



EBIR - Clinical Case Scenario Sample Questions

Each case is composed of 4 to 6 sequential questions related to the same specific scenario.

In each case, the questions follow logically from the previous question, i.e. after the first question is answered, additional information is provided in **blue text** to facilitate the answer to the second question, and so on.

You may be asked to 1) select the best single answer, 2) select several correct answers or 3) order the answers in a specific way.

This paper has 7 cases with sequential questions.

Important note: On the day of the exam, once you advance to the next question, you will not be allowed to return to previous questions.

Case 1 - Question 1/4

MEDICAL HISTORY

- A 60-year-old man with a history of alcoholic liver cirrhosis presented to the emergency department with new onset of haematemesis. Blood pressure was 90/40 mmHg and the heart rate was 98 beats per minute.
- The haemoglobin was 8 g/dL (normal range: 11.5-16 g/dL) with normal clotting parameters and platelets. Electrolytes were also normal.
- Upper GI endoscopy showed large oesophageal varices that continued to bleed despite attempts at endoscopic treatment with band ligation and sclerotherapy.
- The patient was referred for consideration of transjugular intrahepatic portosystemic shunt (TIPS).

Which of the following scoring systems are typically used to predict this patient's survival following TIPS? Select two options only:

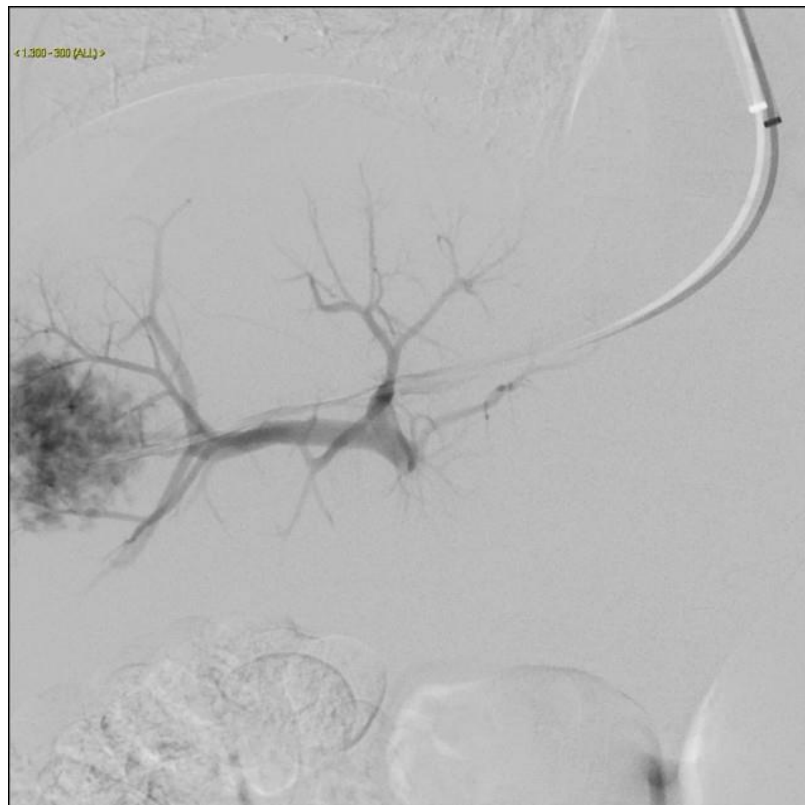
- A. Child-Pugh score
- B. European association for the study of liver disease (EASL) guideline
- C. Model for end-stage liver disease (MELD)
- D. Shock index

Case 1 - Question 2/4

MEDICAL HISTORY

- A 60-year-old man with a history of alcoholic liver cirrhosis presented to the emergency department with new onset of haematemesis. Blood pressure was 90/40 mmHg and the heart rate was 98 beats per minute.
- The haemoglobin was 8 g/dL (normal range: 11.5-16 g/dL) with normal clotting parameters and platelets. Electrolytes were also normal.
- Upper GI endoscopy showed large oesophageal varices that continued to bleed despite attempts at endoscopic treatment with band ligation and sclerotherapy.
- The patient was referred for consideration of transjugular intrahepatic portosystemic shunt (TIPS).

Following discussion with the hepatology team it was decided to perform TIPS under general anaesthesia. A right internal jugular vein access was performed and a 10 Fr. sheath and 5 Fr. Cobra catheter were advanced.



What does this procedural image show? Select one option only:

- A. Arterioportal fistula
- B. Capsular puncture and contrast extravasation
- C. Wedged hepatic venogram
- D. Wedged portal venogram

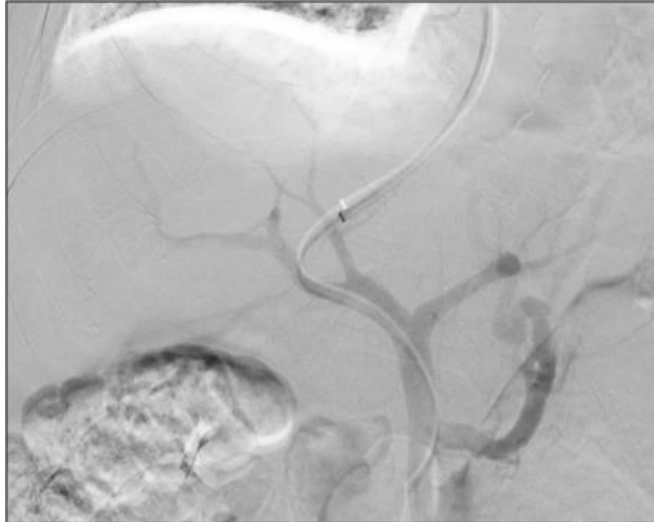
Correct Answer: C

Case 1 - Question 3/4

MEDICAL HISTORY

- A 60-year-old man with a history of alcoholic liver cirrhosis presented to the emergency department with new onset of haematemesis. Blood pressure was 90/40 mmHg and the heart rate was 98 beats per minute.
- The haemoglobin was 8 g/dL (normal range: 11.5-16 g/dL) with normal clotting parameters and platelets. Electrolytes were also normal.
- Upper GI endoscopy showed large oesophageal varices that continued to bleed despite attempts at endoscopic treatment with band ligation and sclerotherapy.
- The patient was referred for consideration of transjugular intrahepatic portosystemic shunt (TIPS).

Portal vein puncture was performed under ultrasound and fluoroscopic guidance.



Which of the following procedural steps should be completed **first**?

