ABDOMINAL PAIN

DR HASSAN NOUR

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Why is it important ?

- Abdominal pain is one of the most common presentation.
- Multiple differential diagnosis (Black hole of medicine)
- A minimum of 7 different systems occur in the abdomen.
- Therefore we need to be organized.
- How to organize:
  - Location
  - Acute vs Chronic
  - Type of pain

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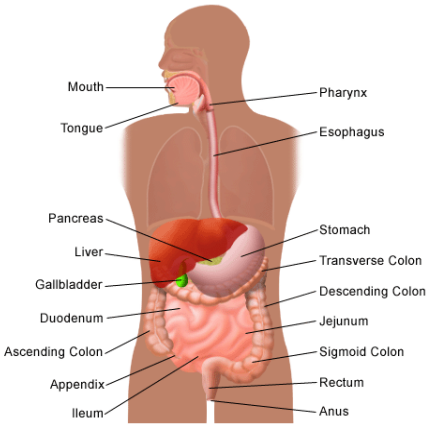
GI Track anatomy



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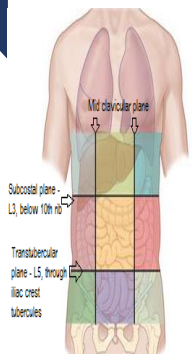
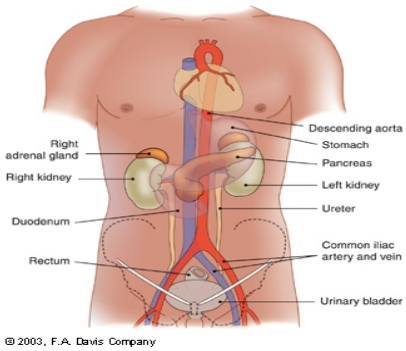
Landmarks



Right Hypochondriac Region • Liver • Gallbladder • Right kidney	**Epigastric Region** • Stomach • Liver • Pancreas • Right and left kidneys	**Left Hypochondriac Region** • Stomach • Liver (tip) • Left kidney • Spleen
Right Lumbar Region • Liver (tip) • Small intestines • Ascending colon • Right kidney	**Umbilical Region** • Stomach • Pancreas • Small intestines • Transverse colon	**Left Lumbar Region** • Small intestines • Descending colon • Left kidney
Right Iliac Region • Small intestines • Appendix • Cecum and ascending colon	**Hypogastric Region** • Small intestines • Sigmoid colon • Bladder	**Left Iliac Region** • Small intestines • Descending colon • Sigmoid colon



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Acute abdominal pain

- Generally present for less than a couple weeks
  - Usually days to hours old
  - Don't forget about the chronic pain that has acutely worsened
- More immediate attention is required
- Surgical v. nonsurgical

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Chronic abdominal pain

- Generally present for months to years
- Generally not immediately life threatening
- Outpatient work-up is prudent

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Types of abdominal pain

- VICSERAL(stretching or contracting of hollow organs)
  - Crampy/Achey/Poorly localized
    - Examples:
      - Gallstones
      - Stones in the urinary tract
      - Diverticulitis
- SOMATIC(persistent)
  - Sharp/Stabbing/Well localized to organs affected
    - Examples:
      - Strained muscles
      - Ischemia / inflammation
      - Burns
- REFERRED(varies)
  - Felt at site other than where the cause is/Dull/sharp
    - Examples:
      - Gall stones
      - Ovarian accident
      - Renal colic

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Approach to the patient

- History is THE MOST IMPORTANT part of the diagnostic process
- SOCRATES(site/onset/character/associations/time or duration/exacerbating and relieving factors/severity)
- Fever
- Constipation / diarrhoea / Last bowel movement
- Nausea / vomiting/faint
- Haematemesis
- Dysuria or frequency
- Urine output
- Previous similar episodes

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Abdominal Pain History

- Relation to food and exertion
- Past medical history/ Past surgical history
- Family history (IBD, cancers, AAA, etc)
- Drug history (OTC / prescribed / herbal)
- Social history (alcohol, smoking, recreational drugs)
- Gynae and sexual history
- Travel history
- Assess for stress, anxiety and depression

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Dyspepsia facts

- 40% of the populations each year (NICE 2014)
- 5% will consult their GP(NICE 2014)
- 1% are referred for endoscopy(NICE 2014)
- Slightly more common in women than men (Pooled prevalence study Ford 2015)

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Dyspepsia

- Heartburn / acid regurgitation- Recurrent
- Epigastric, follows food ingestion
- Ask about diet.
- Try OTC anti acids
- If no help → offer empirical full-dose PPI therapy for 4 weeks.
- If symptoms return after initial care strategies, step down PPI therapy to the lowest dose needed to control symptoms.
- Offer H_2 receptor antagonist (H_2RA) therapy if inadequate response to a PPI eg ranitidine

