

**Presenting problems in
gastrointestinal diseases
part 2
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DIARRHOEA

The bowel frequency of normal population is ranging between 3 bowel movement per day to one bowel movement every third day.

Diarrhoea is defined as the passage of more than 200 grams of stool daily.

Acute diarrhoea: very common, usually results from faeco-oral transmission of bacteria, their toxins, viruses or parasites (infective diarrhoea). Usually short lived.

If the duration is more than 10 days probably not infective.

Drugs: Antibiotics, cytotoxic drugs, proton pump inhibitors and NSAIDs can cause acute diarrhoea.

Chronic or relapsing diarrhoea: the most common cause is A- Irritable bowel syndrome (IBS) that causes increased frequency of defecation, rarely occurs at night and most severe before and after breakfast though at other times the patient is constipated. The stool often contains mucus but no blood and the 24 hr. stool volume < 200 gm.

B- Colonic: blood and mucus in stool+ cramping lower abdominal pain.

Causes: 1- Inflammatory bowel diseases: Ulcerative colitis and Crohn's dis.

2- Neoplasia and ischaemia.

3- Negative investigations: IBS

Diagnosis is achieved by colonoscopy, biopsy and tissue diagnosis.

Malabsorption syndrome: causes steatorrhoea, undigested food in stool, weight loss and nutritional deficiencies. Causes include:

A- Pancreatic dis.: chronic pancreatitis, pancreatic cancer and cystic fibrosis.

B- Enteropathies: coeliac dis., tropical sprue, lymphoma and lymphangiectasia.

Diagnosis: ultrasound and magnetic resonance colangiopancreatography (MRCP), small bowel biopsy by endoscopy and barium follow through.

Small bowel dis.: causes large volume watery stool, abdominal bloating and cramping mid-abdominal pain.

Causes: Vipoma and drug induced(NSAIDs and Aminosalicylates).

Diagnosis: stool volume, gut hormone profile and barium follow through.

