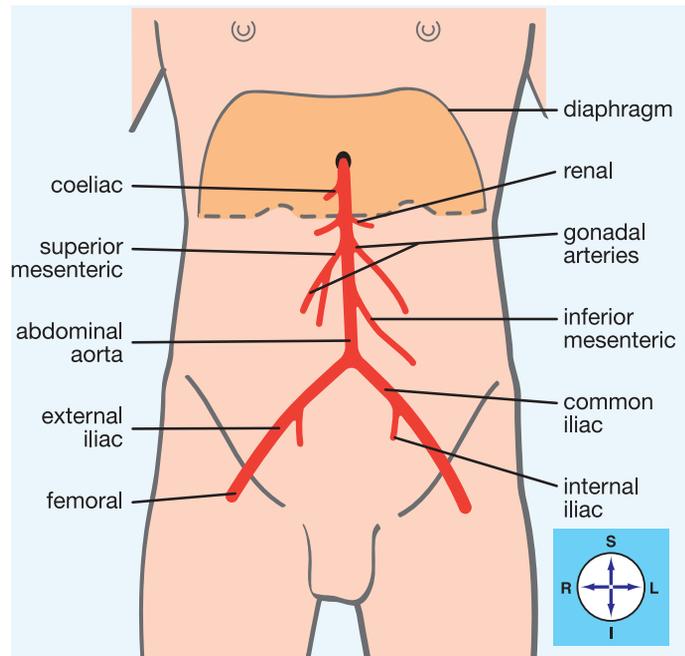


## The Surgical Abdomen

This lecture will be divided into two parts. We begin, not by running through an in-depth guide of how to examine the abdomen but rather, give you some top tips as to things we see students getting wrong or having difficulty with, on a regular basis. We then move on to discussing some of the commoner conditions that come up in the final exams (which of course is very different from the real world)!

Remember that the abdomen is a surprisingly large cavity extending from underneath the rib cage to the brim of the pelvis. This emphasises the importance of exposing the patient from nipples to knees.

You need to know the blood supply of the abdominal cavity; the aorta reliably divides at L4 into the common iliac arteries. The three main vessels of the abdomen are the coeliac trunk and the superior and inferior mesenteric arteries.



The principle blood supply of the Abdomen

## Location of pain

It is important that you understand that there is a difference between dermatomal innervation and somatic innervation. Each spinal segment supplies one dermatome and a variable region of somatic nociception. The nerve supply of the foregut is perceived in the epigastric region; that of the midgut in the central abdomen and that of the hindgut in the supra-pubic region. This explains why a patient with appendicitis (a mid-gut structure) will initially experience pain in the central abdomen (somatic visceral pain), but then as the appendix becomes more inflamed and irritates the overlying peritoneum, will find that the pain migrates to the right iliac fossa.

## To Talk or Not to Talk

It is always difficult when preparing for a clinical examination, both at this stage and for the rest of your career to know whether to explain your findings as you go along or whether to examine and present at the end. A danger of talking as you go is that you may highlight findings which you later would rather refute, or indeed be distracted from your examination itself because you are worried about speaking. A problem with remaining silent until then end of the examination is that examiners tend to get bored and may start asking you difficult questions whilst you are trying to examine. The decision is yours – but we would recommend that you talk as you go along, but try not to commit yourself too early to any specific findings!

## Examination of the Abdomen

The examiner should say to you **“Please examine this patient’s ABDOMINAL SYSTEM”** (in which case you start with the hands) or **“Please examine this patient’s ABDOMEN”** in which case you should move quickly to

examine the patient's actual abdomen, still commenting on general features such as cachexia or ascites.

Introduce yourself and ask for permission. Get a really good look – offer to expose the patient from nipples to knees – the examiner will usually stop you, but it will mean you certainly won't miss an otherwise hidden hernia!

Exposure: Xiphisternum to pubic area – always maintain dignity!

