - Relation pain to other symptoms
    - Bilious vomiting
    - Diarrhoea, constipation, fever
- Medical history, previous surgery

Physical examination

- Difficult : too much distress to cooperate
- Motionless / writhes about?
- Distention, gross asymmetry, associated skin lesions
- Bowel sounds
- Palpation, guarding, rebound tenderness

Diagnostic studies

- Abdominal radiographs, sonar, CT
- Laboratory
  - FBC, differential
  - Suspected etiology directed

Table 12–7. Differential Diagnosis: Acute Abdominal Pain

Infectious causes
- Gastrointestinal
  - Appendicitis[1]
  - Mesenteric adenitis
  - Infectious gastroenteritis[1]
  - Food poisoning[1]
  - Peritonitis
  - Hepatitis
  - Pancreatitis
- Nongastrointestinal
  - Pharyngitis (especially streptococcal)
  - Pneumonia (especially right lower lobe)
  - Pyelonephritis/glomerulonephritis
  - Pelvic inflammatory disease
  - Abdominal abscess
  - Pericarditis
  - Serositis
  - Epididymitis
- Generalized
  - Herpes zoster
  - Mononucleosis
  - Acute rheumatic fever

Intestinal obstruction
- Intussusception[1]
- Volvulus[1]
- Adhesions
- Hernia with incarceration

Gallbladder
- Cholecystitis
- Cholelithiasis
- Hydrops

Abdominal trauma
- Abdominal wall muscle bruise/strain
- Splenic rupture/hematoma
- Liver laceration or hematoma
- Pancreatic pseudocyst

Hematologic disease
- Leukemia/lymphoma
- Hemolytic crisis
- Spinal cord tumors

Endocrine disease
- Hypoglycemia
- Diabetes mellitus (especially with diabetic ketoacidosis)

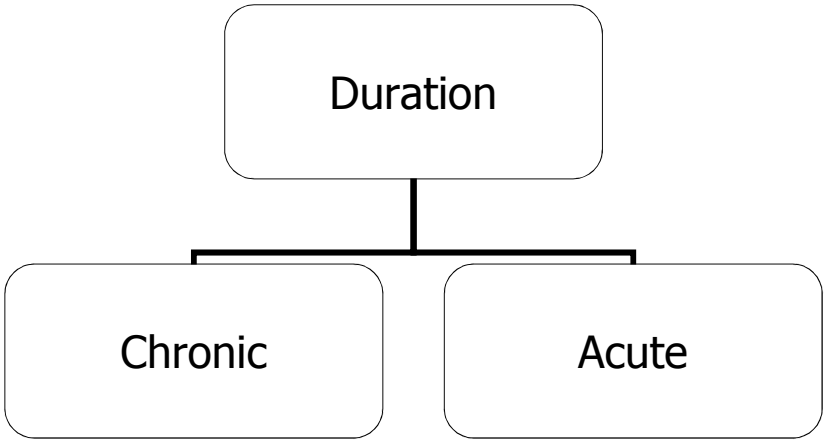
Vasculitic disease
- Henoch-Schönlein purpura
- Periarteritis nodosa
- Mucocutaneous lymph node syndrome (Kawasaki disease)

Renal disease
- Nephrotic syndrome
- Renal colic

Miscellaneous
- Ascites
- Colic[1]
- Toxin ingestion
- Testicular torsion
- Ovarian torsion
- Mesenteric artery occlusion
- Hypokalemia (causing paralytic ileus)
- Black widow spider bite

[1] Frequently encountered causes of acute abdominal pain.

Approach to abdominal pain



Approach chronic abdominal pain: Detailed history

- Age onset
- Location and nature pain
- Relation to feeding
- Severity, time, frequency occurrence and duration
- Aggravating or relieving factors
- Associated symptoms
  - LOW, fever, vomiting, bloating, diarrhea, hematoschezia, urinary symptoms
- Intercurrent illness or recent trauma
- Prior treatment

Chronic or recurrent abdominal pain

- Very common 10 – 15% of children
- Duration longer than 3 months, affecting normal activity
- Range of anatomic, infectious, inflammatory, biochemical disorders
- Presents in 3 main patterns
  - Isolated paroxysmal abdominal pain
  - Abdominal pain with dyspepsia
  - Abdo pain with altered bowel pattern