WEIGHT LOSS

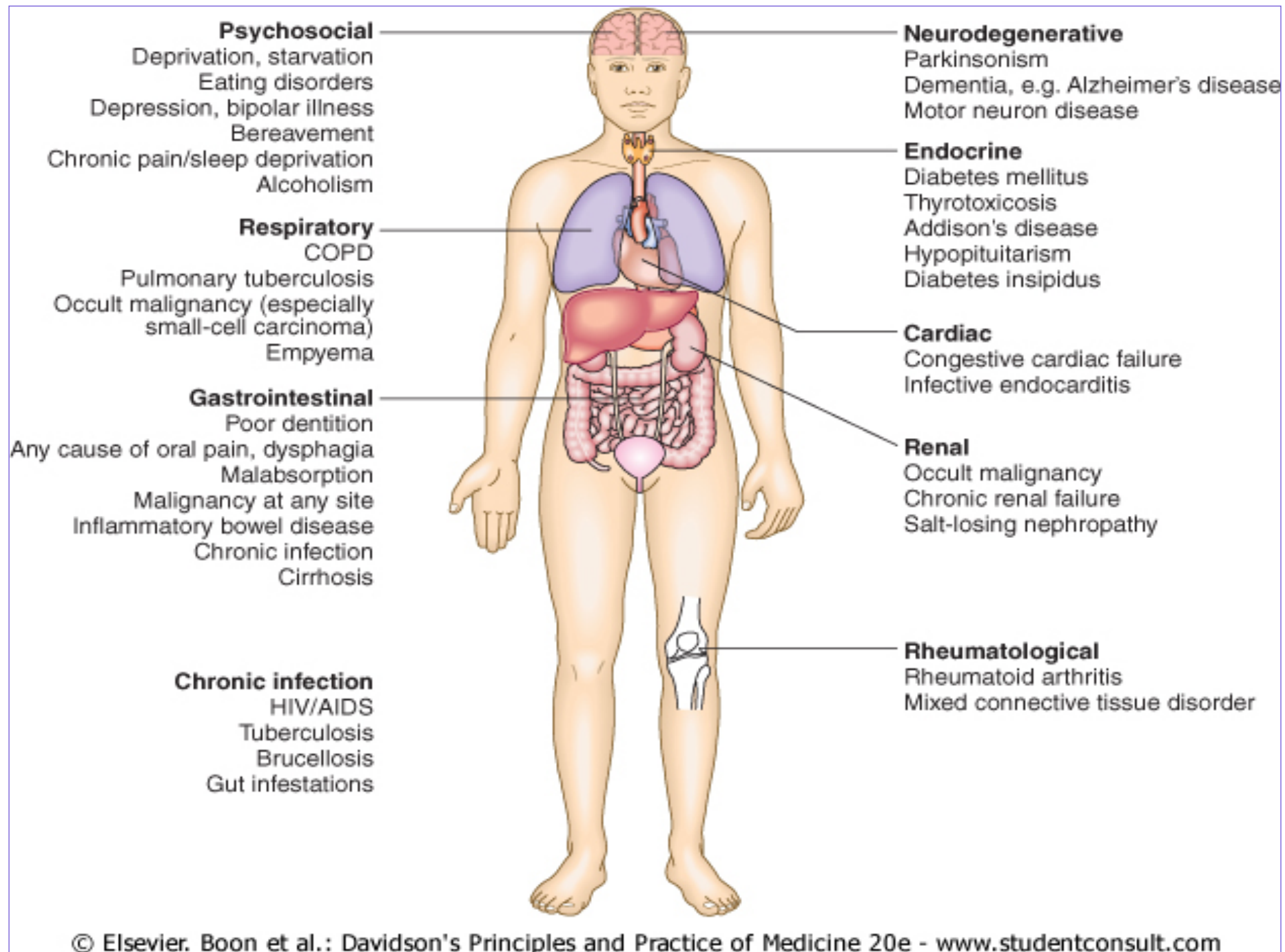
- 1- Physiological: dieting, exercise, starvation and poor intake in elderly. Loss of >3 KG. over 6 months is significant.
- 2- Pathological weight loss:
 - A- GIT dis.: Dysphagia, malabsorption, malignancy, inflammatory bowel dis., chronic infections and liver cirrhosis.
 - B- Renal: Chronic renal failure, salt losing nephropathy and occult malignancies.
 - C- Chronic infections: TB, brucellosis, gut infestations and AIDS.
 - D- Endocrine: DM, thyrotoxicosis, Addison's dis., hypopituitarism and diabetes insipidus.
 - E- Respiratory: COPD, Pulmonary TB, empyema and malignancies specially small cell carcinoma.
 - F- Cardiac: congestive heart failure and infective endocarditis.
 - G- Rheumatologic: rheumatoid arthritis and mixed connective tissue dis.
 - H- Neurodegenerative: Parkinsonism, dementia and motor neurone dis.
 - I- Psychiatric: eating disorders (Anorexia nervosa), depression and alcoholism.

Investigations: Urinalysis for sugar, protein and blood.

Blood tests: liver function tests, renal function tests, random blood glucose, thyroid function tests and other hormonal assays, ESR(increases in TB, malignancies and connective tissue dis.)

Imaging studies: CXR,US, CT and MRI.

Endoscopy and biopsy(tissue diagnosis).



CONSTIPATION

Infrequent passage of hard stool.

Associated symptoms: straining, sensation of incomplete evacuation, perianal or abdominal discomfort.

GIT disorders:

A- dietary: lack of fibers or fluid intake.

B- Motility: 1- Slow transit constipation.

2- IBS and chronic intestinal pseudo-obstruction

3- Drugs; Anticholinergics.

C- Structural: Colonic carcinoma, diverticular dis. and

Hirschsprung's dis.

D- Defecation: Obstructed defecation and anorectal dis.

(Crohn's fissure and haemorrhoids).

Non-GIT disorders:

- A- Drugs: opiates, anticholinergics, calcium antagonists, iron supplements and aluminium containing antacids.
- B- Neurological: Multiple sclerosis, spinal cord lesions, cerebrovascular accidents and parkinsonism.
- C- Metabolic/Endocrine: DM, Hypercalcaemia, hypothyroidism and pregnancy.
- D- Others: Depression, serious illnesses and immobility specially in elderly.

Clinical assessment and management:

History: Onset, duration and characteristics.

Neonatal onset: Hirschsprung's dis.

Recent change in bowel activity in middle aged or elderly: organic cause like malignancy specially in the presence of symptoms like rectal bleeding, weight loss and pain.

Emotional stress is also important.

Careful examination including general medical disorders, signs of intestinal obstruction, neurological dis. Like spinal cord disorders, perianal and rectal examination are essential.