- A. Track dilatation
- B. Embolisation of the gastric varices
- C. Portal pressure measurement
- D. Stent placement

Which of the following procedural steps should be completed **second**?

- A. Track dilatation
- B. Embolisation of the gastric varices
- C. Portal pressure measurement
- D. Stent placement

Which of the following procedural steps should be completed **third**?

- A. Track dilatation
- B. Embolisation of the gastric varices
- C. Portal pressure measurement
- D. Stent placement

Which of the following procedural steps should be completed **fourth**?

- A. Track dilatation
- B. Embolisation of the gastric varices
- C. Portal pressure measurement
- D. Stent placement

Correct Answer: C>A>D>B

Case 1 - Question 4/4

MEDICAL HISTORY

- A 60-year-old man with a history of alcoholic liver cirrhosis presented to the emergency department with new onset of haematemesis. Blood pressure was 90/40 mmHg and the heart rate was 98 beats per minute.
- The haemoglobin was 8 g/dL (normal range: 11.5-16 g/dL) with normal clotting parameters and platelets. Electrolytes were also normal.
- Upper GI endoscopy showed large oesophageal varices that continued to bleed despite attempts at endoscopic treatment with band ligation and sclerotherapy.
- The patient was referred for consideration of transjugular intrahepatic portosystemic shunt (TIPS).

A proximal hepatic vein stenosis was demonstrated and confirmed with pressure measurements



What is the most appropriate management of this complication? Select one option only:

- A. Balloon dilatation of the stenosis only
- B. Cutting balloon venoplasty of hepatic vein stenosis
- C. Hepatic vein covered stent placement and dilatation
- D. Uncovered stent placement and dilatation

Correct Answer: C

Case 2 - Question 1/6

MEDICAL HISTORY

- A 57-year-old woman with biopsy proven colonic cancer and bi-lobar liver metastases presents with colicky abdominal pain and distension 1 week after commencing chemotherapy.

Abdominal radiographs were performed. A CT was requested.

Which imaging feature would be an absolute contraindication to placement of a colonic stent? Select one option only:

- A. Oedema of the transverse colon
- B. Presence of perforation
- C. Obstruction at the splenic flexure
- D. Presence of a colo-vesical fistula

Case 2 - Question 2/6

MEDICAL HISTORY

- A 57-year-old woman with biopsy proven colonic cancer and bi-lobar liver metastases presents with colicky abdominal pain and distension 1 week after commencing chemotherapy.

Intravenous fluids were commenced and a nasogastric tube was sited. Urgent CT of the abdomen and pelvis confirmed large bowel obstruction with no evidence of pneumoperitoneum and it was decided to place a colonic stent.

Why is colonic stent placement chosen rather than emergency colonic surgery? Select two options only:

- A. Lower mortality
- B. Lower rate of stoma formation
- C. Shorter length of intensive care stay
- D. Better rate of cancer survival

Case 2 - Question 3/6

MEDICAL HISTORY

- A 57-year-old woman with biopsy proven colonic cancer and bi-lobar liver metastases presents with colicky abdominal pain and distension 1 week after commencing chemotherapy.

Which imaging strategy would give this patient the highest chance of a technically-successful colonic stent placement? Select one option only:

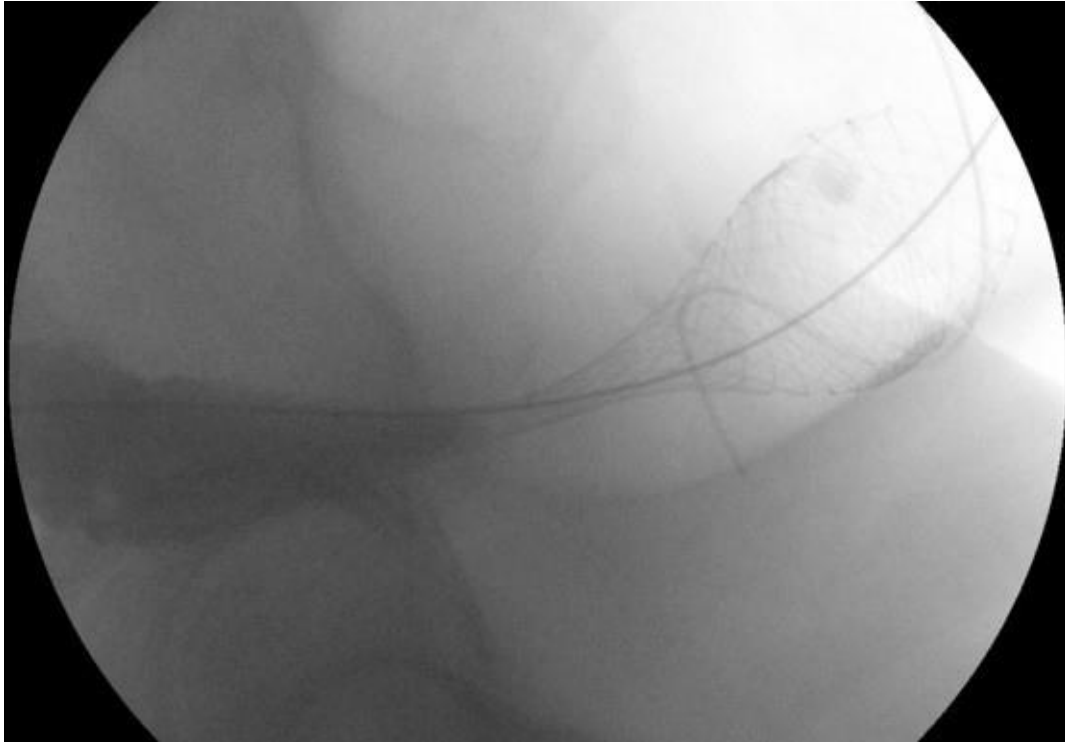
- A. Fluoroscopic guidance
- B. Endoscopic guidance
- C. Combined fluoroscopic and endoscopic guidance
- D. Fluoroscopic and cone beam CT

Case 2 - Question 4/6

MEDICAL HISTORY

- A 57-year-old woman with biopsy proven colonic cancer and bi-lobar liver metastases presents with colicky abdominal pain and distension 1 week after commencing chemotherapy.

CT showed large bowel obstruction and no evidence of pneumoperitoneum and colonic stenting was performed. A 12 cm long self-expanding metal stent (25 mm body and 30 mm flared ends) was placed across the obstructing sigmoid tumour but the central portion of the stent remained narrowed.



