CLINICAL GUIDE TO

Gastroenterology

Edited by
Yang Chen
Maxton Pitcher

Series Editor:
Christian Fielder Camm

with MCQs and more

WILEY Blackwell

Clinical Guide to Gastroenterology

The *Clinical Guides* series

Series Editor: Christian Fielder Camm

The *Clinical Guides* are a brand new resource for junior doctors and medical students. They provide practical and concise information on symptoms, common conditions, and day-to-day problems faced in the clinical environment. They are easy to navigate and allow swift access to information as it is needed, with step-by-step guidance on investigations, decision-making and interventions, and how to survive and thrive on clinical rotations and attachments**.**

Clinical Guide to Gastroenterology

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Acronyms and Abbreviations

2WW	Two-week wait
5-FU	5-fluorouracil
5-HIAA	5-hydroxyindoleacetic acid
5-HT_4	5-hydroxytryptamine-4 receptor
5-ASA	5-aminosalicylic acid
A&E	Accident and emergency
AAA	Abdominal aortic aneurysm
Ab	Antibody
ABG	Arterial blood gas
ACE	Angiotensin converting enzyme
ACS	Acute coronary syndrome
ACTH	Adrenocorticotrophic hormone
ADP	Adenosine diphosphate
ADPKD	Autosomal dominant polycystic kidney disease
AF	Atrial fibrillation
AFB	Acid-fast bacillus
AFP	α-fetoprotein
AIDS	Acquired immune deficiency syndrome
AIH	Autoimmune hepatitis
AKI	Acute kidney injury
ALD	Alcoholic liver disease
ALF	Acute liver failure
ALP	Alkaline phosphatase
ALT	Alanine transaminase
AMA	Antimitochondrial antibody
AMTS	Abbreviated Mental Test Score
ANA	Antinuclear antibody
Anti-AChR	Antibodies to acetylcholine receptors
APTT	Activated partial thromboplastin time
ARB	Angiotensin receptor blocker
ARDS	Acute respiratory distress syndrome
ASMA	Anti-smooth muscle antibody
AST	Aspartate transaminase
AVM	Arterio-venous malformation
AXR	Abdominal X-ray
β-HCG	β-human chorionic gonadotrophin
BM	Capillary blood glucose
BMI	Body mass index
BP	Blood pressure
bpm	Beats per minute
BPPV	Benign paroxysmal positional vertigo
C. difficile	*Clostridium difficile*
Ca125	Cancer antigen 125
CA-19-9	Cancer antigen 19-9
CBD	Common bile duct
CBT	Cognitive behavioural therapy
cCa	Corrected calcium level
CCF	Congestive cardiac failure
CCK	Cholecystokinin
CDAD	*C. difficile*-associated diarrhoea
CD117	Cluster of differentiation 117
CD8+	Cluster of differentiation 8
CDT	*Clostridium difficile* toxin
CEA	Carcinoembryonic antigen
CFTR	Cystic fibrosis transmembrane conductance regulator
CgA	Chromogranin A
CIWA	Clinical Institute Withdrawal Assessment for Alcohol
CKD	Chronic kidney disease
CLD	Chronic liver disease
CLO	Campylobacter-like organism
CMV	Cytomegalovirus
CNS	Central nervous system
COPD	Chronic obstructive pulmonary disease
Cr	Creatine
CRP	C-reactive protein
CRT	Capillary refill time
CSF	Cerebrospinal fluid
CT	Computed tomography
CTAP	CT abdomen/pelvis
CT CAP	CT chest/abdomen/pelvis
CTPA	Computed tomography pulmonary angiography
CT PET	Computed tomography positron emission tomography
CTVC	Computed tomography virtual colonoscopy
CXR	Chest X-ray
CYP2E1	Cytochrome P450 2E1
D&V	Diarrhoea and vomiting
DAAs	Directly acting antivirals
DEXA	Dual-energy x-ray absorptiometry
DIC	Disseminated intravascular coagulation
DKA	Diabetic ketoacidosis
DNA	Deoxyribonucleic acid
DRE	Digital rectal examination
dsDNA	Double-stranded deoxyribonucleic acid
DVT	Deep vein thrombosis
DWI	Diffusion weighted imaging
E. coli	*Escherichia coli*
EATL	Enteropathy-associated T-cell lymphoma
EBV	Epstein–Barr virus
ECG	Electrocardiogram
ECHO	Echocardiogram
EEG	Electroencephalograph
eGFR	Estimated glomerular filtration rate
EGFR	Epidermal growth factor receptor
EMA	Anti-endomyosial antibody
EMR	Endoscopic mucosal resection