It is impossible to investigate every person with this common problem; middle aged or elderly patient with recent history of constipation with alarm symptoms like rectal bleeding, pain and weight loss must be investigated by colonoscopy or barium enema.

For those with simple constipation; the approach will be:

- 1- Initial visit: digital rectal examination, proctoscopy, sigmoidoscopy and blood tests(sugar, serum calcium, thyroid function test and full blood count. If these normal; one month trial with dietary fibers and or laxatives are indicated.
- 2- Next visit: If Symptoms persists; examination of colon by barium enema or colonoscopy is indicated.
- 3- Last visit: If no cause found and symptoms persists; search for dysmotility:
Slow transit constipation(infrequent desire to defecate)
Obstructed defecation(excessive straining)
So further investigations including intestinal markers study, anorectal manometry, electrophysiological studies and defecating proctography are used to define the problem.

ABDOMINAL PAIN

Four types;

- 1- Visceral: Gut organs are sensitive to distension, contraction and stretching but insensitive to burning or cutting. This type of pain is felt in midline.
- 2- Parietal: inflammation, infection and neoplasia. It is sharp and well localized lateralized pain.
- 3- Referred pain: e.g. gall bladder pain will refer to back or shoulder.
- 4- Psychogenic: provided that organic causes have been excluded by investigations e.g. somatization disorders.

Acute abdominal pain:

This constitute 50% of emergency admission to surgical units.

- 1- Inflammation:- the pain develops over hours; initially diffuse until parietal peritoneum involved then become localised. It increases by movement and associated with abdominal rigidity and guarding. Ex. Peritonitis, appendicitis, cholecystitis, pancreatitis, diverticulitis and pelvic inflammatory diseases.
- 2- Perforation: Abrupt and severe pain that ends with generalised peritonitis. Ex. Perforation of peptic ulcer, diverticulae, ovarian cyst and aortic aneurysm.
- 3- Obstruction: colicky pain with spasm that make the patient to writhe around and double up. Ex. Intestinal obstruction, biliary and ureteric colick.

Investigations:

- 1- Blood tests: full blood count(leukocytosis indicate inflammation), urea and electrolytes(dehydration), serum amylase level(acute pancreatitis).
- 2- CXR in erect position: perforated viscus causes air under diaphragm.
- 3- Abdominal X-ray: fluid level in intestinal obstruction.
- 4- Abdominal US: acute gall bladder disease(cholecystitis and cholangitis), ureteric colick and soft tissue mass, free fluid and any intra-abdominal abscess.
- 5- Contrast studies:- differentiation of intestinal pseudo-obstruction from mechanical large bowel obstruction.
- 6- Computed Tomography(CT):- Pancreatitis, retroperitoneal collection or masses including aneurysm.
- 7- Mesenteric angiography:- Mesenteric ischaemia.
- 8- Diagnostic laparoscopy: If all investigations were normal in a patient with acute abdominal pain and if surgical decision is still un-certain.

All patients should be reassessed every 2-4 hours for any change in his condition that can review the diagnosis.

Management:

Perforation should be closed, inflammation should be treated conservatively or by surgery and obstruction should be relieved. Presence of peritonitis is the most important factor that determine the speed of intervention and the need for surgery.

Acute appendicitis: early surgery is wise because of perforation risk and subsequent recurrent attacks; though non surgical treatment can be successful.

Gall bladder dis.: laparoscopic cholecystectomy.

Acute diverticulitis: conservative unless perforation.

Small bowel obstruction: If obvious cause(external hernia) then early operation. If adhesion from previous surgery then wait for 48 hr. If after 48 hr. the condition worsened or there will be signs of strangulation(constant pain, peritonitis, tachycardia, fever and leukocytosis) then surgery is the only option.

Large bowel obstruction:

A- Mechanical obstruction: surgical resection and primary anastamosis.

B- Pseudo-obstruction: colonoscopic decompression.

Perforated peptic ulcer: surgical closure though non-operative treatment is possible in selected cases.

Chronic/recurrent abdominal pain

Detailed history:

Features of pain and any associated symptoms: sites and radiation, duration, severity, precipitating and relieving factors (food, drug, movement), nature (colicky, constant, sharp, dull, awake the patient from sleep or not), pattern (continuous or intermittent), associated features like vomiting, dyspepsia and altered bowel habits.