What is the most appropriate next action (see image)? Select one option only:

- A. Place a co-axial balloon mounted stent
- B. Perform balloon dilatation of the stent
- C. Perform a defunctioning colostomy
- D. End the procedure and monitor bowel function and vital signs

Case 2 - Question 5/6

MEDICAL HISTORY

- A 57-year-old woman with biopsy proven colonic cancer and bi-lobar liver metastases presents with colicky abdominal pain and distension 1 week after commencing chemotherapy.

The next morning (16 hours after stent placement) the patient reports multiple episodes of liquid faeces (diarrhoea) and this had prevented her from sleeping.

What is the most appropriate next action? Select one option only:

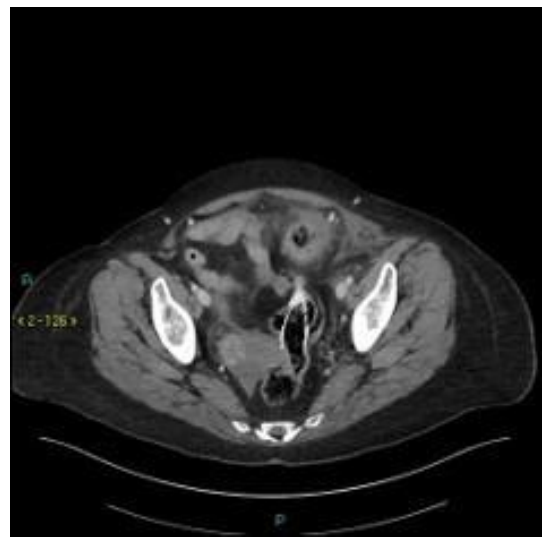
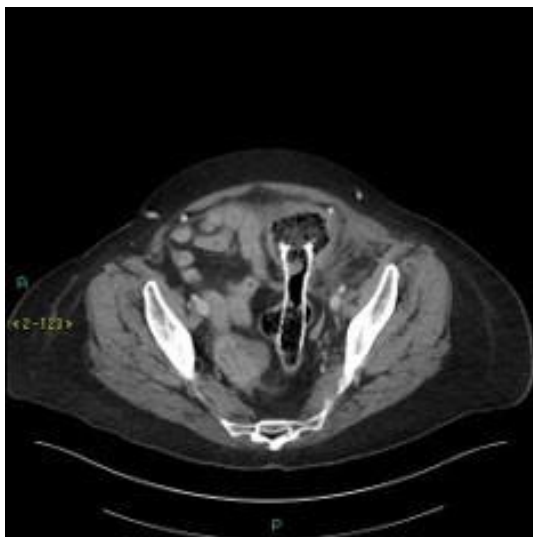
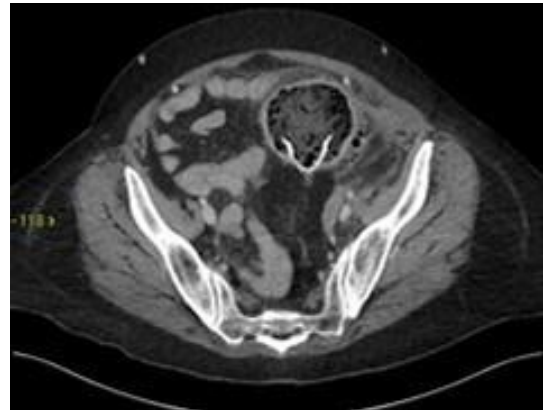
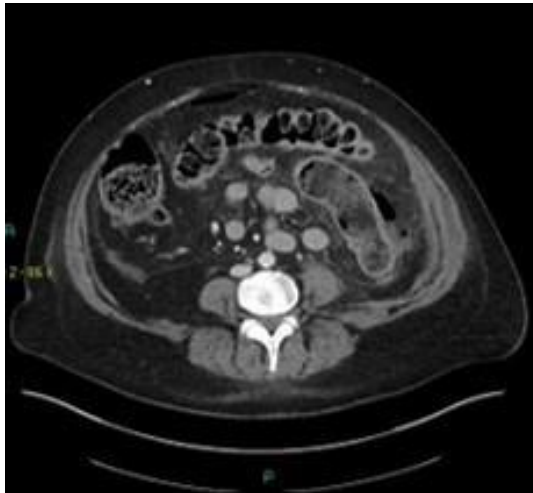
- A. Advise her that this is normal and arrange an abdominal radiograph
- B. Prescribe oral loperamide
- C. Send a stool sample for culture
- D. Isolate patient and prescribe metronidazole 500 mg intravenously

Case 2 - Question 6/6

MEDICAL HISTORY

- A 57-year-old woman with biopsy proven colonic cancer and bi-lobar liver metastases presents with colicky abdominal pain and distension 1 week after commencing chemotherapy.

Day 1 post-stent placement, her pain resolved and she was discharged home on the third day. She re-presented 3 months later with lower abdominal pain and distension and a further CT was performed (see images).



What is the most appropriate next treatment? Select one option only:

- A. Laparotomy and defunctioning stoma
- B. Gastrografin enema
- C. Extend the lower end of the stent
- D. Place a covered colonic stent

Correct Answer: A

Case 3 - Question 1/4

MEDICAL HISTORY

- A 16-year-old boy presents with painful scoliosis.
 - Spinal CT demonstrated an osteoid osteoma at the L3 vertebra.
 - Magnetic resonance imaging (MRI) was performed.
-

Which of the following MRI imaging findings are typical for osteoid osteomas? Select two options only:

- A. Bone marrow oedema
- B. Cortical thickening
- C. No contrast enhancement after gadolinium administration
- D. Marked periosteal reaction

Case 3 - Question 2/4

MEDICAL HISTORY

- A 16-year-old boy presents with painful scoliosis.
- Spinal CT demonstrated an osteoid osteoma at the L3 vertebra.
- Magnetic resonance imaging (MRI) was performed.

It was decided to treat this lesion (indicated by the arrow on the below image).



What is the most appropriate next step in managing this patient? Select one option only:

- A. Laminectomy
- B. Percutaneous microwave ablation
- C. Percutaneous radiofrequency ablation
- D. Oral analgesia

Correct Answer: D

Case 3 - Question 3/4

MEDICAL HISTORY

- A 16-year-old boy presents with painful scoliosis.
- Spinal CT demonstrated an osteoid osteoma at the L3 vertebra.
- Magnetic resonance imaging (MRI) was performed.