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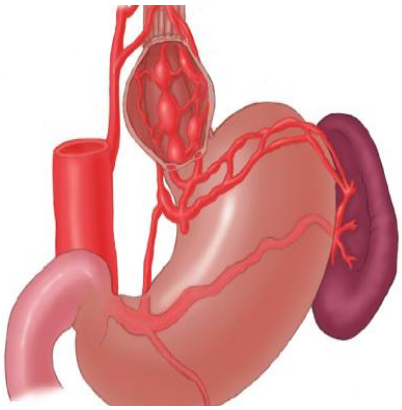

Oesophageal Varices

- Cause
  - Portal Hypertension
  - Chronic alcohol abuse and liver cirrhosis
  - Ingestion of caustic substances

Usually present with epigastric pain, coffee ground and / or melaena.

Refer to AE.

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Helicobacter pylori testing and eradication

- Leave a 2-week washout period after proton pump inhibitor (PPI e.g Omeprazole or esomeprazole use before testing for *Helicobacter pylori* (hereafter referred to as *H pylori*)
- Test for *H pylori* using a carbon-13 urea breath test or a stool antigen test, or laboratory-based serology.
- Perform re-testing for *H pylori* using a carbon-13 urea breath test. (There is currently insufficient evidence to recommend the stool antigen test as a test of eradication).

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H.Pilory First-line treatment

- Offer people who test positive for *H pylori* a 7-day, twice-daily course of treatment with:
- Omeprazole **and** amoxicillin **and** either clarithromycin or metronidazole.
- Choose the treatment regimen with the lowest acquisition cost, and take into account previous exposure to clarithromycin or metronidazole.
- Offer people who are allergic to penicillin a 7-day, twice-daily course of treatment with: a PPI **and** clarithromycin **and** metronidazole with:

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Referral to a specialist service

- Consider referral to a specialist service for people:
- Of any age with gastro-oesophageal symptoms that are non-responsive to treatment or unexplained
- with suspected GORD who are thinking about surgery
- with *H pylori* that has not responded to second-line eradication therapy.

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- Caused by increased gastric acid production or decreased mucosal protection.
- Increased gastric acid production may be caused by alcoholism or gastrin producing tumor (Zollinger-Ellison Syndrome).
- Decreased mucosal protection may be caused by overuse of NSAID's or by infection with *Helicobacter pylori.*
- Pain is visceral and may become somatic if perforation occurs. There may be radiation to the back.
- Haemodynamic instability/guarding on examination/severe pain → referral to AE.
- If there is free air under the diaphragm on Chest xray, that confirms perforated stomach ulcer.

Peptic Ulcer Disease

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RED FLAGS

- Iron deficiency anaemia
- Unintentional weight loss
- Persistent vomiting
- Epigastric mass
- GI bleeding
- Over 55 with unexplained and persistent dyspepsia
- Two week rule- referral for suspected GI cancers

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PPI	Full/standard dose	Low dose (on-demand dose)	Double dose
Esomeprazole	20 mg[1] once a day	Not available	40 mg[3] once a day
Lansoprazole	30 mg once a day	15 mg once a day	30 mg[2] twice a day
Omeprazole	20 mg once a day	10 mg[2] once a day	40 mg once a day
Pantoprazole	40 mg once a day	20 mg once a day	40 mg[2] twice a day
Rabeprazole	20 mg once a day	10 mg once a day	20 mg[2] twice a day

[1] Lower than the licensed starting dose for esomeprazole in GORD, which is 40 mg, but considered to be dose-equivalent to other PPIs. When undertaking meta-analysis of dose-related effects, NICE classed esomeprazole 20 mg as a full-dose equivalent to omeprazole 20 mg.
[2] Off-label dose for GORD.
[3] 40 mg is recommended as a double dose of esomeprazole because the 20-mg dose is considered equivalent to omeprazole 20 mg.

Table 1 PPI doses relating to evidence synthesis and recommendations in the original guideline (CG17; 2004)

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Table 2 PPI doses for severe oesophagitis in this guideline update (2014)

PPI	Full/standard dose	Low dose (on-demand dose)	High/double dose
Esomeprazole	40 mg[1] once a day	20 mg[1] once a day	40 mg[1] twice a day
Lansoprazole	30 mg once a day	15 mg once a day	30 mg[2] twice a day
Omeprazole	40 mg[1] once a day)	20 mg[1] once a day)	40 mg[1] twice a day
Pantoprazole	40 mg once a day	20 mg once a day	40 mg[2] twice a day
Rabeprazole	20 mg once a day	10 mg once a day	20 mg[2] twice a day

[1] Change from the 2004 dose, specifically for severe oesophagitis, agreed by the GDG during the update of CG17.
[2] Off-label dose for GORD.