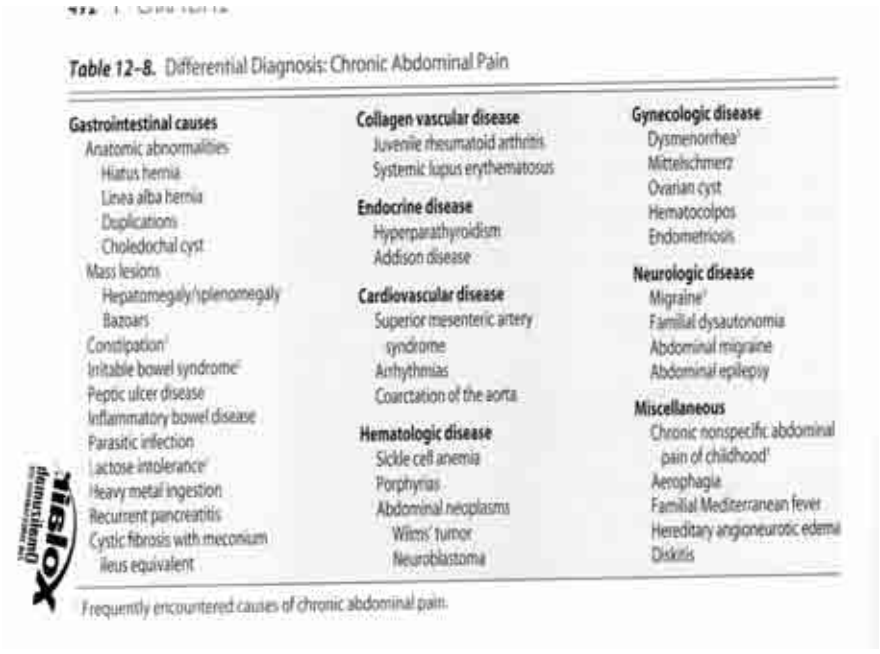


Table 12-8. Differential Diagnosis: Chronic Abdominal Pain

Gastrointestinal causes
- Anatomic abnormalities
  - Hiatus hernia
  - Linea alba hernia
  - Duplications
  - Choledochal cyst
- Mass lesions
  - Hepatomegaly/splenomegaly
  - Bazoars
- Constipation[1]
- Irritable bowel syndrome[2]
- Peptic ulcer disease
- Inflammatory bowel disease
- Parasitic infection
- Lactose intolerance[3]
- Heavy metal ingestion
- Recurrent pancreatitis
- Cystic fibrosis with meconium ileus equivalent

Collagen vascular disease
- Juvenile rheumatoid arthritis
- Systemic lupus erythematosus

Endocrine disease
- Hyperparathyroidism
- Addison disease

Cardiovascular disease
- Superior mesenteric artery syndrome
- Arrhythmias
- Coarctation of the aorta

Hematologic disease
- Sickle cell anemia
- Porphyrias
- Abdominal neoplasms
  - Wilms' tumor
  - Neuroblastoma

Gynecologic disease
- Dysmenorrhea[1]
- Mittelschmerz
- Ovarian cyst
- Hematocolpos
- Endometriosis

Neurologic disease
- Migraine[1]
- Familial dysautonomia
- Abdominal migraine
- Abdominal epilepsy

Miscellaneous
- Chronic nonspecific abdominal pain of childhood[1]
- Aerophagia
- Familial Mediterranean fever
- Hereditary angioneurotic edema
- Diskitis

Frequently encountered causes of chronic abdominal pain.

Functional abdominal pain

- Typically 5 – 14 years old
- Unrelated to meals or activity
- Clustering of pain episodes: several times per day to once a week, recurring at days to weeks intervals
- Physical or psychological stressful stimuli
- Personality type obsessive, compulsive, achiever
- Family history of functional disorders : reinforcement of pain behaviour

Functional abdominal pain

- Vague, constant, peri-umbilical or epigastric pain more often than colic : visceral type of pain
- Duration <3 hours in 90%, variable intensity
- Associated symptoms: headache, pallor, dizziness, low-grade fever, fatiguability
- May delay sleep, but does not wake the child
- Well-grown and healthy
- Normal FBC, ESR, Urinalysis, Stool microscopy for blood, ova, parasites

Management of functional pain

- Positive clinical diagnosis: careful history
- Do not over-investigate: more anxiety
- FBC, ESR, Urinalysis and culture, Stool for occult blood, ova and parasites
- Positive reassurance that no organic pathology is present
- Little place for drugs
- Dietary modification
- Reassuring follow-up

Pointers to organic pain in children

- Age of onset <5 or >14 years
- Localized pain away from umbilicus
- Nocturnal pain waking the patient
- Aggravated or relieved by meals (dyspepsia)
- Loss of appetite and weight
- Alteration in bowel habit
- Associated findings: fever, rash, joint pain
- Abdominal distension, mass, visceromegaly
- Occult blood in stools, anaemia, high ESR

Abdominal pain

- Common complaint
- Not to be underestimated
- Life threatening to functional disorders
- Art distinguish between two groups
- Appropriate management