The patient's pain was refractory to medical treatment and he was referred for percutaneous radiofrequency ablation (RFA).



Which of the following is the most likely major complication in this patient? Select one option only:

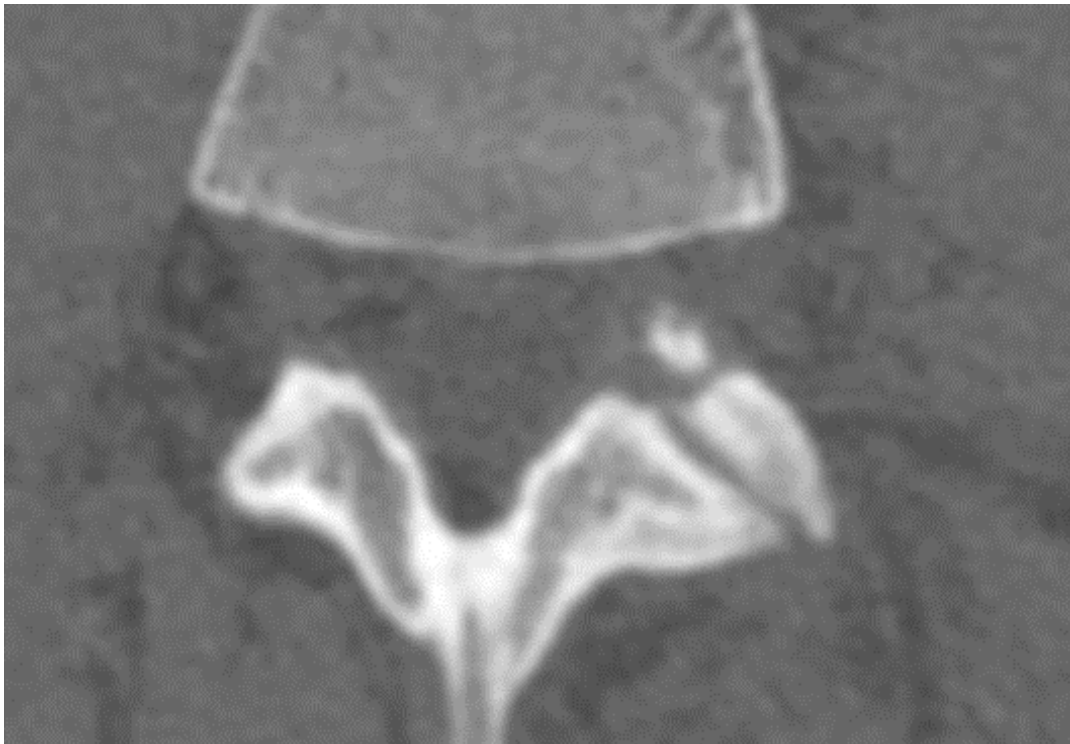
- A. Motor nerve injury
- B. Synovitis
- C. Arachnoiditis
- D. Epidural haematoma

Case 3 - Question 4/4

MEDICAL HISTORY

- A 16-year-old boy presents with painful scoliosis.
- Spinal CT demonstrated an osteoid osteoma at the L3 vertebra.
- Magnetic resonance imaging (MRI) was performed.

Additional measures for neural protection were planned.



What would be the most appropriate measure to protect from nerve root damage in this case? Select one option only:

- A. Hydrodissection with 0.9% saline injection in the epidural and foraminal space
- B. Hydrodissection with 5% dextrose injection in the epidural and foraminal space
- C. Gas dissection with CO₂ injection in the epidural and foraminal space
- D. Placement of thermocouples in the epidural and foraminal space

Correct Answer: D

Case 4 - Question 1/4

MEDICAL HISTORY

- A 33-year-old man with end-stage renal disease received a kidney transplant from a living donor.
- Six months later he presents with hypertension that is refractory to multiple drugs and progressive renal insufficiency that worsens when using Angiotensin Converting Enzyme Inhibitors.

A problem with the renal graft is suspected and a Doppler ultrasound is carried out.

Which Doppler ultrasound findings would suggest significant stenosis of the transplant renal artery? Select three options only:

- A. A peak systolic velocity >2 m/sec in the transplant renal artery
- B. Interlobar artery slow systolic rise (Tardus Parvus Waveform)
- C. Interlobar artery systolic acceleration time >0.1 seconds
- D. Aliasing in the interlobar renal arteries

Correct Answer: A, B C

Case 4 - Question 2/4

MEDICAL HISTORY

- A 33-year-old man with end-stage renal disease received a kidney transplant from a living donor.
- Six months later he presents with hypertension that is refractory to multiple drugs and progressive renal insufficiency that worsens when using Angiotensin Converting Enzyme Inhibitors.

The Doppler ultrasound showed a high-grade stenosis, confirmed on angiography.



Which of the following is the most appropriate therapeutic choice in this case? Select one option only:

- A. Covered stent placement
- B. Balloon angioplasty
- C. Primary bare stent placement
- D. Cutting balloon angioplasty

Correct Answer: B

Case 4 - Question 3/4

MEDICAL HISTORY

- A 33-year-old man with end-stage renal disease received a kidney transplant from a living donor.
- Six months later he presents with hypertension that is refractory to multiple drugs and progressive renal insufficiency that worsens when using Angiotensin Converting Enzyme Inhibitors.

A conventional angiogram after balloon angioplasty with a 7x20 mm balloon shows thrombosis of the transplant renal artery.

What are the appropriate options for this patient? Select three options only:

- A. Immediate discussion/ referral for surgical thrombectomy
- B. Suction catheter thrombectomy
- C. Repeat angioplasty
- D. Inject thrombolytic agent

Correct Answer: A, B, C

Case 4 - Question 4/4

MEDICAL HISTORY

- A 33-year-old man with end-stage renal disease received a kidney transplant from a living donor.
 - Six months later he presents with hypertension that is refractory to multiple drugs and progressive renal insufficiency that worsens when using Angiotensin Converting Enzyme Inhibitors.
-

Finally, reperfusion of the renal artery was achieved.