ENA	Extrinsic nuclear antigen
ENT	Ear, nose and throat
ERCP	Endoscopic retrograde cholangiopancreatography
ESR	Erythrocyte sedimentation rate
ESWL	Extracorporeal shock-wave lithotripsy
FAP	Familial adenomatous polyposis
FAST	Focused assessment with sonography for trauma
FBC	Full blood count
FNA	Fine needle aspirate
FOB	Faecal occult blood
FODMAP	Fermentable oligosaccharides, disaccharides, monosaccharides, and polyols
G6PDH	Glucose-6-phosphate dehydrogenase
GA	General anaesthetic
GABA	γ-amino butyric acid
GAVE	Gastric antral vascular ectasia
GBS	Guillian–Barré syndrome
GCS	Glasgow coma score
GDH	Glutamate dehydrogenase
GGT	γ-glutamyl transferase
GFD	Gluten-free diet
GFR	Glomerular filtration rate
GI	Gastrointestinal
GIST	Gastrointestinal stromal tumour
GOJ	Gastro-oesophageal junction
GORD	Gastro-oesophageal reflux disease
GMC	General Medical Council
GP	General practitioner
H. pylori	*Helicobacter pylori*
HAS	Human albumin solution
HAV	Hepatitis A virus
Hb	Haemoglobin
HbA1c	Glycated haemoglobin
HBc	Hepatitis B core
HBcAg	Hepatitis B core antigen
HBeAg	Hepatitis B e antigen
HBs	Hepatitis surface
HBsAg	Hepatitis surface antigen
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HDU	High-dependency unit
HDV	Hepatitis C virus
HEV	Hepatitis E virus
HFE	Haemochromatosis gene
HHS	Hyperglycaemic hyperosmolar state
HIV	Human immunodeficiency virus
HLA-DQ2	Human leucocyte antigen-DQ2
HNPCC	Hereditary non-polyposis colorectal cancer
HR	Heart rate
HRS	Hepatorenal syndrome
HSV	Herpes simplex virus
HTN	Hypertension
HUS	Haemolytic uremic syndrome
IBD	Inflammatory bowel disease
IBS	Irritable bowel syndrome
ICD	International Classification of Disease
ICP	Intracranial pressure
ICV	Ileo-caecal valve
IgA	Immunoglobulin A
IgG	Immunoglobulin G
IgG1	Immunoglobulin G1
IgG4	Immunoglobulin G4
IgM	Immunoglobulin M
IHD	Ischaemic heart disease
IL-12	Interleukin 12
IL-23	Interleukin 23
IM	Intramuscular
IMA	Inferior mesenteric artery
INR	Internationalised normalised ratio
ITU	Intensive care unit
IV	Intravenous
IVDU	Intravenous drug user
JVP	Jugular venouse pressure
LBO	Large bowel obstruction
LDH	Lactate dehydrogenase
LFT	Liver function test
LIF	Left iliac fossa
LKM	Liver, kidney, muscle
LMWN	Low molecular weight heparin
LOS	Lower oesophageal sphincter
LP	Lumbar puncture
LUQ	Left upper quadrant
MALT	Mucosa-associated lymphoid tumour
MC&S	Microscopy, culture, and sensitivity
MCH	Mean corpuscular haemoglobin
MCV	Mean corpuscular volume
MDCT	Multi-detector CT
MDT	Multi-disciplinary team
MELD	Model for End-Stage Liver Disease
MEN1	Multiple endocrine neoplasia type 1
MEN2	Multiple endocrine neoplasia type 2
MI	Myocardial infarction
MMSE	Mini mental status examination
MR	Mitral regurgitation
MRCP	Magnetic resonance cholangiopancreatography
MRI	Magnetic resonance imaging
MSK	Musculoskeletal
MUSK	Muscle specific kinase
M–W	Mallory–Weiss
MYH	MYH gene associated with polyposis
NAC	N-acetylcysteine
NAFLD	Non-alcoholic fatty liver disease
NAPQI	N-acetyl-p-benzoquinone imine
NASH	Non-alcoholic steatohepatitis
NBM	Nil by mouth
NET	Neuroendocrine tumour
NEWS	National early warning score
NG	Nasogastric
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NKA	Neurokinin A

NNT	Number needed to treat
NSAIDs	Non-steroidal anti-inflammatory drugs
NSTEMI	Non-ST elevation myocardial infarction
OCP	Oral contraceptive pill
ODP	Operating department practitioner
OGD	Oesophagogastroduodenoscopy
OGJ	Oesophagogastric junction
OPG	Orthopantomogram
PaO_2	Partial pressure of oxygen
PBC	Primary biliary cholangitis
pCO_2	Partial pressure of carbon dioxide
PCI	Percutaneous coronary intervention
PCR	Polymerase chain reaction
PE	Pulmonary embolus
PEG	Percutaneous endoscopic gastrostomy
PET	Positron emission tomography
PHE	Public Health England
PICC	Peripherally inserted central catheter
Plts	Platelets
PMHx	Past medical history
PMN	Polymorphonuclear leukocyte
PP	Pancreatic polypeptide
PPI	Protein pump inhibitor
PPM	Permanent pacemaker
PR	Per rectum
PRN	Pro re nata (defined as 'when needed')
PSA	Prostate-specific antigen
PSC	Primary sclerosing cholangitis
PT	Prothrombin time
PTC	Percutaneous trans-hepatic cholangiogram
PUD	Peptic ulcer disease
PV	Per vaginum
RAST	Radioallergosorbent test
RCT	Randomised controlled trial
RDW	Red cell distribution width
RF	Radiofrequency
RhF	Rhesus factor
RIF	Right iliac fossa
RLQ	Right lower quadrant
RNA	Ribonucleic acid
RR	Respiratory rate
RUQ	Right upper quadrant
SAAG	Serum-ascitic albumin gradient
SaO_2	Saturation of oxygen in arterial blood
SBAR	Situation background assessment recommendation
SBO	Small bowel bacterial overgrowth
SBP	Spontaneous bacterial peritonitis
SC	Subcutaneous
SHO	Senior house officer
SIR	Systemic inflammatory response
SIRS	Systemic inflammatory response syndrome
SLE	Systemic lupus erythematosus
SLT	Speech and language therapy
SMA	Superior mesenteric artery
SPECT	Single-photon emission computed tomography
SPINK1	Serine protease inhibitor kazal type 1
SpO_2	Peripheral capillary oxygen saturation
SpR	Specialty registrar
sO_2	Saturation of oxygen level
SOB	Shortness of breath
SSRIs	Selective serotonin-reuptake inhibitors
STEMI	ST elevation myocardial infarction
STI	Sexually transmitted infection
SVC	Superior vena cava
SVT	Supraventricular tachycardia
TNM staging	Tumour-size, lymph node disease, metastases (convention of cancer staging)
T2DM	Type 2 diabetes mellitus
TB	Tuberculosis
TDS	Three times a day
TFT	Thyroid function test
TIPS	Trans-jugular intrahepatic portosystemic shunting
TNF-α	Tumour necrosis factor alpha
TPMT	Thiopurine methytransferase
TPN	Total parenteral nutrition
TSH	Thyroid stimulating hormone
TTG	Tissue transglutaminase
UC	Ulcerative colitis
UDCA	Ursodeoxycholic acid
U&Es	Urea and electrolytes
UGI	Upper gastrointestinal
UGIB	Upper gastrointestinal bleeding
UKELD	United Kingdom Model for End-Stage Liver Disease
ULN	Upper limit of normal
UOS	Upper oesophageal sphincter
US	Ultrasound
UTI	Urinary tract infection
VBG	Venous blood gas
VEGF	Vascular endothelial growth factor
VKA	Vitamin K antagonist
VT	Ventricular tachycardia
VTE	Venous thromboprophylaxis
VTEC	Verotoxigenic *Escherichia coli*
VZV	Varicella zoster virus
WBC	White blood cells
WCC	White cell count
WHO	World Health Organization

