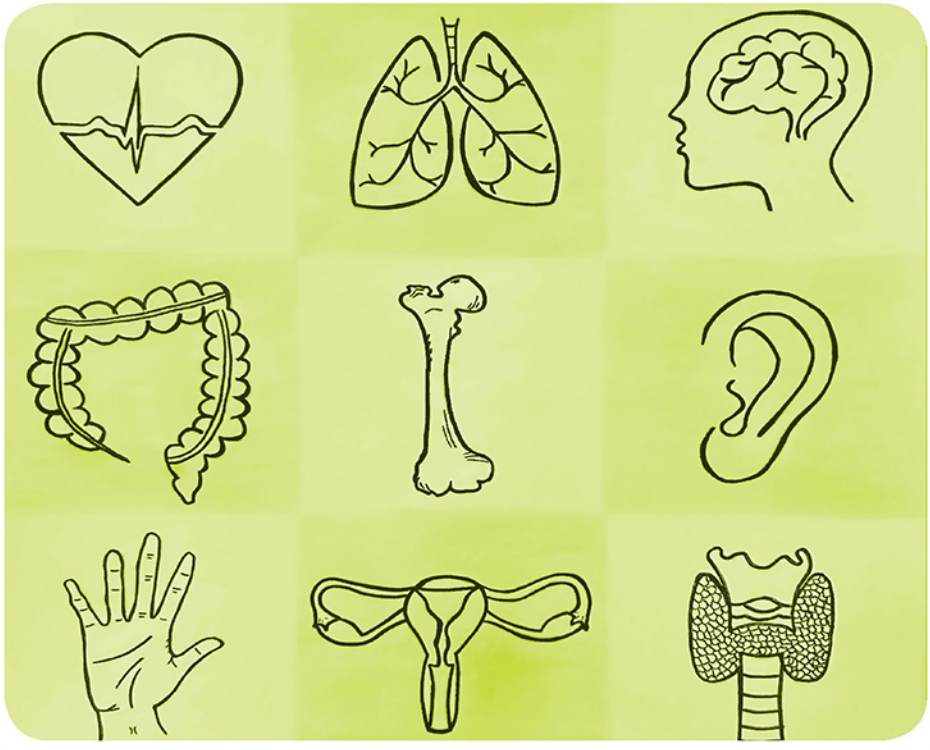
Essential Clinical Examinations for Finals and MRCS

35 Examinations for Medicine and Surgery

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Foreword by
Stephen McDonnell



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Chapter 4

Gastroenterology examination

Part I Abdominal examination

Part II Hernia examination

Part III Rectal examination

Part IV Stoma examination

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Part I

Abdominal examination

Introduction

The abdominal examination is one of the most commonly assessed examinations during objective structured clinical examinations (OSCEs). It is applicable to both medicine and surgery, and thus present during both undergraduate and postgraduate medicine and surgical examinations. Patients may present with a variety of symptoms ranging from pain to a change in bowel habit, and thus it is an opportunity to elicit both acute and chronic pathological signs.

To begin:

- Wash your hands
- Introduce yourself (full name)
- Ensure a chaperone is present and introduce them (full name)
- Confirm patient's details (full name and date of birth)
- Briefly explain the examination to the patient
- Consent patient for examination
- Expose the patient adequately while ensuring dignity and comfort
  - The patient should be exposed from the waist up
- Position patient appropriately
  - Sitting up on the examination couch at approximately 45° is optimum
- Check for any pain and ask whether the patient needs to pass urine before beginning

Inspection

- Around the patient/bedside:
  - For paraphernalia of urological or abdominal disease such as:
    - Catheter
    - Medications, e.g. hormone modulators
    - Enteral feeding tubes
    - Drains
    - Vomit bowl
- Of patient:
  - General inspection:
    - Nutritional status
    - Dehydration
    - Cachexia