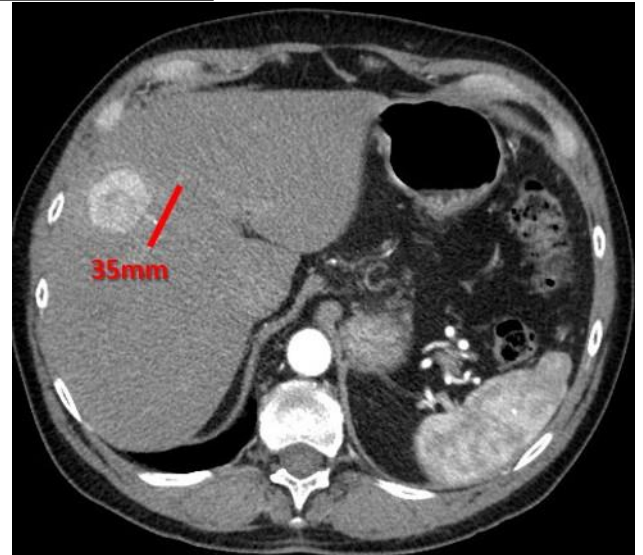
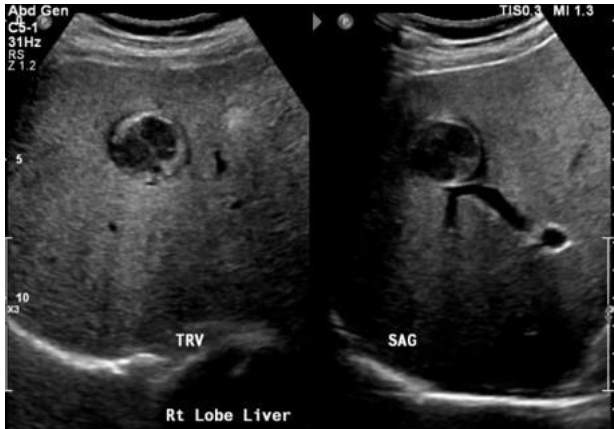
Which of the following is the most appropriate monitoring protocol for this patient at the next clinical follow up?
Select one option only:

- A. Serum Urea, Doppler ultrasound, and blood pressure measurement
- B. Serum creatinine, Doppler ultrasound, and blood pressure measurement
- C. Serum creatinine, CT angiography, and urinalysis
- D. Serum creatinine, Doppler ultrasound, and renal biopsy

Case 5 - Question 1/5

MEDICAL HISTORY

- A 77-year-old woman with a history of Hepatitis C and cirrhosis had a 35 mm hypoechoic lesion found in her right lobe of the liver on ultrasound.
- Her serum alpha-fetoprotein was 530 $\mu\text{mol/L}$ (normal value: $<10 \mu\text{mol/L}$).
- Multiphase post-contrast CT confirmed a solitary lesion in segment 8 measuring 35 mm in size, with arterial enhancement and washout on the delayed phase.



What is the most appropriate next step in this patient's management? Select one option only:

- A. Microwave ablation
- B. Multidisciplinary tumour (MDT) board discussion
- C. Percutaneous biopsy
- D. Transarterial chemoembolisation (TACE)

Correct Answer: B

Case 5 - Question 2/5

MEDICAL HISTORY

- A 77-year-old woman with a history of Hepatitis C and cirrhosis had a 35 mm hypoechoic lesion found in her right lobe of the liver on ultrasound.
- Her serum alpha-fetoprotein was 530 $\mu\text{mol/L}$ (normal value: $<10 \mu\text{mol/L}$).
- Multiphase post-contrast CT confirmed a solitary lesion in segment 8 measuring 35 mm in size, with arterial enhancement and washout on the delayed phase.

The patient was discussed at the multidisciplinary tumour board (MDT) meeting and was deemed to have Child-Pugh A6 cirrhosis. She had a history of ischaemic heart disease for which she underwent coronary artery bypass grafting 12 months previously. Her cardiac function is now normal. She also has oesophageal varices.

What treatment would be the most appropriate for this patient? Select one option only:

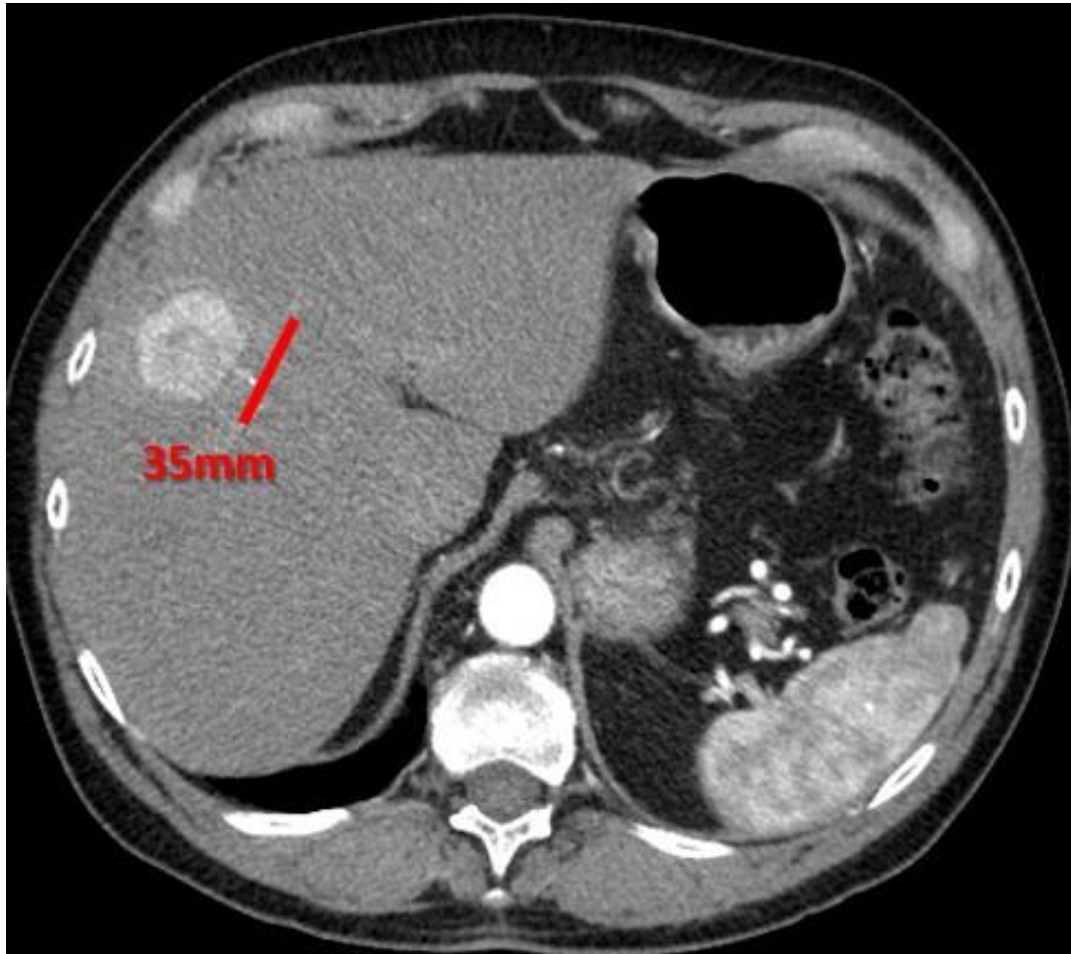
- A. Bland transarterial embolisation
- B. Liver transplantation
- C. Surgical resection
- D. Thermal ablation
- E. Transarterial chemoembolisation (TACE)

