

Undergraduate Radiology Sample Questions

April 2012

The following examples are offered of questions that might be used to assess undergraduate radiology. There are 3 different styles:

- An OSCE type format -The Doctor as Practitioner
- A Single Best Answer format (SBA)
- An extended matching choice type format (EMQ)- the Doctor as a professional or the Doctor as Scholar and Scientist

OSCE question 1



Q: What abnormality can be seen in this 65 year old man with abdominal pain?

A: Large bowel dilatation/ obstruction

Wrong answers include small bowel obstruction and/or perforation or Pneumoperitoneum

Q: What is the most likely cause of this abnormality?

A: Colonic carcinoma

Wrong answers include volvulus, diverticular disease, hernias, ileus or adhesions

Q: Is there a perforation here?

A: No

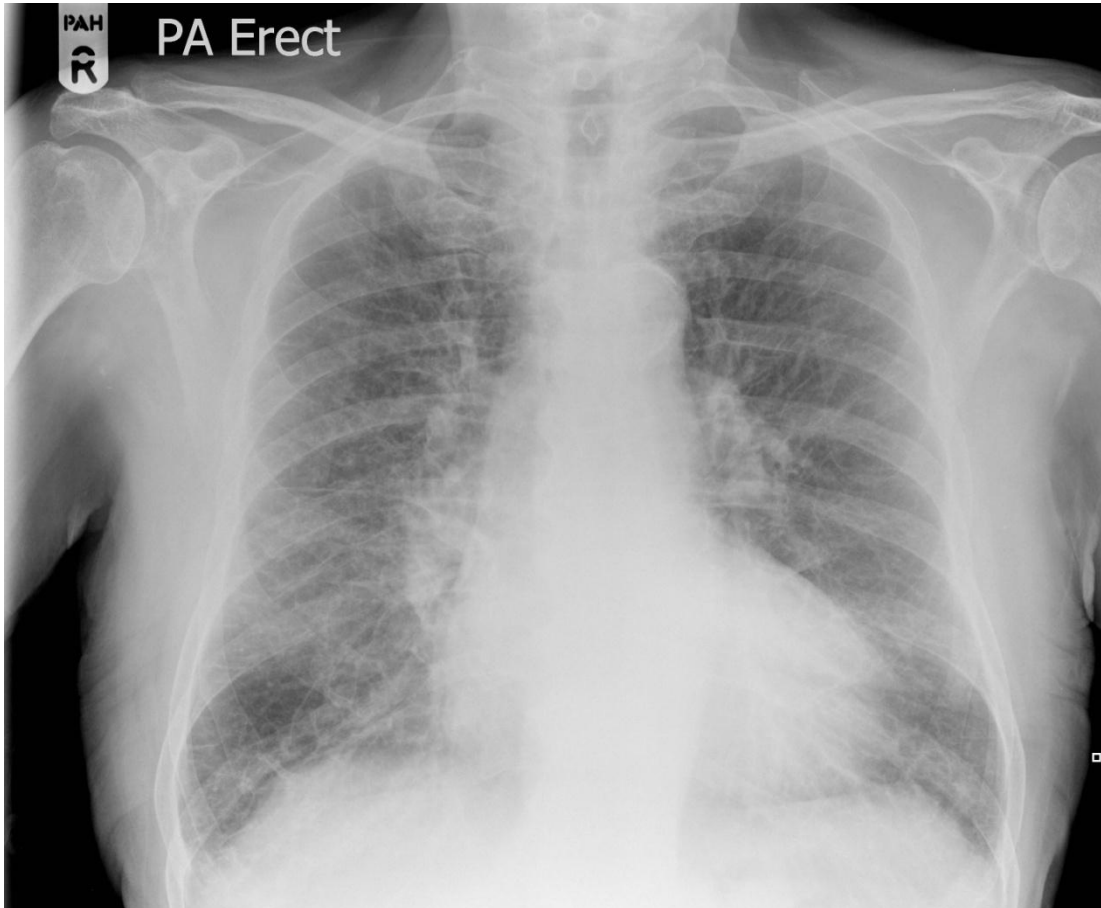
SBA style question for the above image

What abnormality is seen on the abdominal radiograph? Please select one of the following diagnoses.

- A) Pneumoperitoneum
- B) Toxic megacolon
- C) Paralytic ileus
- D) Small bowel dilatation
- E) Large bowel dilatation

Correct answer E

OSCE question 2



History: A 69 year old man with shortness of breath

Q: What imaging abnormalities can be seen in this radiograph?

A: Cardiomegaly, increased upper lobe vascular marking, sub pleural septal line thickening (Kerly B lines), patchy lung opacities.