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Hands

- Inspection:
  - Palm:
    - Colour:
      - Erythema
      - Pale
    - Dupuytren's contracture:
      - More common in elderly alcoholic patients
  - Nail changes:
    - Clubbing:
      - An increase in soft tissue at the nail base causing a decrease in angle between the nail bed and the nail itself (the Lovibond angle)
      - *Associated with a variety of conditions which can be remembered in three groups:*
        - Cardiac – 'ACE'
          - **A**trial myxoma
          - **C**yanotic congenital heart disease
          - **E**ndocarditis
        - Gastrointestinal – 'MILC'
          - **M**alabsorption
          - **I**nflammatory bowel disease
          - **L**ymphoma
          - **C**irrhosis
        - Respiratory – 'MCFAB'
          - **M**esothelioma
          - **C**ystic fibrosis or cancer
          - **F**ibrosis
          - **A**bscess
          - **B**ronchiectasis
    - Koilonychia – iron deficiency
    - Leuconychia – hypoalbuminaemia
    - Terry's nails
      - Brown discolouration of nail adjacent to fingertip
      - Seen in chronic liver disease and congestive cardiac failure
  - Tremor:
    - Ask patient to close eyes and with hands out in front of them
      - **Fine tremor** associated with alcoholism
    - Ask patient to cock their wrists back and hold that position
      - Flapping tremor ('asterixis') is a jerking hand movement associated with loss of posture caused chronic liver disease

Wrists

Perform the following on both wrists, comparing each side:

- Palpation:
  - Radial pulse:
    - Character, strength, pace, and rhythm

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Arms

Perform the following on both arms, comparing each side:

- Inspection:
  - Skin:
    - Scars
    - Excoriation
    - Tattoos
    - Colour – erythema and bruising
    - Spider naevi
    - Injection marks suggestive of recreational drug use
  - Fistulae

Face

- Inspection:
  - Eyes:
    - Xanthelasma
    - Conjunctival pallor (anaemia) – ask patient to pull down on lower eyelids and look up
    - Scleral icterus (jaundice) – ask patient to pull up on upper eyelids and look down
    - Kayser–Fleischer rings
  - Mouth:
    - Dental hygiene (poor dental hygiene is often the cause of infective endocarditis)
    - Glossitis
    - Angular stomatitis (iron, folate or vitamin B12 deficiency)
    - Cheilosis (vitamin B deficiency)
    - Smell breath:
      - *Fetor hepaticus (sweet smell): Liver failure*
      - Uraemic smell
      - Smell of alcohol
    - Aphthous ulcers (inflammatory bowel disease and coeliac disease)

Neck

- Inspection:
  - Jugular venous pressure (JVP):
    - This indirectly indicates central venous pressure because there is a continuous column of blood down the internal jugular vein down to the right atrium
    - Method:
      - It is important that the patient is supine at 45°
      - Ask the patient to turn their head to their left
      - Inspect between the two heads of sternocleidomastoid for the internal jugular vein (IJV)
        - This can be differentiated from the artery due to its double wave pulsation

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        - Comment on waveform
        - Comment on vertical height of the peak of the waveform above the sternal angle
    - Exaggerate with hepatojugular reflux
- This can be offered if the JVP is challenging to determine, but in the OSCE setting the examiner may advise against this
- Ensure patient has no abdominal discomfort
- Deep palpation in right hypochondrium
  - In the hypervolaemic patient, the JVP will be raised >4 cm

JVP waveform

- A wave – atrial contraction (absent in AF)
- C wave – ventricular contraction (not seen)
- X descent – atrial relaxation
- V wave – atrial venous filling
- Y descent – ventricular filling

Position: Patient sat up in bed.

- Palpation:
  - Assess for cervical lymphadenopathy in this position while the patient is leaning forwards, explaining that you are about to palpate about their neck
    - Systematically, palpate the neck triangles for the following groups of lymph nodes:
      - Pre-auricular
      - Post-auricular
      - Submental
      - Submandibular
      - Deep cervical (anterior to sternocleidomastoid)
      - Posterior cervical (posterior to sternocleidomastoid)
      - Supraclavicular:
        - Virchow's node is associated with gastrointestinal malignancy
    - Assess for tenderness or enlargement

Posterior trunk

- Inspection:
  - Surgical scars, e.g. nephrectomy
  - Spider naevi
    - More than 3 is suggestive of chronic liver disease

Position: Patient lying down supine in bed in neutral position

Chest

- Inspection:
  - Acanthosis nigricans (axilla)
    - Suggestive of diabetes mellitus and some gastrointestinal malignancies
  - Spider naevi

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- Gynaecomastia
  - Can be associated with chronic liver disease