Case 5 - Question 3/5

MEDICAL HISTORY

- A 77-year-old woman with a history of Hepatitis C and cirrhosis had a 35 mm hypoechoic lesion found in her right lobe of the liver on ultrasound.
- Her serum alpha-fetoprotein was 530 $\mu\text{mol/L}$ (normal value: $<10 \mu\text{mol/L}$).
- Multiphase post-contrast CT confirmed a solitary lesion in segment 8 measuring 35 mm in size, with arterial enhancement and washout on the delayed phase.

The following week, she attends for the procedure. After gaining intra-arterial access, you select the right hepatic artery and perform an angiogram. The angiogram shows enhancement of a single lesion from a right anterior hepatic artery branch.



Which is the most appropriate next procedural step? Select one option only:

- Coil embolisation of the gastroduodenal artery to prevent non-target embolisation to the duodenum
- Selectively catheterise the left hepatic artery to check for arterial supply to the nodule
- Super-selective embolisation of the lesion with chemotherapy and lipiodol emulsion
- Superior mesenteric artery angiogram to assess for aberrant arterial supply to the lesion

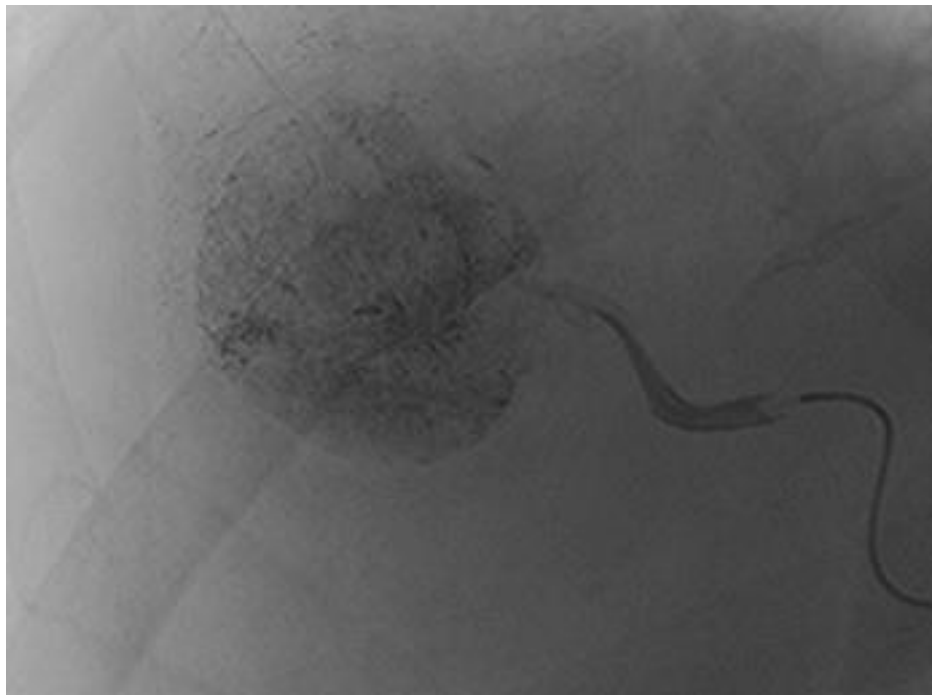
Correct Answer: B

Case 5 - Question 4/5

MEDICAL HISTORY

- A 77-year-old woman with a history of Hepatitis C and cirrhosis had a 35 mm hypoechoic lesion found in her right lobe of the liver on ultrasound.
- Her serum alpha-fetoprotein was 530 $\mu\text{mol/L}$ (normal value: $<10 \mu\text{mol/L}$).
- Multiphase post-contrast CT confirmed a solitary lesion in segment 8 measuring 35 mm in size, with arterial enhancement and washout on the delayed phase.

After super selective transarterial chemoembolisation (TACE) with an emulsion of cisplatin, mitomycin C, and lipiodol, a good angiographic result is seen. Later that afternoon, the patient has mild upper quadrant tenderness, temperature is 38.0°C and oxygen saturation is 95% on room air.



What is the most likely diagnosis? Select one option only:

- A. Acute hepatitis
- B. Cholecystitis
- C. Liver infarction
- D. Post-embolisation syndrome

Correct Answer: D

Case 5 - Question 5/5

MEDICAL HISTORY

- A 77-year-old woman with a history of Hepatitis C and cirrhosis had a 35 mm hypoechoic lesion found in her right lobe of the liver on ultrasound.
- Her serum alpha-fetoprotein was 530 $\mu\text{mol/L}$ (normal value: $<10 \mu\text{mol/L}$).
- Multiphase post-contrast CT confirmed a solitary lesion in segment 8 measuring 35 mm in size, with arterial enhancement and washout on the delayed phase.

The patient was diagnosed with post-embolisation syndrome and was discharged home.

What is the most appropriate follow up for this patient? Select one option only:

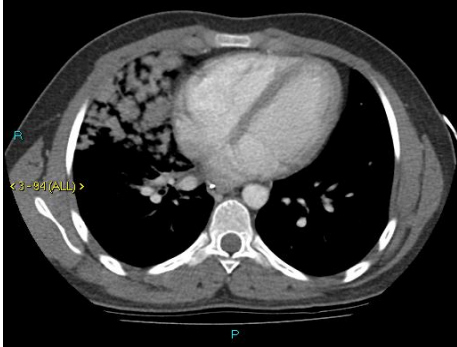
- A. CT scan on day 1
- B. CT scan in 6 days
- C. CT scan in 2 weeks
- D. CT scan in 6 weeks

Correct Answer: D

Case 6 - Question 1/4

MEDICAL HISTORY

- A 42-year-old man presents at the emergency department with massive haemoptysis.
- He has been taking non-steroidal anti-inflammatory drugs regularly for lower back pain for the past 6 weeks.
- He has a history of recurrent lung infection but no known underlying pulmonary disease.
- His pulse rate is 90 beats per minute, his blood pressure is 110/70 mm Hg and his oxygen saturation is 92% on room air.