Podcast and Box Icons

Clinical	
Differential	
Scales and scores	
How to	
Podcast	

About the Companion Website

This book is accompanied by a companion website:

www.wiley.com/go/chen/gastroenterology

The website includes:

- Audio Clips
- Audio Scripts
- Self Assessment Questions
- Clinical Cases
- Online Chapters and Sections

Due to space constraints, some smaller chapters have been moved from the book to the companion website. The companion website also contains a large number of self-assessment questions in MCQ, EMQ, and SAQ format. Additionally, there are a number of clinical cases to work through.

1.1 Examination Technique

Rosalie Alpine
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1.1.1 CHAPTER AT A GLANCE

Box 1.1.1 Chapter at a Glance

- The abdominal examination is complex and requires practice to master
- Significant features suggestive of chronic abdominal disease are available in the peripheries
- Systematic examination of the abdomen is important to not miss findings

1.1.2 COMMON CONDITIONS

- Chronic liver disease (CLD) ■
- Alcohol withdrawal ■
- Viral hepatitis ■
- Inflammatory bowel disease (IBD) ■
- Malignancy ■

1.1.3 CLINICAL EXAMINATION – PERIPHERIES

Table 1.1.1 Elements to be undertaken prior to examining the patient

Item	Detail
1. Appropriate hand hygiene	Wash hands with soap and water or alcohol hand rub
2. Introduce yourself	Full name and job title
3. Confirm patient's identity	Confirm name and date of birth, verify against wristband
4. Gain consent	Explain your role, the examination, and why you are performing it
5. Maintain dignity and comfort	Ensure that you are in a well-lit and private area where you will not be disturbed
6. Ensure a chaperone when needed	Explain reasoning and ensure the patient is happy with this
7. Be mindful of personal and cultural boundaries	Be respectful and considerate during the examination
8. Position the patient	Initially conducted with the patient at 45° On moving to the abdomen, patient should be supine
9. Expose the patient appropriately	Ideally, from the xiphoid process to the symphysis pubis. Can be done after peripheral examination

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

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Companion website: www.wiley.com/go/chen/gastroenterology

Box 1.1.2 The Use of Examination to Aid History

- Patients will often give additional history while you are examining them
- Often the silences during examination give patients time to think about things they may have forgotten to tell you previously
- Although you may be concentrating on examination, be interested in what they are saying and listen carefully

Table 1.1.2 Examination features from the end of the bed

Item	Comments
1. Does the patient look well?	• Aggressive/agitated • Lethargic/drowsy
2. Are they alert and orientated?	• Reduced Glasgow coma score (GCS) is present in shock • Confusion (■ / ■) • Agitation (■)
3. Body mass index (BMI)	• Obesity • Underweight, e.g. malabsorption (■), cachexia (■)
4. Presentation	• Unkempt – social or mental health issues
5. Lines in and out of patient	• IV infusions • Catheters • Oxygen • Nasogastric (NG) tube
6. Patient monitoring	• Observation chart • Continuous ECG monitoring • Haemodynamic monitoring
7. Look around the patient	• Eating and drinking • Vomit bowl • Medications

Table 1.1.3 Examination findings in the hands and limbs

Item	Conditions
1. Tremor	■
2. Hepatic flap	■
3. Sweating	Sepsis / ■ / Illicit substance / ■
4. Clubbing	■ / ■ / ■
5. Palmar erythema	■
6. Dupuytren's contracture	■
7. Discoloured skin	Haemochromatosis/Addison's disease
8. Signs of intravenous drug use	■
9. Signs of arthritis	■
10. Ankle oedema	Hypoalbuminaemia / ■

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

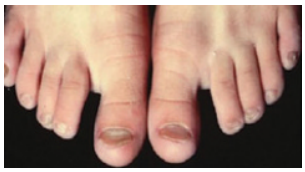
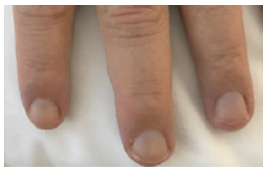
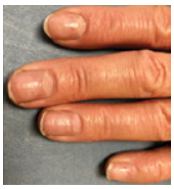
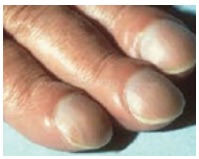
Image				
Nail Change	Koilonychia	Leukonychia	Beau's lines	Clubbing
Associated disorders	Iron deficiency anaemia	Hypoalbuminaemia	Flare of IBD GI malignancy Acute GI infection	Cirrhosis GI malignancy IBD Chronic infection

Figure 1.1.1 Nail changes in GI disease.