Abdomen

- Inspection:
  - Swelling:
    - Abdominal distension
    - Discrete lumps/swellings
  - Hernia
  - Visible pulsations/movements
  - Skin:
    - Spider naevi
    - Surgical scars
    - Jaundice
    - Bruising
      - Cullen's sign:
        - Peri-umbilical bruising
        - Associated with retroperitoneal bleeding
      - Grey Turner's sign:
        - Bruising in flanks
        - Associated with retroperitoneal bleeding
  - Caput medusae:
    - Distended veins adjacent to the umbilicus
    - Associated with portal hypertension
  - Stoma

Scar	Access for:
Chevron	Stomach, hepatobiliary structures and adrenal glands
Lanz	Appendix
Laparoscopic	Most abdominal viscera including bowel
Mcburney	Appendix
Midline laparotomy	Most abdominal viscera including bowel
Paramedian	Kidneys, bowel, and adrenal glands
Pfannenstiel	Bladder and uterus
Rutherford Morrison	Kidneys and retroperitoneal structures
Subcostal	Hepatobiliary structures

- Palpation:
  - Light palpation:
    - The abdomen can be divided into nine areas (right hypochondrium, epigastric region, left hypochondrium, right lumbar region, umbilical region, left lumbar region, right iliac fossa, suprapubic region, and left iliac fossa)

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    - Palpate lightly in each of the nine areas for tenderness (observe the patient's face whilst you are doing this for signs of discomfort)
    - Assess for guarding and rebound tenderness
  - Deep palpation:
    - Palpate more deeply in each of the nine areas feeling for any masses/lumps
  - Murphy's sign:
    - Palpate the right hypochondrium near the tip of the 9th rib
    - Ask the patient to take a deep breath in
    - Pain on inspiration in the right hypochondrium is suggestive of acute cholecystitis
  - Rovsing's sign:
    - Palpate the left iliac fossa
    - If the patient reports pain in the right iliac fossa this is suggestive of appendicitis
  - Liver edge:
    - Palpate for the liver edge
    - Start in the right iliac fossa and press down when the patient breathes in (inspiration)
    - Repeat these steps, moving your hand a few centimetres more proximal each time towards the right hypochondrium
    - If liver edge is palpable then this is suggestive of hepatomegaly
  - Spleen edge:
    - Palpate for the spleen edge
    - Start in the right iliac fossa and press down when the patient breathes in (inspiration)
    - Repeat these steps, moving your hand a few centimetres more proximal each time towards the left hypochondrium
  - Kidneys:
    - Ballot the kidneys by placing your hands either side of the lumbar regions
    - If enlarged, this may suggest disorders such as polycystic kidney disease
  - Abdominal aorta:
    - Palpate for abdominal aorta
      - Locate a position midway between the xiphisternum and umbilicus
      - Place the pulps of your index, middle, and ring fingers opposite each other and press down feeling for the pulse
        - *Normal:* Pulsatile only
        - *Abdominal aortic aneurysm:* Pulsatile and expansile
- Percussion:
  - Liver borders
  - Spleen border
  - Ascites:
    - Percuss the centre of the abdomen
    - Continue to percuss as you move away from yourself until the percussion note changes from resonant to dull
    - Keep your finger on this point and ask the patient to roll towards you lying in the lateral position
    - Percuss this point
      - If it is now resonant then this is suggestive of ascites (shifting dullness)

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- Auscultation:
  - Bowel sounds
  - Bruits
    - Abdominal aorta:
      - Midway between the xiphisternum and umbilicus
    - Renal arteries (bilaterally)
      - Superolateral to the umbilicus

Lower limbs

- Inspection
  - Swelling
  - Skin
    - Pyoderma gangrenosum (inflammatory bowel disease)
- Palpation
  - Pitting oedema
    - Comment on the extent of oedema

Conclusion

- Thank patient and ensure they are comfortable
- Ask patient to redress
- 'To complete my examination I would':
  - Take a full history from the patient
  - Perform a rectal examination
  - Examine hernial orifices, perineum, external genitalia and stoma (if appropriate)
- Present your findings

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Mark scheme

Introduction	N	I	S	O
Inspection – around patient/bedside	N	I	S	O
Inspection – of patient	N	I	S	O
Hands: • Inspection	N	I	S	O
Wrists: • Palpation	N	I	S	O
Arms: • Inspection	N	I	S	O
Face: • Inspection	N	I	S	O
Neck: • Inspection • Palpation	N	I	S	O
Posterior trunk: • Inspection	N	I	S	O
Chest: • Inspection	N	I	S	O
Abdomen: • Inspection • Palpation • Percussion • Auscultation	N	I	S	O
Lower limbs: • Inspection • Palpation	N	I	S	O
Conclusion	N	I	S	O
(N, not performed; I, inadequately performed; S, satisfactory; O, outstanding)				

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Part II

Hernia examination

Introduction

A hernia refers to an abnormal protrusion of tissue and/or organ beyond the borders of a cavity in which it is usually contained. They commonly present in the abdomen and their examination may be offered during a formal comprehensive abdominal examination. However, in most OSCEs, they exist in isolation as a short station.