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Diarrhea

- Establish what the patient means by diarrhea
- Onset
- What's their normal bowel habit
- Blood- when, how much, nocturnal symptom may be indicative of IBD
- Mucus?
- Associated vomiting
- Recent travel
- Change in diet/eating out
- Abdominal bloating
- Diarrhea worse after food?
- Any constipation with overflow

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Investigation

- Blood tests- FBC, U&Es, CRP, ESR, LFTs, TSH, HbA1c, Coeliac screen, Lactose intolerance, Gluten intolerance, HIV testing(consent)
- Stool Culture
- Faecal calprotein to differentiate between IBD and IBS, no NSAIDS for 4 weeks before.
- Faecal Elastase if pancreatic insufficiency

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Management

- Depends on diagnosis
- ? Public Health England notification
- If symptoms persist for more than 4 weeks, IBD suspected, Colorectal malignancy suspected, Positive HIV testing, If basic tests are negative but symptoms persist REFER

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Constipation

Constipation is an extremely common problem seen by GPs.

The danger is that it can be branded as trivial and serious pathology missed.

1:20 will get colorectal cancer

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Aetiology-Idiopathic

- Normal colonic transit (psychogenic)
- Colonic inertia
- Outlet delay
- Dyssynergic defecation
- Megacolon or megarectum

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Management

- Depends on diagnosis
- Treatments for constipation are stepwise.
- Laxative therapy is not given as a long-term treatment.
- Elderly patients with immobility and constipation may require long-term treatment.
- It is important the patient drinks at least two litres of water a day as this helps the laxative work.

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Management

- Education
- It is important the patient drinks at least two litres of water a day as this helps the laxative work.
- Dietary changes: fluids, fiber (20-35gm/d, dietary +/- supplements)
- Remove offending medications where possible
- Oral vs. suppository vs. enema
- Dis-impaction (chemical, manual, surgical)
- Elderly patients with immobility and constipation may require long-term treatment.

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RED FLAGS

- Weight Loss
- Change in bowel habit, especially diarrhoea and/or increase frequency
- Iron deficiency anaemia
- Abdominal mass
- Rectal mass
- Trauma- Rape?/FBs Haemorrhage

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Aetiology – Secondary Causes (further investigation)

Causes of secondary constipation

Cause	Example
Organic	Colorectal cancer, extraintestinal mass, postinflammatory, ischemic, or surgical stenosis
Endocrine or metabolic	Diabetes mellitus, hypothyroidism, hypercalcemia, porphyria, chronic renal insufficiency, panhypopituitarism, pregnancy
Neurological	Spinal cord injury, Parkinson's disease, paraplegia, multiple sclerosis, autonomic neuropathy, Hirschsprung disease, chronic intestinal pseudo-obstruction
Myogenic	Myotonic dystrophy, dermatomyositis, scleroderma, amyloidosis, chronic intestinal pseudo-obstruction
Anorectal	Anal fissure, anal strictures, inflammatory bowel disease, proctitis
Drugs	Opiates, antihypertensive agents, tricyclic antidepressants, iron preparations, antiepileptic drugs, anti-Parkinsonian agents (anticholinergic or dopaminergic), barium
Diet or lifestyle	Low fiber diet, dehydration, inactive lifestyle

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Rectal Bleeding

- History of when it started
- Assess volume and frequency of bleeding
- Bleeding- streaks, teaspoons or passage of clots
- Melaena (black stool) or coffee ground vomit indicates upper GI tract bleeding
- Haematochezia- refers to the passage of gross blood from the rectum- Lower GI bleeding
- Blood mixed in with the stool or on the surface
- Travel history
- Change in bowel habit
- Abdominal pain
- Weight loss, anaemia, jaundice
- Trauma- sexual/ fB

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Management

- Depends on diagnosis
- ABCDE
- Blood tests- FBC, U&Es, CRP, ESR, LFTs, TSH, HbA1c, Coeliac screen, Lactose intolerance, Gluten intolerance
- Referral two week wait referral pathway aged 40 and over/present for 6 weeks or more
- 60 and over referral without bleeding but just with change in bowel habit
- Urgent referral to AE.
- Sexual assault referral to rape crisis suite
- Lower Right abdominal mass, palpable rectal mass and unexplained iron deficiency anemia urgent referral
- Colonoscopy is first choice for investigation

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Coeliac Disease

Investigate

- persistent unexplained abdominal or gastrointestinal symptoms
- faltering growth /prolonged fatigue /unexpected weight loss
- severe or persistent mouth ulcers
- unexplained iron, vitamin B12 or folate deficiency
- type 1 diabetes, at diagnosis
- autoimmune thyroid disease, at diagnosis
- irritable bowel syndrome
- first-degree relatives of people with coeliac disease.

