The Acute Abdomen

- The ‘acute abdomen’ is defined as a sudden onset of severe abdominal pain of less than 24 hours duration.
- It has a large number of possible causes and so a structured approach is required.

- The initial assessment should attempt to determine if the patient has an acute surgical problem that requires immediate and prompt surgical intervention, or urgent medical therapy.

- The first decision when you first see any patient is “Are they critically unwell?”.
- A 10-second assessment of their clinical state can be made by a general look (the “end-of-bed-o-gram”), their observations, and whether they can talk to you.

- If they are critically unwell, give oxygen, start suitable initial steps, and call for help early before going into detail on the history and examination.

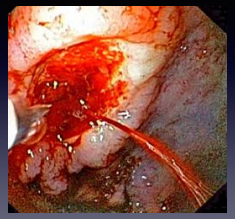
Presentations Requiring Urgent Surgery

Bleeding

- The most serious cause of intra-abdominal bleeding is a ruptured abdominal aortic aneurysm, which requires swift referral to the vascular team and immediate surgical intervention.

- Other common causes usually involve a slower rate of bleeding, but with urgent surgery still required, include ruptured ectopic pregnancy, bleeding gastric ulcer, and trauma.

- These patients will typically go into hypovolemic shock.
- Clinical features include tachycardia and hypotension, pale and clammy on inspection, and cool to touch with a thready pulse.



Perforated Viscus

- Peritonitis is the inflammation of the peritoneum, and a generalised peritonitis is most commonly caused by perforation of an abdominal viscus.

- The causes of perforation are broad but include peptic ulceration, small or large bowel obstruction, diverticular disease, and inflammatory bowel disease.

Perforated Viscus

- Patients with a generalised peritonitis present with some characteristic features:
- Patients often lay completely still, not to move their abdomen, and look unwell
- This is especially important when compared to a renal colic, whereby patients are constantly moving and cannot get comfortable.

Perforated Viscus

- Tachycardia and potential hypotension
- A completely rigid 'washboard' abdomen with percussion tenderness
- Involuntary guarding – the patient involuntarily tenses their abdominal muscles when you touch the abdomen
- Reduced or absent bowel sounds – suggesting the presence of a paralytic ileus

Ischaemic Bowel

- Any patient who has severe pain out of proportion to the clinical signs has ischaemic bowel until proven otherwise.
- They are often acidaemic with a raised lactate and physiologically compromised.

- Patients will often complain of a diffuse and constant pain, however the examination can often otherwise be unremarkable.
- Definitive diagnosis is via a CT scan with IV contrast, with early surgical involvement.

Presentations That Are Less Acute

Colic

- Colic is an abdominal pain that crescendos to become very severe and then goes away completely. This is most typically seen in either ureteric obstruction or bowel obstruction.

- Biliary 'colic' is not a true colic as the pain does not go away completely, instead getting periodically better and worse ('waxes and wanes').

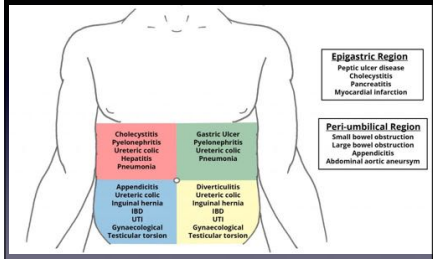
Peritonism

- Peritonism (not peritonitis) refers to the localised inflammation of the peritoneum, usually due to inflammation of a viscus that then irritates the visceral (and subsequently, parietal) peritoneum.

- This leads to patients stating that their abdominal pain starts in one place (irritation of the visceral peritoneum) before localising to another area or becoming generalised (irritation of the parietal peritoneum). The classic example of this is acute appendicitis.

Differential Diagnosis

- The location of abdominal pain is perhaps the most useful initial feature to help narrow your differential.
- These can be classified based upon quadrant or region affected



- It must be remembered to always consider extra-abdominal organs as the cause for abdominal pain, including cardiac, respiratory and gynaecological or testicular conditions.)

- Importantly, there are non-general surgical causes of abdominal pain that must not be missed
  - testicular torsion
  - ruptured ectopic pregnancy
  - diabetic ketoacidosis
  - myocardial infarction

Investigations

Laboratory Tests

- The investigations in all cases of the acute abdomen share the same generic outline:
- Urine dipstick – for signs of infection or haematuria ±MC&S. Include a pregnancy test for all women of reproductive age.
- ABG – useful in bleeding or septic patients, especially for the pH, pO_2, pCO_2, and lactate for signs of tissue hypoperfusion, as well as a rapid haemoglobin.
- Routine bloods – FBC, U&Es, BSL, Liver Function, CRP, amylase.

- Consider measuring serum calcium in suspected pancreatitis.
- Do not forget a group & save (G&S) if the patient is likely to need surgery soon.
- Blood cultures – if considering infection as a potential diagnosis
- Note: Any amylase 3x greater than the upper limit is diagnostic of pancreatitis. Any raised value lower than this may also be due to another pathology, such as perforated bowel, ectopic pregnancy, or diabetic ketoacidosis (DKA).

Imaging

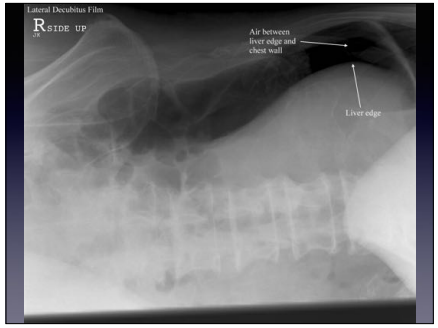
- In the emergency setting, every patient with abdominal pain should have an ECG to exclude myocardial infarction.

Non-radiological (ultrasound)

- Kidneys, ureters and bladder ('KUB') – for suspected renal tract pathology
- Biliary tree and liver – for suspected gallstone disease
- Ovaries, fallopian tubes and uterus – for suspected tubo-ovarian pathology

Radiological

- An erect chest X-ray (eCXR) – for evidence of bowel perforation
- CT imaging, often best discussed with a senior depending on the suspected underlying diagnosis



Management

- The definitive management of acute abdomen depends largely on the cause.
- However, a good initial management plan includes the same key points – regardless of the underlying aetiology.

- These include admission, IV access, NBM, analgesia +/- antiemetics, imaging, VTE prophylaxis, urine dip, bloods
- Consider a urinary catheter and/or nasogastric tube if necessary.
- Start IV fluids and monitor fluid balance.

Key Points

- The first decision when you first see any patient is “Are they critically unwell?”
- Wide array of pathologies that cause an acute abdomen, important to differentiate the urgent from non-urgent

Key Points

- Routine bloods and initial imaging can help with aiding the diagnosis
- Management depends on the underlying cause, however ensure to start adequate resuscitation and inform your seniors if at all concerned