General inspection:

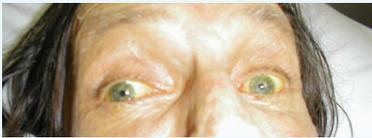
- Cachexia, jaundice

## Peripheral stigmata of abdominal disease

- Clubbing (cirrhosis, Crohn's disease, malignancy)
- Palmar erythema, Dupuytren's, leuconychia (chronic liver disease)
- Liver flap: ask the patient to extend their wrist and fingers; associated with hepatic encephalopathy

Conjunctivae:

- Jaundice
- Anaemia



Jaundice, seen in the sclerae

Mouth:

- Telangiectasia (hereditary haemorrhagic telangiectasia)
- Perioral pigmentation (Peutz-Jegher syndrome)
- Tongue – glossitis in Vitamin B12 deficiency

Supraclavicular nodes:

- Lymphadenopathy within the left supraclavicular fossa is known as Virchow's node, also known as Troisier's sign – associated with oesophageal and gastric carcinoma

Thoracic wall:

- Spider naevi, gynaecomastia, bruising (all signs of liver disease)
  - Press the centre of the naevus to demonstrate filling from the centre
  - Always within distribution of SVC i.e. face upper chest wall upper limbs



Spider naevi on the chest wall (5 or more is abnormal)

Notes:

# The Abdomen proper

Again, start with inspection:

- Distension
- Fullness in a particular quadrant
- Stomas
- Scars
- Caput Medusa: Dilated, tortuous, superficial veins radiating upwards from the umbilicus. Portal hypertension has caused recanalisation of the umbilical vein, allowing the formation of this collateral pathway for venous return:



Caput medusa on a patient's chest wall

- Sister Mary Joseph nodule – any metastatic deposit which deposits itself at the umbilicus. Frequently intra-abdominal, and usually advanced disease



Sister Mary Joseph nodule

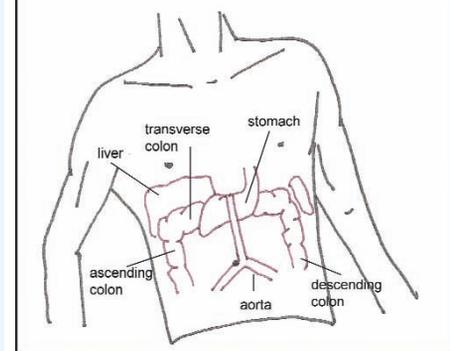
- Check for obvious incisional or inguinal hernias as well as divarication of the recti by asking the patient to raise their head (or legs) and to hold them there
- This increases intra-abdominal pressure and may produce a hernia not otherwise seen with the patient relaxed
- After asking the patient about any tenderness, proceed to palpation
- If the patient points out an area of tenderness, then proceed with palpation away from this area
- Whilst kneeling from the patient's right side, perform light and deep palpation of all 9 quadrants, **WHILST ALWAYS LOOKING AT THE PATIENT'S FACE:**

Right hypochondrium	Epigastric	Left hypochondrium
Right lumbar	Umbilical	Left lumbar
Right iliac fossa	Suprapubic	Left iliac fossa

The following table illustrates the possible cause of a mass within a particular region:

Hepatomegaly Gallbladder disease Pancreatic Ca (head) Colonic Ca Reidel's lobe	Gastric Ca Enlarged left lobe of liver Pancreatic pseudocyst / carcinoma AAA	Splenomegaly Left kidney Colonic Ca Pancreatic Ca (tail)
Enlarged kidneys	AAA Pancreatic Ca (body) Pancreatic pseudocyst	Enlarged kidneys
TB Caecal carcinoma Ovarian mass Transplanted kidney	Bladder	Caecal carcinoma Ovarian mass Transplanted kidney

Surface markings of the abdominal structures



Surface markings of the abdominal structures

## Feel for organomegaly

### Liver

- Normally the liver arises from the sixth intercostal space, and is only just palpable in the thin individual whilst inspiring (ie normal size about size of patient's hand)
- Start from the right iliac fossa (RIF) with a flat hand. Use the side of your index finger to feel for the liver. Ask the patient to take a deep breath in (which pushes the liver down onto your hand), and continue to move up towards costal margin
- Percuss for the upper limit in the mid-clavicular line (normally 6th intercostal space)

### Causes of hepatomegaly:

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