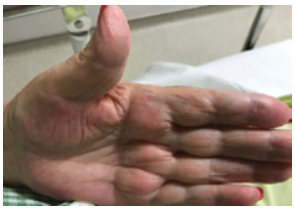
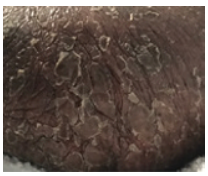
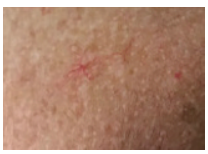
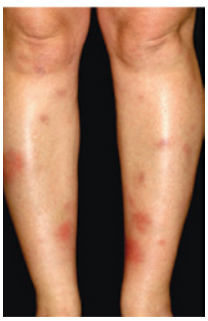
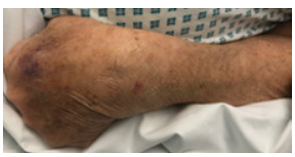
Image	Condition	Related disorder
	Palmar erythema	Liver disease
	Psoriatic patches – note typical silver scaling	Extra-intestinal IBD association
	Spider naevus	Chronic liver disease, especially alcohol (>5 spider naevi is pathological)
	Erythema nodosum (multiple lesions on legs)	IBD
	Bruising/thin skin	Steroid treatment

Figure 1.1.2 Skin changes in GI disease.

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

Table 1.1.4 General inspection – face and neck

Item	Conditions
1. Scleral icterus	■ / ■
2. Xanthelasma	Associated with primary biliary cholangitis
3. Kayser–Fleisher rings	Wilson's disease
4. Anterior uveitis/scleritis	■
5. Mouth ulcers	■
6. Raw, erythematous tongue	Vitamin B12 deficiency
7. Atrophic glossitis/angular stomatitis	Iron deficiency
8. Lymphadenopathy (supraclavicluar/axillary/Virchow's)	■

Table 1.1.5 General inspection – chest

Item	Conditions
1. Spider naevi	■
2. Muscle wasting of thorax	Type 1 diabetes / ■ / ■
3. Gynaecomastia	■
4. Loss of body hair	■ / Hypogonadism or haemochromatosis

1.1.4 CLINICAL EXAMINATION – ABDOMEN

- Anatomically the abdomen can be divided into nine regions (Figure 1.1.3)

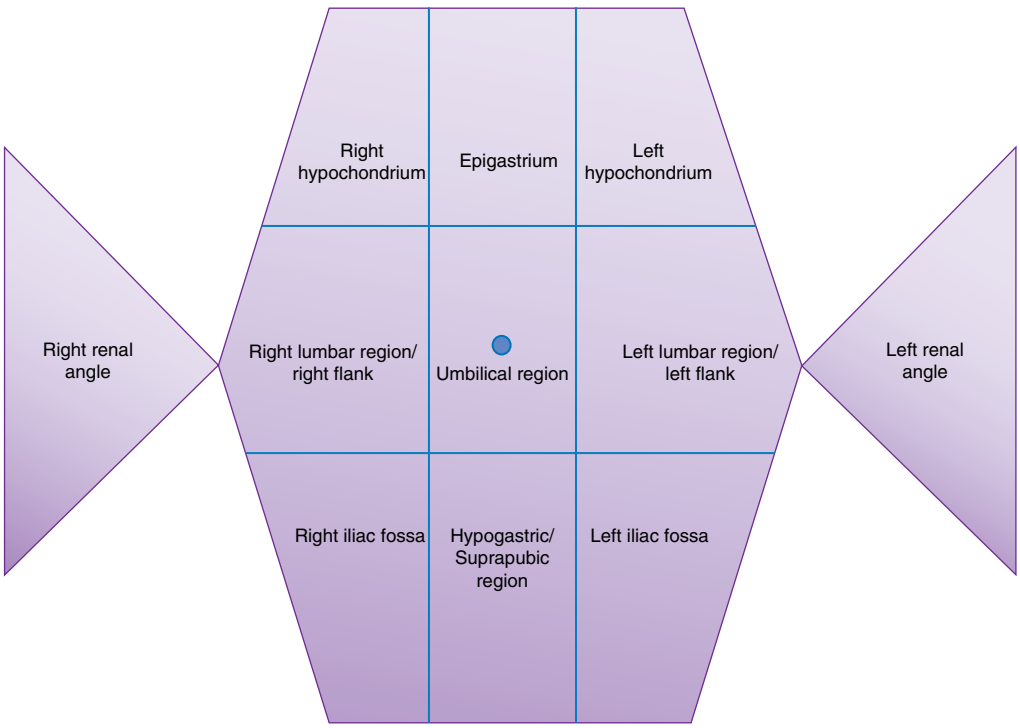


Figure 1.1.3 Division of the abdomen.

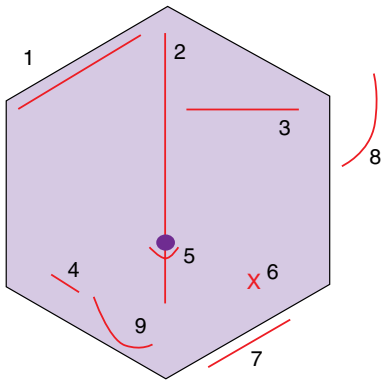
1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

Box 1.1.3 The 6 Fs of Distension

- Fat (obesity)
- Faeces (constipation, obstruction)
- Fluid (tumours, ascites, palpable bladder)
- Foetus (pregnancy)
- Flatus (obstruction or pseudo-obstruction)
- Function (irritable bowel syndrome, IBS)