Before Testing

- Advise people who are following a normal diet (containing gluten) to eat some gluten in more than 1 meal every day for at least 6 weeks before testing
- For people undergoing investigations for coeliac disease: explain that any test is accurate only if a gluten-containing diet is eaten during the diagnostic process **and**
- advise the person not to start a gluten-free diet until diagnosis is confirmed by a specialist, even if the results of a serological test are positive

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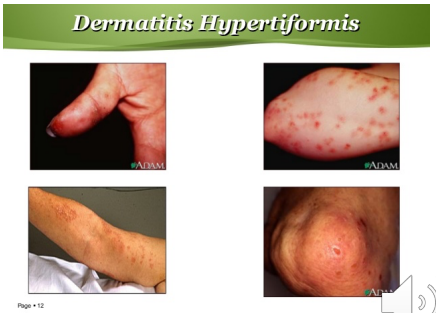
Symptoms

Children

- Failure to thrive
- 20 times more common in Type 1 Diabetes

Adult

- Dermatitis Herpeticformis – intensely itchy rash anywhere in the body



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- Explain to people with coeliac disease (and their family members or carers, where appropriate) that:
- They may need to take specific supplements such as calcium or vitamin D if their dietary intake is insufficient.
- To seek advice from a member of their healthcare team if they are thinking about taking over-the-counter vitamin or mineral supplements.
- They can choose to include gluten-free oats in their diet at any stage **and**
- They will be advised whether to continue eating gluten-free oats depending on their immunological, clinical or histological response.

Advice

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Irritable Bowel Syndrome

- **Irritable bowel syndrome (IBS) is a common condition** that affects the digestive system.
- **It causes symptoms like stomach cramps, bloating, diarrhoea and constipation.** These tend to come and go over time, and can last for days, weeks or months at a time.
- **It's usually a lifelong problem.** It can be very frustrating to live with and can have a big impact on your everyday life.
- **There's no cure**, but diet changes and medicines can often help control the symptoms.
- **The exact cause is unknown** – it's been linked to things like food passing through your gut too quickly or too slowly, oversensitive nerves in your gut, stress and a family history of IBS.
- It is a diagnosis of exclusion

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IBS cont…

- DO's
  - Cook homemade meals using fresh ingredients when you can
  - Keep a diary of what you eat and any symptoms you get – try to avoid things that trigger your IBS
  - Try to find ways to relax
  - Get plenty of exercise
  - Try probiotics for a month to see if they help
- DON'Ts
  - Do not delay or skip meals
  - Do not eat too quickly
  - Do not eat lots of fatty, spicy or processed foods
  - Do not eat more than 3 portions of fresh fruit a day (a portion is 80g)
  - Do not drink more than 3 cups of tea or coffee a day
  - Do not drink lots of alcohol or fizzy drinks

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- Linaclotide 290 microgram capsules should be taken once daily, the dose to be taken at least 30 minutes before meals.
- Loperamide is licensed for the symptomatic treatment of acute diarrhoea in irritable bowel syndrome (IBS). The recommended dose is:
- Initially 4 mg, followed by 2 mg for up to five days, dose to be taken after each loose stool; usual dose 6–8 mg daily; maximum 16 mg per day.
- Antispasmodic drugs may be used as required for abdominal pain or spasm in irritable bowel syndrome (IBS). Drug options include:
- Direct-acting smooth muscle relaxants such as mebeverine hydrochloride (immediate-release or modified-release), alverine citrate, and peppermint oil.
  - These drugs are less likely to cause adverse effects compared with antimuscarinics such as hyoscine butylbromide and dicloverine.
  - Alverine citrate — a dose of 60–120 mg one to three times a day may be used.
  - Mebeverine hydrochloride
    - 135–150 mg three times a day, dose preferably taken 20 minutes before meals for immediate-release preparation.
    - 200 mg twice daily for modified-release preparation.
  - Peppermint oil — one to two capsules taken three times a day for up to 2–3 months if needed, dose to be taken before meals, swallowed whole with water.