A Chest CT was performed which showed right middle lobe pulmonary haemorrhage.

After discussion with the attending interventional radiologist he was referred for endovascular treatment. A thoracic aortogram was performed.



Which vessel is the most likely source of the bleeding? Select one option only:

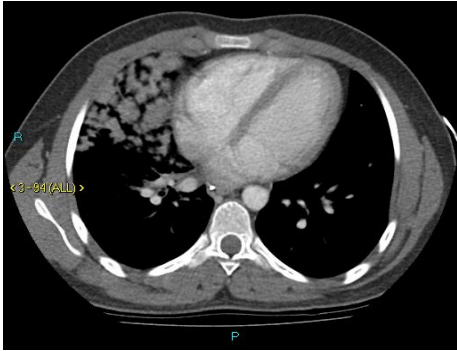
- A. Right pulmonary artery
- B. Right internal mammary artery
- C. Right intercosto-bronchial trunk
- D. Right intercostal artery

Correct Answer: C

Case 6 - Question 2/4

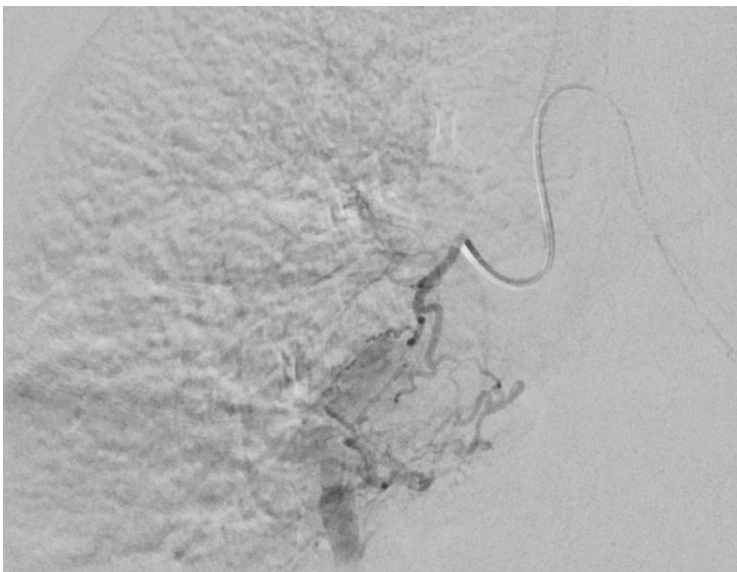
MEDICAL HISTORY

- A 42-year-old man presents at the emergency department with massive haemoptysis.
- He has been taking non-steroidal anti-inflammatory drugs regularly for lower back pain for the past 6 weeks.
- He has a history of recurrent lung infection but no known underlying pulmonary disease.
- His pulse rate is 90 beats per minute, his blood pressure is 110/70 mm Hg and his oxygen saturation is 92% on room air.



A Chest CT was performed which showed right middle lobe pulmonary haemorrhage.

Superselective catheterisation of a right bronchial artery was performed, then further angiography was performed (see image).



Which of the following statements is the most appropriate? Select one option only:

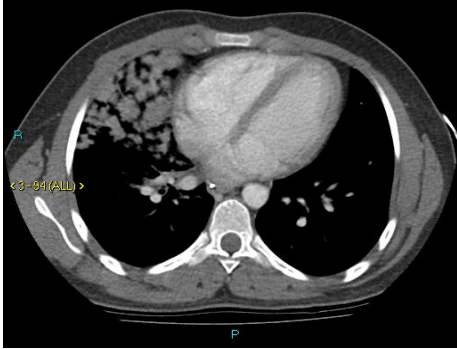
- A. Embolisation is contraindicated due to spinal artery filling
- B. Embolisation is contraindicated due to arteriovenous shunting
- C. Embolisation is contraindicated due to vessel perforation
- D. There is no contraindication for embolisation
- E. Embolisation is contraindicated due to the presence of microaneurysms

Correct Answer: D

Case 6 - Question 3/4

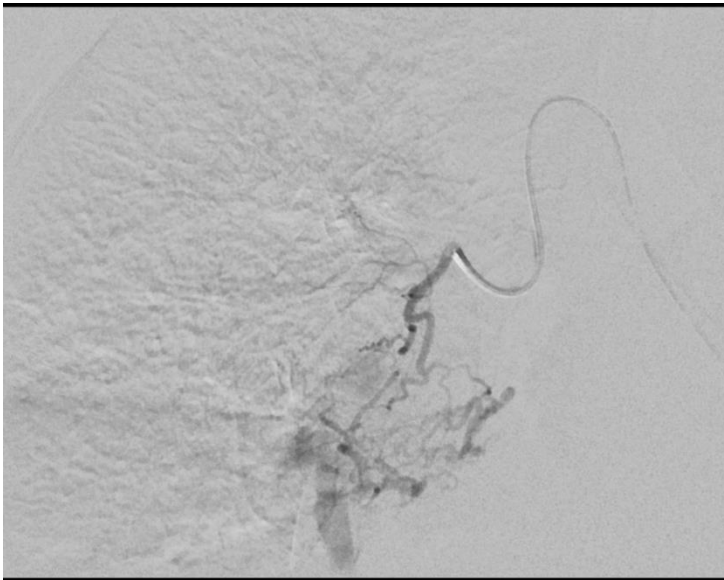
MEDICAL HISTORY

- A 42-year-old man presents at the emergency department with massive haemoptysis.
- He has been taking non-steroidal anti-inflammatory drugs regularly for lower back pain for the past 6 weeks.
- He has a history of recurrent lung infection but no known underlying pulmonary disease.
- His pulse rate is 90 beats per minute, his blood pressure is 110/70 mm Hg and his oxygen saturation is 92% on room air.



A Chest CT was performed which showed right middle lobe pulmonary haemorrhage.

Following superselective catheterisation with a microcatheter, bronchial artery embolisation was performed.