Table 1.1.6 Inspection features on the abdomen

Item	Conditions
1. Scars	See Figure 1.1.4
2. Visible masses	Hernia / ■ / ■
3. Stoma sites	Ileostomy/colostomy (see Figure 1.1.5)
4. Hernias	Inguinal/femoral/umbilical/para-umbilical/epigastric (see Boxes 1.1.10 and 1.1.11)
5. Striae/bruising	■
6. Scratch marks	■
7. Caput medusa	■
8. Ask patient to lift head from the pillow	Sensitive sign for peritonism



Scar	Possible operation
1. Kocher's incision	Biliary surgery Hepatic surgery
2. Midline laparotomy	Any major abdominal surgery
3. Transverse upper abdominal incision	Splenic surgery
4. Grid-iron incision	Appendicectomy
5. Umbilical/subumbilical	Hernia repairs
6. Point incision marks	Laparoscopy port sites Drain sites
7. Inguinal incisions	Inguinal hernia repairs Vascular access scars
8. Lateral thoracolumbar	Nephrectomy
9. Rutherford Morrison (hockey stick)	Renal transplant

Figure 1.1.4 Common abdominal surgical scars.

Palpation and Percussion

- If there is pain, begin by palpating furthest away from the area that is tender
- Monitor the patient's facial expression at all times for signs of discomfort
- Palpate each area lightly and then repeat with deeper palpation
- Rigidity suggests peritonitis and the abdominal wall will cease to move with respiration
- Feel for masses and hernias, and characterise

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

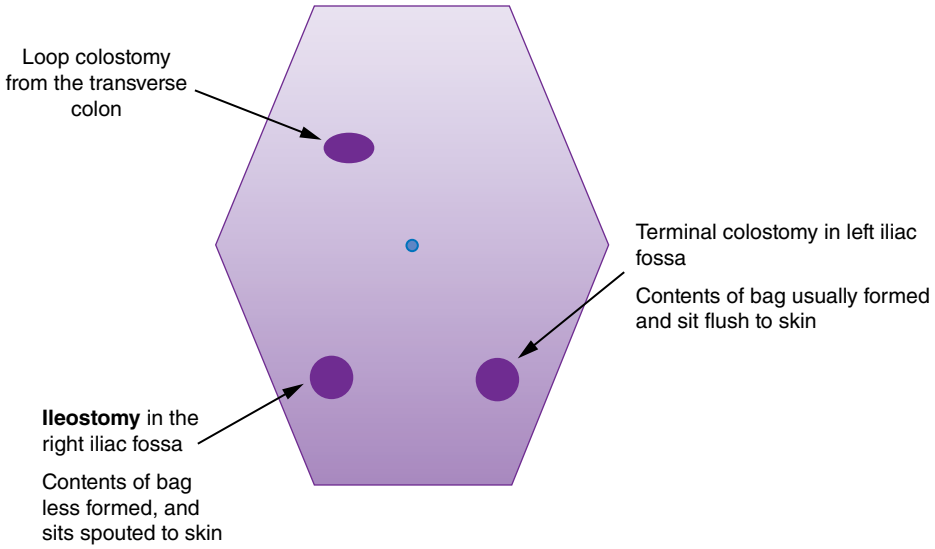


Figure 1.1.5 Common sites of stomas.