Treatment in IBS

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Anti- depressants

- **Tricyclic antidepressants (TCAs) such as amitriptyline,** may be used for the management of pain associated with irritable bowel syndrome (off-label indication).
  - The National Institute for Health and Care Excellence (NICE) recommends starting treatment at a low dose, for example amitriptyline 5–10 mg at night, and titrating the dose up in steps of 10 mg at least every 2 weeks if needed, to a maximum of 30 mg at night.
- **Selective serotonin reuptake inhibitors (SSRIs) such as citalopram or fluoxetine** are second-line drug options (off-label indication). Possible treatment doses are:
  - Citalopram — 10–20 mg daily.
  - Fluoxetine — 20 mg daily.

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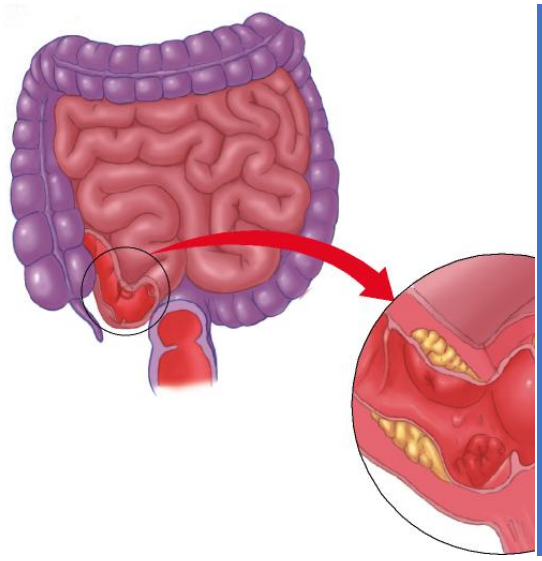

Crohn's Disease

- Pathophysiology
  - Causes unknown
  - Can affect the entire GI tract
  - Pathologic inflammation:
    - Damages mucosa
    - Hypertrophy and fibrosis of underlying muscle
    - Fissures and fistulas

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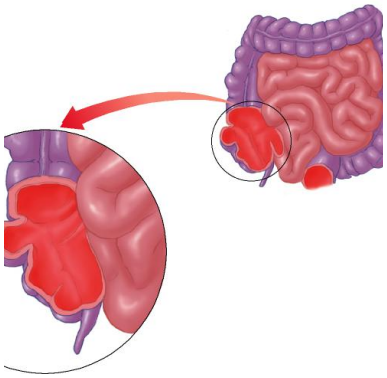
Diverticulitis

- Pathophysiology
  - Inflammation of small outpockets in the mucosal lining of the intestinal tract
  - Common in the elderly
  - Diverticulosis
- Signs and Symptoms
  - Abdominal pain/tenderness
  - Fever, nausea, vomiting
  - Signs of lower GI bleeding
- Treatment
  - General treatment guidelines



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Diverticulitis

Diverticula form in weakened areas of the colonic wall and may become impacted with feces leading to infection and possible perforation.

Pain is described as cramping, steady visceral pain.

May be accompanied by change in bowel habits, fever, nausea, vomiting and anorexia.

May have leucocytes on WBC.

Diagnosed by CT scan - swollen oedematous bowel wall. *Must avoid colonoscopy and barium enema in the acute setting to avoid perforation.

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Diverticulitis

- pain associated with diverticulitis is constant and severe, rather than intermittent. It is most likely to occur if you have previously had symptoms of diverticular disease, and develops over a day or 2.
- Other symptoms of diverticulitis can include:
- Temperature of 38C (100.4F) or above
- a general feeling of being tired and unwell
- Nausea or vomiting
- The pain usually starts below belly button, before moving to the lower left-hand side of your abdomen.
- In Asian people, the pain may move to the lower right-hand side of your abdomen. This is because East Asian people tend to develop diverticula in a different part of their colon for genetic reasons.

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Treatment

- High fibre diet (soluble and insoluble fibre)
- Bulk forming laxatives

Fluids

- Antibiotics
- Analgesia (including paracetamol, non-steroidal anti- inflammatory drugs [NSAIDs] and opiates)
- Antispasmodics
- Aminosalicylates
- Management of recurrent episodes of diverticular disease
- including indications for elective surgery or surgical opinion.

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Pancreatitis

People with acute pancreatitis usually present with sudden-onset abdominal pain.

Nausea and vomiting are often present and there may be a history of gallstones or excessive alcohol intake.

Typical physical signs include epigastric tenderness, fever and tachycardia.

Diagnosis of acute pancreatitis is confirmed by testing blood lipase or amylase levels, which are usually raised.

If raised levels are not found, abdominal CT may confirm pancreatic inflammation.

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Do not assume that a person's chronic pancreatitis is alcohol-related just because they drink alcohol.