To begin:

- Wash your hands
- Introduce yourself (full name)
- Ensure a chaperone is present and introduce them (full name)
- Confirm patient's details (full name and date of birth)
- Briefly explain the examination to the patient
- Consent patient for examination
- Expose the patient adequately while ensuring dignity and comfort
  - The abdomen, bilateral groins and external genitalia should be visible
  - A blanket may be offered to cover the external genitalia when not being examined
- Position patient appropriately
  - Begin with the patient standing up in the anatomical position

Inspection

- Around the patient/bedside
  - For paraphernalia of urological or gastrointestinal disease such as:
    - Catheter
    - Medications, e.g. hormone modulators
    - Enteral feeding tubes
    - Drains
- Of patient:
  - General inspection:
    - Malnourished
    - Dehydration
  - Abdomen, groins and external genitalia
    - Inspect anteriorly and laterally
      - Swellings/lumps
      - Skin:
        - Scars
        - Colour – erythema

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Inspection – hernia

- Ask patient to cough
  - Observe abdomen, groins and external genitalia for any obvious further protrusion of lump

Position: Lying down supine on bed in a neutral position

- Inspect hernia
  - Site:
    - Try to describe in relation to scars and/or anatomical landmarks
    - Inguinal hernia: Superior to pubic tubercle
    - Femoral hernia: Inferior to pubic tubercle
  - Size
  - Skin:
    - Colour
    - Scars
  - External genitalia
    - Scrotum
      - Appearance of scrotal lump: Indirect inguinal hernia

Palpation

- Temperature:
  - Assess the temperature of the lump and surrounding skin using the dorsum of your hands
- Tenderness:
  - Palpate for tenderness
  - *Tender:* Likely strangulated hernia
- Anatomical landmarks:
  - Anterior superior iliac spine
  - Pubic tubercle
  - Line of the inguinal ligament
  - Deep inguinal ring
  - Superficial inguinal ring

Mid-point of the inguinal ligament versus mid-inguinal point

The mid-point of the inguinal ligament and mid-inguinal point must not be confused as they are clinically used to demarcate different anatomical landmarks

- Mid-point of the inguinal ligament:
  - The inguinal ligament arises from the anterior superior iliac spine and inserts on the ipsilateral pubic tubercle
  - Thus, the mid-point of the inguinal ligament can be palpated halfway between these two landmarks
  - One inch above this point, lies the deep inguinal ring
- Mid-inguinal point:
- The mid-inguinal point can be palpated halfway between the anterior superior iliac spine and pubic symphysis
- The femoral pulse can be felt distal to this point

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Essential Clinical Examinations for Finals and MRCS

35 Examinations for Medicine and Surgery

This book describes 35 clinical examinations divided into chapters according to organ systems. These are covered in the style of the often-used "OSCE" (Objective Structured Clinical Examination). This book is uniquely placed in being relevant for both postgraduate junior doctors preparing for the Membership of the Royal College of Surgeons (MRCS) examinations, as well as undergraduate medical students aiming for distinctions in their medical finals.

George JM Hourston studied medicine at Gonville and Caius College, University of Cambridge. He undertook an Academic Foundation Programme in the Lister Hospital, Stevenage, and Addenbrooke's Hospital, Cambridge. A keen medical educator, Mr Hourston completed a Postgraduate Certificate in Medical Education alongside his Foundation Year 1 training. He has been a supervisor of anatomy at Gonville and Caius College for 7 years. Mr Hourston is a Member of the Royal College of Surgeons of England. Currently a core surgical trainee, Mr Hourston, has been awarded an NIHR Academic Clinical Fellowship in Trauma and Orthopaedic Surgery at the University of Cambridge to pursue research while on the Specialist Registrar training programme in the East of England.

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