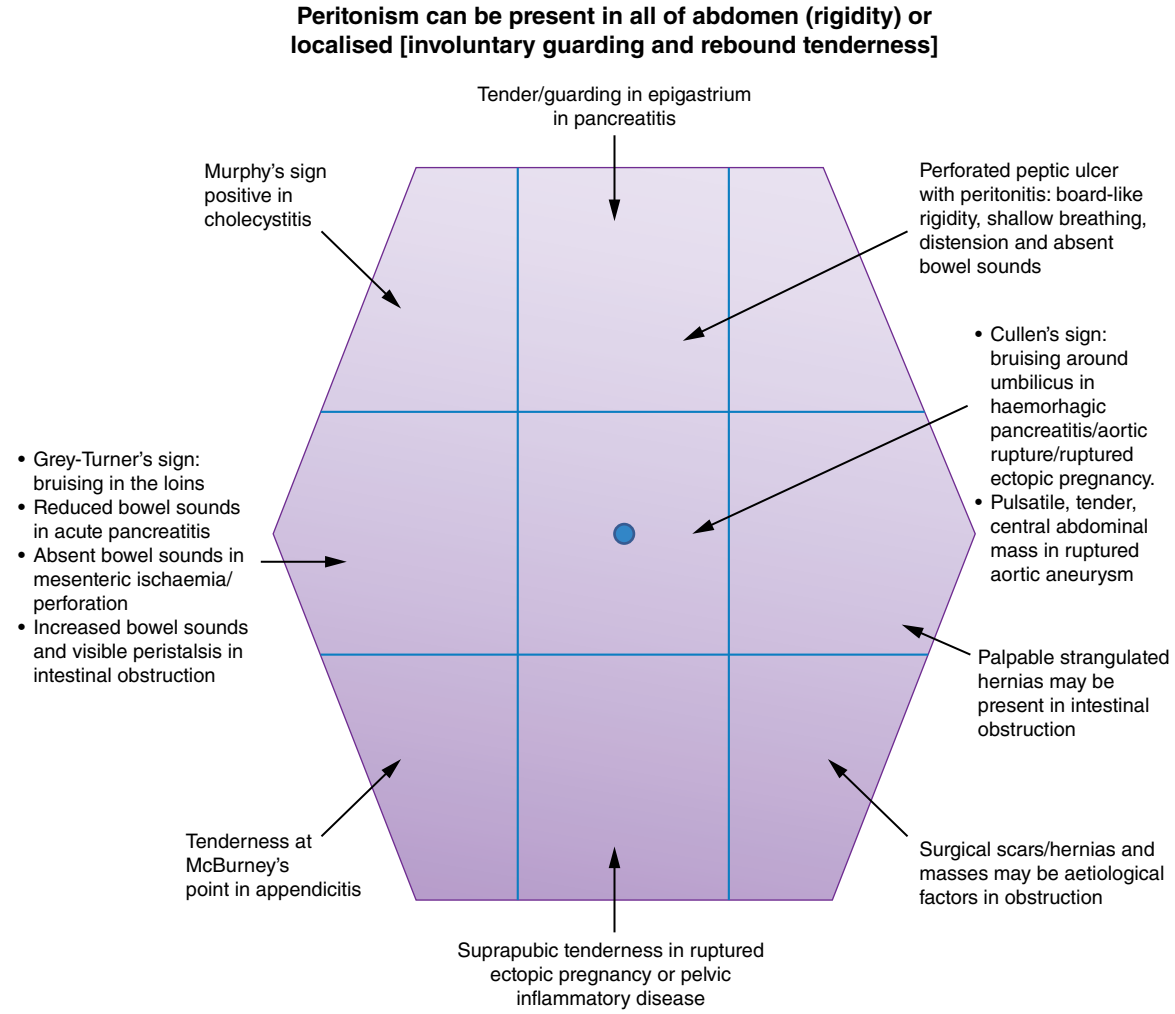


Figure 1.1.6 Possible findings in acute abdominal pain.

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

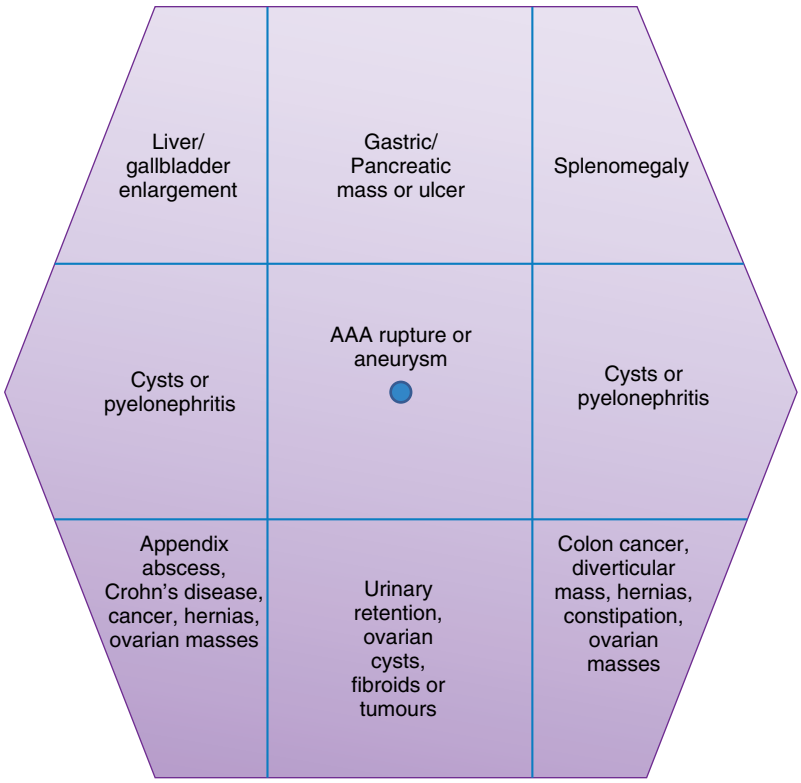


Figure 1.1.7 Location of palpable abnormalities.

Box 1.1.4 Characterising a Lump

- Site
- Size
- Shape
- Solitary
- Skin
- Tenderness
- Temperature
- Tethered/mobility
- Consistency
- Firmness
- Associated lymphandenopathy

Box 1.1.5 Guarding

- Throughout palpation, feel for voluntary or involuntary guarding (tensing) of the abdominal wall muscles
- In voluntary guarding the patient flexes due to pain
- In involuntary guarding, the abdominal muscles contract as a reflex due to inflammation of the peritoneum

Specific Organomegaly

- Palpate for enlarged organs during deep inspiration by the patient
- This can be difficult in patients with limited communication or who are in severe pain
- Start at the right iliac fossa (RIF) and move towards the right (liver) and left (spleen) hypochondria

Liver

- A palpable liver is not always a sign of liver disease
- Normal variant, especially in children and thin adults, e.g. Riedel's lobe
- A pulsatile liver may be found in tricuspid regurgitation

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

Box 1.1.6 Palpating the Liver

- Located in the right upper quadrant (RUQ) of the abdomen
- Normally sits between the fifth rib and costal margin
- Place your right palm firmly on the abdomen at the RIF (Figure 1.1.4)
- With each expiration, move your hand towards the RUQ; as the patient inspires, keep your hand still and feel for the liver edge against your hand
- If palpable, note the number of finger-breaths below the costal margin, whether the surface is smooth or nodular, whether it is soft or hard, and whether tender

Box 1.1.7 Causes of Hepatomegaly ΔΔ

1. Hepatitis:
   - Infections (e.g. viral hepatitis A-E, EMV, CMV, HIV)
   - Autoimmune
2. Alcoholic liver disease (ALD)
3. Non-alcoholic fatty liver disease (NAFLD)
4. Neoplastic
   - Metastases
   - Hepatocellular carcinoma (HCC)
5. Infiltrative
   - Amyloidosis
   - Sarcoidosis
6. Metabolic
   - Glycogen storage disorders
   - Haemochromatosis
7. Haematological
   - Leukaemia
   - Lymphoma
   - Haemolytic anaemia
8. Other
   - Congestive cardiac failure (CCF)
   - Cysts or abscesses
   - Primary biliary cholangitis (PBC)
   - Budd–Chiari syndrome