Other causes include:

genetic factors

autoimmune disease, in particular IgG4 disease

metabolic causes

structural or anatomical factors

Refer to medical team. Do not keep NBM.

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- Inflammation of the gall bladder caused by duct obstruction with a gall stone.
- Pain is usually steady for an hour or more after onset and made worse by eating.
- If there is significant inflammation associated with the cholecystitis, there may be local peritoneal pain (somatic pain).
- Pain may be referred to the scapular area and accompanies nausea, vomiting, and fever without jaundice.
- Diagnosed with ultrasound.

Cholecystitis

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Cholecystitis

- 'Fair, fat and forty'
- Pain referred into right shoulder
- Episodes of nausea, vomiting, general malaise
- Sometimes with fatty meals
- Often FH
- Abnormail bilirubin + USS evidence both diagnostic
- REFER

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Hepatitis

Caused by inflammation of the liver by viruses, alcohol or certain drugs.

Marked by tender, enlarged liver with malaise, fever and jaundice.

Diagnosed by history and laboratory evaluation - liver function tests and viral serologies.

Treatment depends on aetiology of disease.

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What is on the differential?

- Pancreatitis
- Mesenteric Ischemia
- MI
- Gallbladder Disease
- GERD
- Obstruction
- Peritonitis
- PE
- PUD
- AAA
- Valvular Insufficiency
- Perforated Viscus

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AAA

Fun facts:

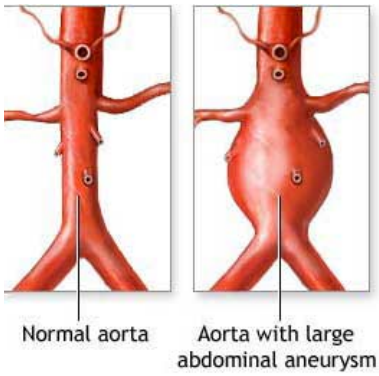
They are typically infrarenal

>3cm at this level is a AAA

Age, Family history, Atherosclerotic risk factors, infection, trauma, connective tissue disease are risk factors.

Rupture is associated with 80-90% mortality.

Vital signs can be normal. For now.



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Symptoms of rupture

- Sudden onset of severe back pain, may radiate to the buttock and legs and abdomen
- Dizziness and nausea
- Feeling clammy
- Hypertension
- Tachycardia
- Features of shock
- Tender pulsatile abdominal mass or and stiff, ridged abdomen

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Differential

- Ectopic Pregnancy
- Ruptured Ovarian Cyst
- Appendicitis
- Right-sided diverticulitis
- TOA
- Ovarian Torsion

- Nephrolithiasis
- Pyelonephritis
- Endometriosis
- UTI
- Heterotopic pregnancy
- Terminal ileitis

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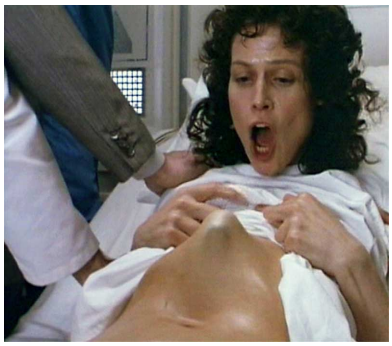
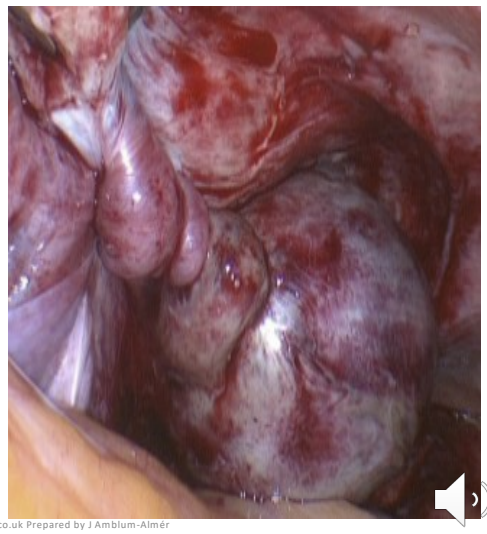
Ovarian Torsion…





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When should ovarian torsion be suspected?

When an ovarian cyst is detected by an imaging study in patients with lower abdominal pain, an obstetrician should be consulted immediately.

Ovarian torsion should be considered in patients with a history of a previous ovarian cyst or assisted reproductive technology, in pregnant women, and in women of childbearing age

When should an obstetrician be consulted for suspicion of extrauterine pregnancy? Characteristic symptoms of extrauterine pregnancy with acute abdomen include amenorrhea, genital bleeding, and lower abdominal pain.