Which is the most appropriate embolic agent? Select one option only:

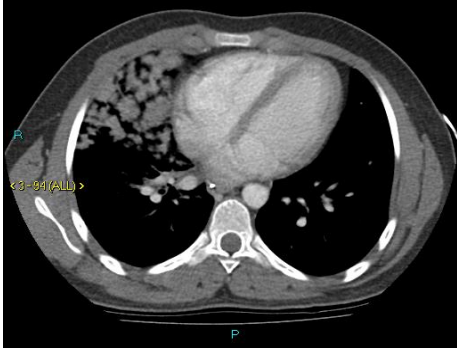
- A. Microcoils
- B. N-Butyl cyanoacrylate glue
- C. Polyvinyl alcohol particles (350-500 micrometers)
- D. Polyvinyl alcohol particles (150-250 micrometers)

Correct Answer: C

Case 6 - Question 4/4

MEDICAL HISTORY

- A 42-year-old man presents at the emergency department with massive haemoptysis.
- He has been taking non-steroidal anti-inflammatory drugs regularly for lower back pain for the past 6 weeks.
- He has a history of recurrent lung infection but no known underlying pulmonary disease.
- His pulse rate is 90 beats per minute, his blood pressure is 110/70 mm Hg and his oxygen saturation is 92% on room air.



A Chest CT was performed which showed right middle lobe pulmonary haemorrhage.

On the 9th post-procedural day, the patient had another 100 mL haemoptysis. Repeat angiography was performed.

Which are the most likely sources of recurrent bleeding in this patient? Select three options only:

- A. Systemic collaterals from right internal mammary artery
- B. Systemic collaterals from right phrenic artery
- C. Collaterals from right pulmonary artery
- D. Further right bronchial artery supply

Correct Answer: A, B, D

Case 7 - Question 1/4

MEDICAL HISTORY

- A 76-year-old woman with type 2 diabetes has an incidental finding of a solitary liver mass on ultrasonography.
- A contrast-enhanced CT scan confirmed a liver tumour in a non-cirrhotic liver localised to the left lobe.
- The alpha-fetoprotein was mildly elevated: 40 IU/mL (normal range: <8 IU/mL), but all other laboratory investigations were normal.
- The largest diameter of the lesion was 6.3 cm.

Liver biopsy revealed a hepatocellular carcinoma.



Which of the following is the most appropriate treatment option for this patient? Select one option only:

- A. Multiple needle thermal ablation
- B. Left hepatectomy
- C. Trans-arterial radioembolisation
- D. Trans-arterial chemoembolisation

Correct Answer: B

Case 7 - Question 2/4

MEDICAL HISTORY

- A 76-year-old woman with type 2 diabetes has an incidental finding of a solitary liver mass on ultrasonography.
- A contrast-enhanced CT scan confirmed a liver tumour in a non-cirrhotic liver localised to the left lobe.
- The alpha-fetoprotein was mildly elevated: 40 IU/mL (normal range: <8 IU/mL), but all other laboratory investigations were normal.
- The largest diameter of the lesion was 6.3 cm.

The patient was discussed at the multidisciplinary tumour board (MDT). She had an acute coronary syndrome (STEMI) 8 months previously treated with a drug-eluting stent. She is currently on dual antiplatelet therapy.



What are the factors associated with failure of thermal ablation as the only treatment in this patient? Select three options only:

- A. Size of the lesion
- B. Perivascular location
- C. The likelihood of microsatellite lesions
- D. High chance of tumour seeding following ablation

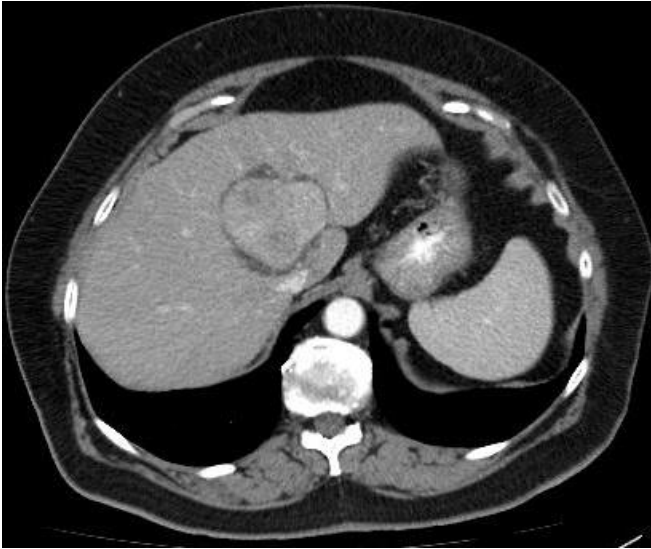
Correct Answer: A, B, C

Case 7 - Question 3/4

MEDICAL HISTORY

- A 76-year-old woman with type 2 diabetes has an incidental finding of a solitary liver mass on ultrasonography.
- A contrast-enhanced CT scan confirmed a liver tumour in a non-cirrhotic liver localised to the left lobe.
- The alpha-fetoprotein was mildly elevated: 40 IU/mL (normal range: <8 IU/mL), but all other laboratory investigations were normal.
- The largest diameter of the lesion was 6.3 cm.

At the multidisciplinary tumour board (MDT), transarterial chemoembolisation was advised.



Which of the following would be appropriate materials to use for chemo-embolisation in this patient? Select two options only:

- A. Doxorubicin loaded drug-eluting beads
- B. Lipiodol + doxorubicin + Gelfoam
- C. Non-spherical polyvinyl alcohol (PVA) and doxorubicin
- D. Irinotecan loaded drug-eluting beads

Correct Answer: A, B

Case 7 - Question 4/4

MEDICAL HISTORY

- A 76-year-old woman with type 2 diabetes has an incidental finding of a solitary liver mass on ultrasonography.
- A contrast-enhanced CT scan confirmed a liver tumour in a non-cirrhotic liver localised to the left lobe.
- The alpha-fetoprotein was mildly elevated: 40 IU/mL (normal range: <8 IU/mL), but all other laboratory investigations were normal.
- The largest diameter of the lesion was 6.3 cm.

Transarterial chemoembolisation with doxorubicin drug-eluting beads was performed.

The patient was reviewed in the interventional radiological clinic 1 week later with fever (38.7°C) and epigastric pain.



What are the most appropriate next management steps? Select three options only:

- A. This is an expected side effect, therefore reassure the patient and discharge
- B. Carry out blood tests, including C-reactive protein and white cell count and do a CT-scan
- C. Admit the patient and commence wide spectrum antibiotics
- D. Percutaneous aspiration of treated lesion
- E. Perform electrocardiogram (ECG) and assess myocardial enzyme levels

Correct Answer: B, C, E