Spleen

Box 1.1.8 Palpating the Spleen

- In contrast to a palpable liver, a palpable spleen is always pathological
- Located superior to the left upper quadrant (LUQ) of the abdomen, beneath the 9th to the 11th ribs
- Place your right hand in RIF (Figure 1.1.5)
- With each expiration, move your hand towards the LUQ; as the patient inspires, keep your hand still and feel for an edge against your hand
- You can place your other hand beneath the patient's left flank and ask the patient to roll slightly towards you to accentuate any mass
- If palpable, note the number of finger-breaths below the costal margin, whether the surface is smooth or nodular, whether it is soft or hard, and whether any tenderness
- The mass should move with the respiratory cycle
- The mass may have a notch to it

Box 1.1.9 Causes of Splenomegaly ΔΔ

1. Haematological
   - Lymphoma
   - Leukaemia
   - Myeloproliferative
2. Infection:
   - TB
   - Malaria
   - Leishmaniasis
   - Schistosomiasis
3. Portal hypertension
4. Autoimmune
   - Systemic lupus erythematosus (SLE)
   - Felty's syndrome
5. Infiltrative disorders
   - Sacroidosis
   - Gaucher's disease

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

Table 1.1.7 Other masses palpable during an abdominal examination

Finding	Condition
1. Ballotable kidneys	Autosomal dominant polycystic kidney disease (ADPKD)/simple cyst / ■
2. Palpable + pulsatile epigastric/umbilical mass	Abdominal aortic aneurysm (AAA)
3. Suprapubic mass	Palpable bladder (urinary retention)
4. RIF mass	TB ileitis / ■ / ■/faeces
5. Left iliac fossa (LIF) mass	■ / diverticular mass/faeces

Shifting Dullness

- Identifies the presence of ascites (fluid in the peritoneal cavity)

Box 1.1.10 Examination Technique for Shifting Dullness

- Percuss laterally from the umbilicus away from you, noting any change in resonance
- When you reach an area of dullness towards the flanks, keep your finger on the site and ask the patient to turn towards you and lie on their side
- Allow up to 30 s before percussing again
- If the area of dullness has become resonant then shifting dullness is present

Auscultation

- Continue to listen for at least 2 minutes before concluding bowel sounds are absent
- Consider paralytic ileus or peritonitis in the case of absent bowel sounds

Table 1.1.8 Additional sounds heard on auscultation

Location	Extra sounds	Cause
Variable	Tinkling or high pitched bowel sounds	Intestinal obstruction
Above the umbilicus	Aortic bruits	AAA/superior mesenteric artery stenosis
2–3 cm laterally above the umbilicus	Renal artery bruits	Renal artery stenosis
Over the liver	Hepatic bruits	■

To Complete the Examination

Examination of Hernia Orifices

Box 1.1.11 Hernias

- A hernia is the protrusion of tissue through the wall of a cavity
- Common finding in abdominal examination but it is important to exclude serious complication of obstruction or strangulation
- Abdominal hernias are often caused by a weakness in the abdominal wall or area of previous surgical excision
- When a patient contracts the abdominal wall muscles, coughs, sneezes or strains, the hernias become more visible

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

Box 1.1.12 Hernia Examination

- Examine the groin while the patient stands upright
- Look for any visible masses within the scrotum, inguinal and femoral canals
- Look again while you ask the patient to cough (making the hernia more visible)
- Ask the patient to lie down and inspect for abdominal hernias
- In the groin, if a bulge is identified, palpate it and identify whether the hernia is femoral or inguinal
- Ask the patient to try and reduce the hernia themselves; if they are unable to do this, press two fingers over the hernia and gently try to reduce it
- Examine for other hernias, especially bilaterally in the groin
- Feel for a cough impulse and auscultate for bowel sounds over the hernia
- Most hernias are reducible but some are irreducible and permanently displaced from their correct anatomical location:
  1. **Incarcerated hernia:** a hernia that is irreducible
  2. **Obstructed hernia:** incarcerated + evidence of bowel obstruction – pain, vomiting, constipation, distension; requires immediate investigation and surgical team review
  3. **Strangulated hernia:** incarcerated + evidence of compromise of bowel loop and impending necrosis – exquisite pain; requires immediate investigation and surgical team review

Rectal Examination

- Position the patient on their side facing away from you
- Ask them, as much as possible, to pull their knees up towards their chest, and relax
- Inspect the anus externally (skin tags/fistulae/external haemorrhoids)
- Insert index finger
- Feel for sphincter tone and ask the patient to squeeze down on your finger
- Rotate finger anteriorly and palpate prostate or cervix
- Assess for stool (soft/impacted) or masses
- On removing your finger, examine the glove for stool (consistency, colour) and evidence of blood or mucus

Box 1.1.13 Maintaining Dignity During Rectal Examination

- Ensure to consent the patient for this very personal examination and communicate exactly what the examination will involve
- A chaperone will be required who should ideally be the same sex as the patient; make sure that this is also explained and consented. Familiarise yourself with up-to-date GMC guidance
- Cultural differences should be respected – ask about this if unsure
- Ensure environment is appropriate – curtains drawn, privacy sign, locked door