When ultrasonography reveals no fetal sacs in the uterus after 6 weeks of pregnancy or when foetal sac-like structures and effusion liquid outside the uterine cavity are detected, an obstetrician should be consulted immediately

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Cases…

A 24 y/o male presents with rapid onset, non-radiating, diffuse abdominal pain.

He has no medical or surgical history.

He is tachycardic and tachypnoeic.

His exam reveals a distended abdomen which is diffusely tender. He has decreased bowel sounds.

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Differential?

- Appendicitis
- Bowel Obstruction
- Testicular torsion
- Perforated Viscus
- Colitis
- PUD
- Peritonitis
- Mesenteric Ischemia

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Appendicitis

- Inflammatory disease of wall of appendix
- Diagnosis based on history and physical
- Classic sequence of symptoms
  - abdominal pain (begins epigastrium or periumbilical area, anorexia, nausea or vomiting
  - followed by pain over appendix

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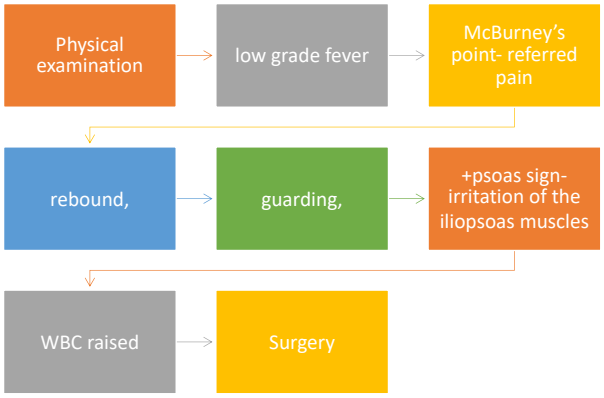
Examination



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Appendicitis

- Occurrence- 10% of population mostly in 10-20 year olds
- The most common cause of acute abdomen in UK
- Presents with pain that may start around umbilicus and spread into RLQ
- May have D & V
- Check vital signs
- Tests such as RBT, Psoas, pinch and Rovsings may be positive
- What is a 'grumbling appendix'??

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When the white blood cell count and CRP are normal, is appendicitis excluded?

It is reported that the white blood cell count is normal in approximately 40% of appendicitis cases, and CRP may be normal without perforation or abscess formation.

Therefore, a normal white blood cell count and CRP level should not exclude a diagnosis of appendicitis

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Treatment…

- NPO
- NasoGastric Tube suction.
- Fluid and Electrolyte repletion
- Antibiotics
- Surgical consult

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- Bulk forming laxatives (eg psyllium)

Absorb liquid in the intestines and swell to form a soft, bulky stool. The bowel is then stimulated normally by the presence of the bulky mass.

- Surfactants (softeners) (eg docusate)

Encourage BMs by helping liquids mix into the stool and prevent dry, hard stool masses.

- Lubricants (mineral oil)

Encourage BMs by coating the bowel and the stool mass with a waterproof film which keeps moisture in the stool. The stool remains soft and its passage is made easier.

- Osmotic agents (eg PEG 3350, lactulose, Mg, glycerin)

Encourage BMs by drawing water into the bowel from surrounding body tissues. This provides a soft stool mass and increased bowel action.

- Stimulant laxatives (eg senna, bisacodyl)

Increase the muscle contractions that move along the stool mass.

- Other (eg. Relistor)

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Haemorrhoids/piles

Common in general population	External, internal, thrombosed	Often in pregnancy
Worse or first occur with constipation	Easy to treat unless persistent	Fibre, fluids, exercise, call to stool,
Be aware of OTC treatments and overuse of treatments	Patients concern over rectal bleeding-care with history	Surgery last resort

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Red Flags (need for endoscopy)

Symptom onset after age 50 (esp if male, Caucasian, smoker, >10 yrs symptoms re: Barrett's)	GI blood loss/anemia	Weight loss
Early satiety	Dysphagia	Persistent vomiting or symptoms refractory to standard therapy

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Investigation and Management

IDENTIFY AND ELIMINATE AGGRAVATING FACTORS (ETOH, TOBACCO, ASA/NSAIDS, STEROIDS, STRESS)

PATIENT EDUCATION RE: DIET AND LIFESTYLE FACTORS

BLOODWORK (?H. PYLORI [VS UREA BREATH OR FECAL ANTIGEN], ?CELIAC), IMAGING (DOUBLE CONTRAST UGI), ENDOSCOPY

TREATMENT (PUD/GERD): H2RA, PPI, H. PYLORI ERADICATION WHEN POSITIVE

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Colon Cancer Check Screening Recommendations

- Average risk: recommend FOBT q2 years for asymptomatic people 50-74 without a family hx of colorectal cancer. [Abnormal FOBT: c-scope within 8 weeks].
- Ages 50-74 without a family hx of colorectal cancer who choose to be screened with flex sigmoidoscopy should be screened q10 years.
- Increased risk: asymptomatic people get screened with c-scope if a family hx of colorectal cancer (1 or more first-degree relatives) beginning at 50 or 10 years earlier than the age their relative was diagnosed, whichever occurs first.