Q: What is the most likely cause of this abnormality?

A: Cardiac Failure

Q: What is the most appropriate imaging follow up technique?

A: A repeat chest radiograph may be helpful after a course of treatment, or if patient's symptoms progresses.

Single best answer questions.

1. A 65 year old man presents with acute large bowel obstruction, rectal bleeding and change in bowel habit. What is the most likely cause?
- A) Inguinal hernia
 - B) Adhesions
 - C) Volvulus
 - D) Haemorrhoids
 - E) Colonic carcinoma

Correct answer E

2. A 65 year old woman presents with abdominal pain and vomiting. She has had an appendicectomy 20 years ago. Small bowel dilatation is observed. What is the most likely cause?
- A) Inguinal hernia
 - B) Adhesions
 - C) Volvulus
 - D) Haemorrhoids
 - E) Colonic carcinoma

Correct answer B

3. A 4 day old neonate presents with bile stained vomiting. Gastric dilatation is seen on an abdominal radiograph. What is the most likely cause of these abnormalities?
- A) Inguinal hernia
 - B) Adhesions
 - C) Volvulus
 - D) Haemorrhoids
 - E) Colonic carcinoma

Correct answer C

4. A 35 year old female is highly suspected of pulmonary embolism. A CT pulmonary angiography (CTPA) is considered. Which of the following risks is **not** relevant?
- A) Allergic reaction to media contrast
 - B) Pneumothorax
 - C) Renal failure
 - D) Increased risk of breast cancer
 - E) Radiation damage to bone marrow

Correct answer: B

5. An MRI of brain is requested for a patient suspected of metastatic cancer. Which of the following pieces of clinical information is a contraindication to MRI?
- A) Total hip replacement
 - B) History of previous allergic reaction to iodinated contrast agents
 - C) Sterilization clips
 - D) Previous spinal surgery
 - E) History of a pacemaker

Correct answer: E

6. You are a foundation doctor on a respiratory ward and you admit a 67 year old woman for a CT guided lung biopsy to confirm suspected lung cancer. You are asked to obtain the patients consent for the procedure but are unsure of the complications when asked by the patient. What is the most appropriate next action?
- A) Tell her that verbal consent is all that is needed
 - B) Ask her to sign the form but leave the complications as blank
 - C) Ask the radiologist performing the procedure to obtain consent
 - D) Send her to the radiology department without further explanation
 - E) Give a standard list of complications such as pain and bleeding

Correct answer: C

Extended Matching Question 1

There are 5 clinical scenarios. From the options given below you must select one option as the most likely diagnosis. Each diagnosis can be used once, more than once or not at all.

	Scenario	Answer
1	A 4 day old child with bile stained vomiting and gastric dilatation	A
2	A 65 year old man who presents with rectal bleeding and large bowel dilatation	C
3	A 65 year old woman presents with abdominal pain and small bowel dilatation 20 years after a appendicectomy.	B
4	A 49 year old woman with rheumatoid arthritis presents with acute abdominal pain and free air is observed under the diaphragm on a CXR	F
5	A 49 year old woman presents with abdominal pain. An abdominal radiograph shows small bowel dilatation and air in the biliary tree	E

Diagnoses available for EMQ 1:

- A) Volvulus
- B) Adhesions
- C) Colonic carcinoma
- D) Haemorrhoids
- E) Gallstone ileus
- F) Perforated peptic ulcer
- G) Meckels diverticulum
- H) Inguinal hernia

Extended Matching Question 2

From the clinical scenarios given below, please select the most appropriate test to confirm the diagnosis. Each option can be used once, more than once or not at all.

	Scenario	Answer
1	A 72 year man who becomes acutely short of breath after a total hip replacement. Pulmonary embolism is suspected.	E
2	A 65 year old woman who becomes short of breath and is suspected of having acute left ventricular failure	A
3	A 42 year old woman with rheumatoid arthritis who develops acute abdominal pain. A perforated peptic ulcer is suspected	A
4	A 22 year old woman develops acute colicky abdominal pain in the right upper quadrant and is suspected to have gallstones	C
5	A 15 year old boy develops abdominal pain 6 days after a appendicectomy. Small bowel obstruction is suspected	D

Tests available for EMQ 2:

- A) Erect PA chest radiograph
- B) Supine AP chest radiograph
- C) Abdominal ultrasound scan
- D) Supine abdominal radiograph
- E) CT of thorax with IV contrast
- F) CT of abdomen with IV contrast
- G) CT of thorax without IV contrast
- H) CT of abdomen without IV contrast