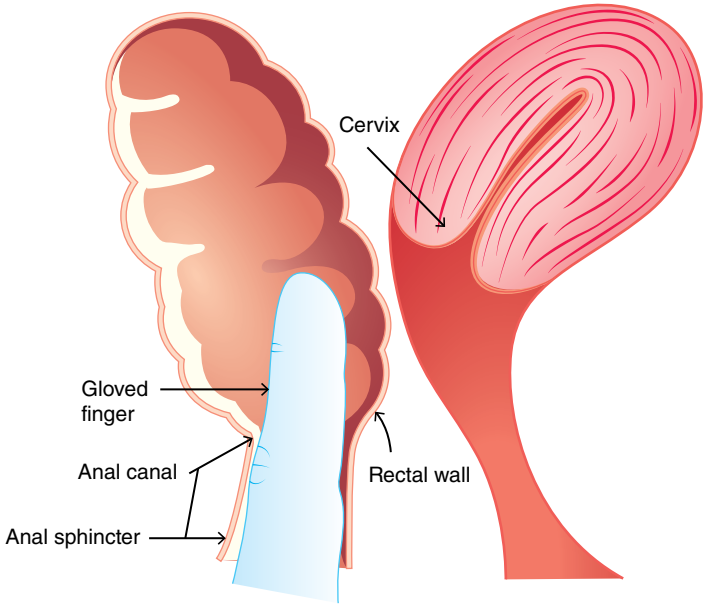


Figure 1.1.8 Palpable anatomy during a female rectal examination.

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

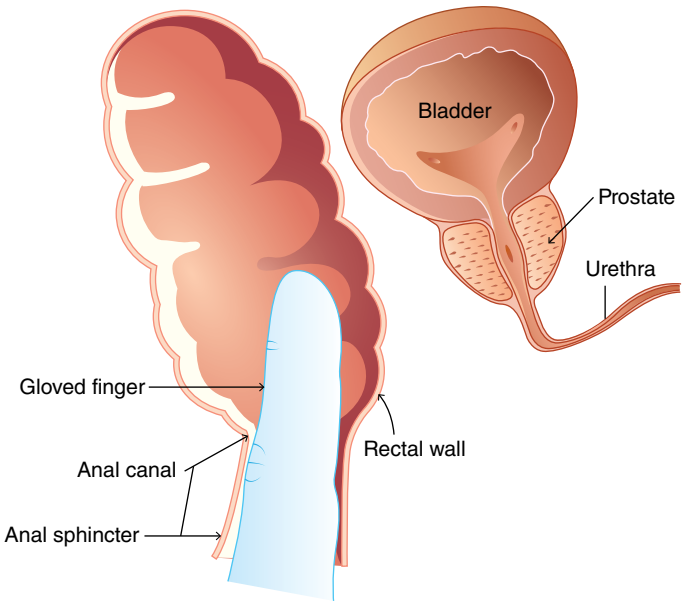


Figure 1.1.9 Palpable anatomy during a male rectal examination.

1.1.5 HOW TO PRESENT YOUR FINDINGS

Safety First Approach

Details

- Give initial overview of how patient looks, e.g. well vs unwell
- Comment on positive and relevant negative findings that can eliminate serious conditions
- Give a potential diagnosis after presenting findings and always offer a differential

Example

I examined a 52-year-old gentleman. He was alert and comfortable at rest and from the end of the bed I noted no relevant medications or therapies such as oxygen. On inspection of the hands, there was palmar erythema but no evidence of track marks or excoriations. There was no lymphadenopathy in the neck or scleral icterus.

On examination of the abdomen, it was soft and non-tender throughout. A fullness was present in his RUQ and on further characterisation there was a liver edge palpable 2 cm below the costal margin. This was smooth and non-tender. There were no other masses and no shifting dullness.

In conclusion, this patient presents with a palpable liver edge – likely hepatomegaly – and peripheral stigmata suggestive of CLD. However, my differential diagnosis would include other causes of an enlarged liver, including malignancy through spread of a gastrointestinal (GI) cancer or cardiac failure.

Ward-Based Presenting

- Often involves other elements to consider – concise and thorough history, investigations that have been sanctioned (and their results), response to therapy and discharge planning
- Present your findings using SBAR to be efficient
- Especially useful in communicating time-critical information, e.g. patients with an 'acute abdomen' or those who have deteriorated
- Trajectory (response to therapy) becomes much easier to observe

1. Chronic liver disease (CLD) ■; 2. Alcohol withdrawal ■; 3. Viral hepatitis ■; 4. Inflammatory bowel disease (IBD) ■; 5. Malignancy ■

1.1.6 EPONYMOUS SIGNS AND SYMPTOMS

Table 1.1.9 Eponymous signs and symptoms

Eponym	Comments
Cullen's sign	Bruising around the umbilicus, suggest retroperitoneal haemorrhage Typically secondary to acute pancreatitis
Grey Turner's sign	Bruising around the flanks, suggests retroperitoneal haemorrhage
Murphy's sign	Ask patient to take deep breaths as you palpate the RUQ As the liver and gallbladder move down with inspiration, pain will be elicited if there is inflammation A positive sign occurs when the discomfort causes termination of the inspiration Only positive if the corresponding sequence on the LUQ is negative Suggests cholecystitis (sensitive but not specific)
McBurney's point	One third of the distance from the right anterior superior iliac spine to the umbilicus Tenderness at this point may indicate appendicitis (see Box 1.1.12)
Rovsing's sign	Palpation of the LIF causes pain in the RIF (may indicate appendicitis)
Troisier's sign	Enlarged/hardening of Virchow's node strongly associated with intra-abdominal malignancy
Virchow's node	Lymph node in the left supraclavicular fossa, common point of lymphatic drainage from the abdomen

Box 1.1.14 The Role of McBurneys Point in Appendicitis

- Tenderness in the area of **McBurney's point** is not caused by direct irritation of the appendix
- Indicates that the peritoneum, which is in contact with the appendix, has become inflamed
- This is a late stage in appendicitis and can give warning that the appendix is at risk of rupture