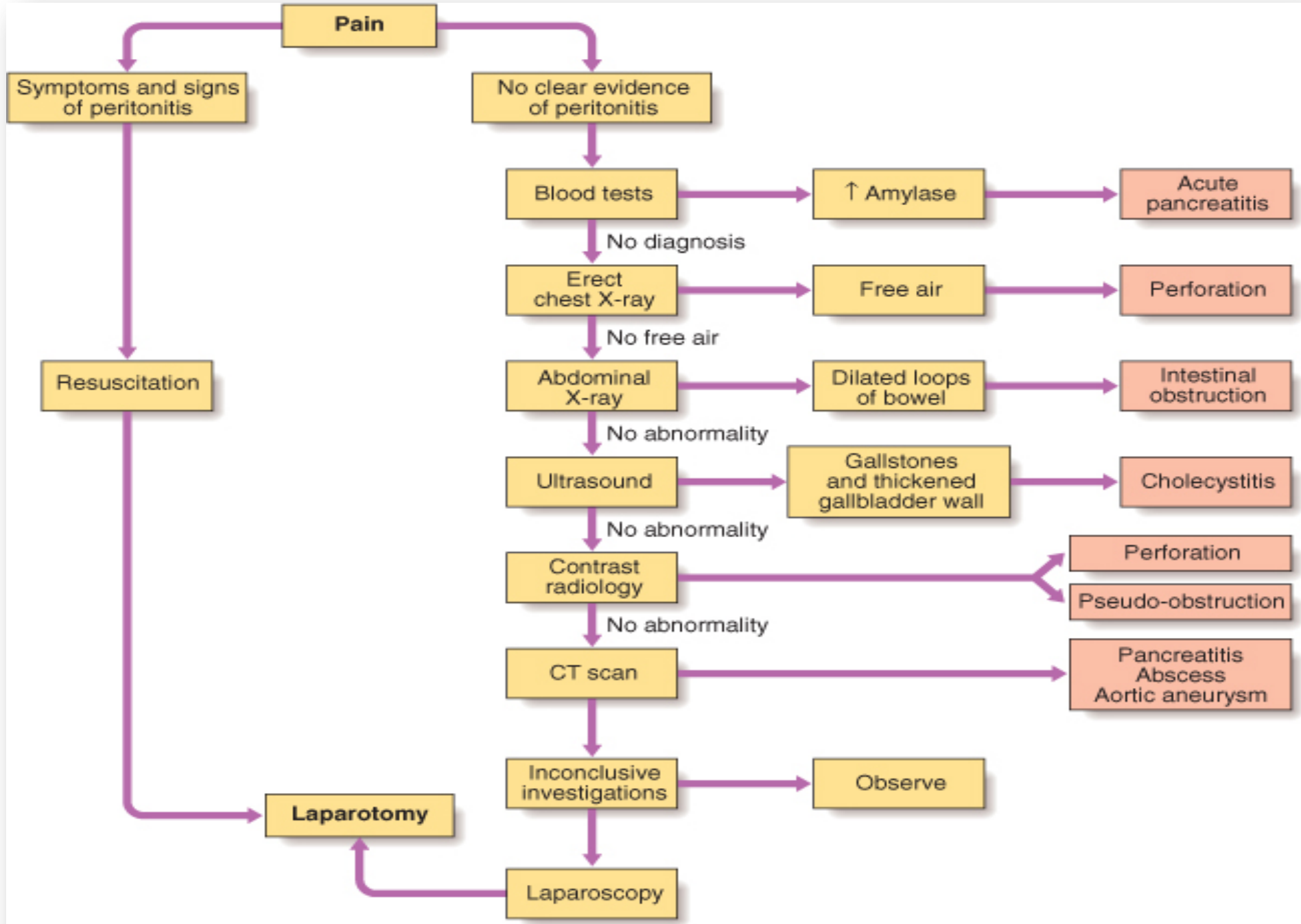
On examination: signs of weight loss, fever, jaundice, anaemia and emotional state.

If thorough rectal and abdominal examination were normal; think of extra-intestinal causes:

- 1- Retroperitoneal : Aortic aneurysm, malignancy, lymphadenopathy and abscess.
- 2- Psychogenic: depression, anxiety, hypochondriasis and somatisation.
- 3- Locomotor: Vertebral compression and abdominal muscle strain.
- 4- Metabolic/Endocrine: DM, acute intermittent porphyria, addison's dis. and hypercalcaemia.
- 5- Drugs/Toxins: Corticosteroids, azathioprine, lead and alcohol.
- 6- Haematological: Sickle cell anaemia and other haemolytic disorders.
- 7- Neurological: spinal cord lesion, tabes dorsalis and radiculopathy.