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- Pts on prednisolone – decreased symptoms of fever, guarding and peritoneal irritation in perforation
- Older men higher risk of GI bleed if taking NSAID
- patients who refuse to change posture are likely to have peritonitis. Patient contortion may indicate gallstones and ureteral stones
- Fever may not be present in elderly patients with cholecystitis and appendicitis, even when complicated by perforation or sepsis
- the measurement of body temperature has no utility in the diagnosis or decisions regarding the treatment of acute abdomen.
- Tympany over the liver surface may indicate free air due to gastrointestinal perforation in patients with acute abdomen

Interesting studies

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UTIs

- Can cause abdominal pain and dysuria
- Also retention
- Check CVA tenderness and vital signs when examining

- **Can ureteral calculi be confirmed or excluded by occult blood in the urine?**
  The sensitivity and false-positive rate of urine occult blood in patients with ureteral calculi are 20%–30%. Therefore, it is impossible to diagnose or exclude ureteral calculi only by occult blood in the urine, and it is desirable to perform imaging tests, such as ultrasonography, for confirmatio

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Urinalysis

- Protein :acute glomerulonephritis, chronic nephritis, diabetic nephropathy, nephrotic syndrome, SLE, multiple myeloma, connective tissue disease, pregnancy-induced hypertension syndrome, dehydration
- Glucose: diabetes, secondary glycosuria (acute pancreatitis, liver damage, hyperthyroidism, pheochromocytoma, Cushing syndrome, acromegaly), renal glycosuria, alimentary glycosuria
- PH: acidity: fever, dehydration, starvation, nephritis, diabetes, gout
  alkaline: urinary tract infection, hyperventilation, vomiting, antacid
- Urobilogen: common bile duct obstruction, hepatic jaundice, acute diarrhea, antimicrobial agent, renal failure
- Bilirubin: hepatocellular damage, intrahepatic cholestasis, extrahepatic cholestasis
- Ketones: severe diabetes, hyperthyroidism, acromegaloidism, Cushing syndrome, long-term fasting state, starvation, hyperfatty diet, exercise, fever, vomiting, diarrhea, dehydration

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Patient Population risk Factors

Premenopausal women of any age	• Diabetes Diaphragm use especially those with spermicide • History of UTI or UTI during childhood • Mother or female relatives with history of UTIs • Sexual intercourse
Postmenopausal and older adult women	• Estrogen deficiency • Functional or mental impairment • History of UTI before menopause • Urinary catheterization • Urinaryincontinence
Men and women with structural abnormalities	• *Extrarenalobstruction*associatedwithcongenitalanomaliesoftheureterorurethra,calculi, extrinsic ureteral compression, or benign prostate hypertrophy • *Intrarenalobstruction*associatedwithnephrocalcinosis,uricacidnephropathy,polycystic kidney disease, hypokalemic or analgesic nephropathy, renal lesions from sickle cell disease

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Antibiotics

- Organisms like *E. coli*, *Klebsiella* spp., *Enterobacter* spp., *Proteus* spp., *Staphylococ- cus* spp., and *Pseudomonas* spp. reduce nitrate to nitrite in the urine,
- Nitrofurantoin is recommended for the treatment of cystitis. It is highly active against *E. coli*, with 0.9% resistance among female outpatients (Sanchez 2016). Nitrofurantoin achieves high urinary concentration but does not penetrate well into the renal parenchyma; therefore, it should not be used for the treatment of pyelonephritis
- Trimethoprim remains a highly effective agent for the treatment of uncomplicated cystitis, with cure rates of 90%–100%. It is also effective in the treatment of UTIs in men.
- Levofloxin/ciprofloxin : May have serious adverse events (e.g., tendi- nitis, peripheral neuropathy, and CNS effects). Only use if other antibiotics not suitable
- Fosfomycin: Given the high *E. coli* susceptibility rates and its low potential for collateral damage, fosfomycin is one of the agents recommended by the IDSA for uncomplicated UTIs. However, increased use of fosfomycin has been associated with increased resistance; thus, routine use of fosfomycin for uncomplicated cystitis remains unclear.

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