Some diagnostic clues to a specific disease:

- 1- Epigastric pain, dyspepsia and relationship to food suggest gastroduodenal or biliary disease; endoscopy and US are indicated.
- 2- Altered bowel habits, rectal bleeding or features of obstruction suggest colonic disease; barium enema and sigmoidoscopy or colonoscopy are indicated.
- 3- Pain provoked by food in a patient with widespread atherosclerosis may indicate mesenteric ischaemia; mesenteric angiography may be necessary.
- 4- Young patient with pain relieved by defecation, bloating and alternating bowel habits is likely to have IBS; simple investigations like blood tests and sigmoidoscopy may be sufficient.
- 5- Upper abdominal pain radiates to the back, a history of alcohol misuse, weight loss and diarrhoea suggests chronic pancreatitis or pancreatic cancer: US, CT scan and pancreatic function tests will be necessary.
- 6- Recurrent attacks of pain in the loins or radiating to the flanks with urinary symptoms suggest renal or ureteric stone: US and intravenous urography (IVU) are indicated.
- 7- Psychiatric problem, negative investigation and vague symptoms suggests psychogenic pain.



Edema

Causes of oedema

Increased total extracellular fluid

- Congestive heart failure
- Renal failure
- Other hypervolaemic states: iatrogenic, Conn's syndrome

High local venous pressure

- Deep venous thrombosis or venous insufficiency
- Pregnancy
- Pelvic tumour

Low plasma oncotic pressure/serum albumin

- **Increased loss: nephrotic syndrome**
- **Decreased synthesis: liver failure**
- **Malnutrition/malabsorption**

Increased capillary permeability

- **Leakage of proteins into the interstitium, reducing the osmotic pressure gradient which draws fluid into the lymphatics and blood**
- **Local: infection/inflammation**
- **Systemic: severe sepsis**
- **Drug-related, e.g. calcium channel blockers**

Lymphatic obstruction

- **Infection: filariasis, lymphogranuloma venereum**
- **Malignancy**
- **Radiation injury**
- **Congenital abnormality**

Accumulation of interstitial fluid causes 'pitting' oedema, that leaves an indentation after pressure on the affected area. It is usually influenced by the effect of gravity on venous hydrostatic pressure and so accumulates in the ankles during the day and improves overnight ('dependent' oedema). Non-pitting oedema may reflect protein deposition-for example, in myxoedema associated with hypothyroidism and in chronic lymphoedema

Lower limb oedema is common in morbid obesity.

Clinical assessment

In adults dependent regions or immobile limbs are usually the first site of oedema formation. Ankle swelling is characteristic, but oedema develops over the sacrum in bed-bound patients. With increasing severity it affects the genitalia and abdomen. Ascites is common and often an earlier feature in children or young adults, and in liver disease. Pleural effusions are common and can be a feature of any cause of generalised oedema. Facial oedema on waking is common in adults with low oncotic pressure oedema and in young patients.. If oedema is localised-for example, to one ankle but not the other-then features of venous thrombosis, inflammation and lymphatic disease should be sought.

Investigations

The cause of oedema is usually apparent from the history and examination of the cardiovascular system and abdomen, combined with testing the urine for protein and measuring the serum albumin level. Aspiration of pleural or ascetic fluid with measurement of protein and glucose, and microscopy for cells is sometimes needed.

Management

- 1- Specific causes (e.g. venous thrombosis) should be treated.**
- 2- Diuretics are commonly used for oedema but are also commonly abused.**
- 3- When there is sodium retention and generalised oedema, restriction of sodium (and sometimes fluid) intake, along with diuretic treatment, is indicated.**
- 4- In oedema caused by venous or lymphatic obstruction or by increased capillary permeability, diuretics are hazardous, as they will cause hypovolaemia with secondary hyperaldosteronism and rebound exaggeration of oedema. Local treatments by compression either continuously (e.g. compression stockings) or intermittently (with a mechanical device), can be useful.**
- 5- In nephrotic syndrome, renal failure and severe cardiac failure, very large doses of diuretics, sometimes in combination, may be required to achieve a negative sodium and fluid balance.**