Surgery/Vascular SAQs

1. A 7 year old boy attends the emergency department with central abdominal pain over the past 48 hours. He has been recently well, has no gastrointestinal upset and is afebrile. On examination he is tender centrally but has no guarding or palpable masses. His parents are concerned for appendicitis.

    a) What are two of the four most commonly reported features of appendicitis? (2 marks)

- Anorexia (60-90%)
- Nausea (75%)
- Vomiting (55%)
- Change in bowel habits (10%)

    b) List the three examination findings found within the Alvarado score (3 marks)

- RLQ tenderness
- Rebound tenderness
- Febrile >37.3C

    c) An ultrasound is performed the report is awaited. List four diagnostic findings in non-perforated appendicitis (4 marks)

- >6mm in diameter
- Target sign with 5 concentric layers
- High echogenicity of the surrounding appendix
- An appendicolith
- Pericecal or appendicaecal free fluid
- Muscular wall thickness >2mm
- Absence of appendicaecal peristalsis

Whilst awaiting the ultrasound, blood tests were taken, and a cannula inserted. A surgical opinion is sought. The surgical registrar refuses to see the patient prior to a CRP and WCC being performed and returned.

    d) What is the sensitivity and specificity of the combination of an elevated WCC and elevated CRP in acute appendicitis? (2 marks)

Sensitivity: 100%

Specificity: 50%

2. A 54 year old female presents to ED with a history of intermittent abdominal pain in the right upper quadrant. Today the pain has been increasingly severe and is now persistent. She has vomited several times and has had one loose bowel motion. Her observations reveal a temperature of 38C, pulse rate 105bpm and BP 109/60. They are otherwise normal. You suspect acute cholecystitis. There is no ultrasound facility at this time in your ED.

   a) What is the definition of 'Murphy's sign'? (1 mark)

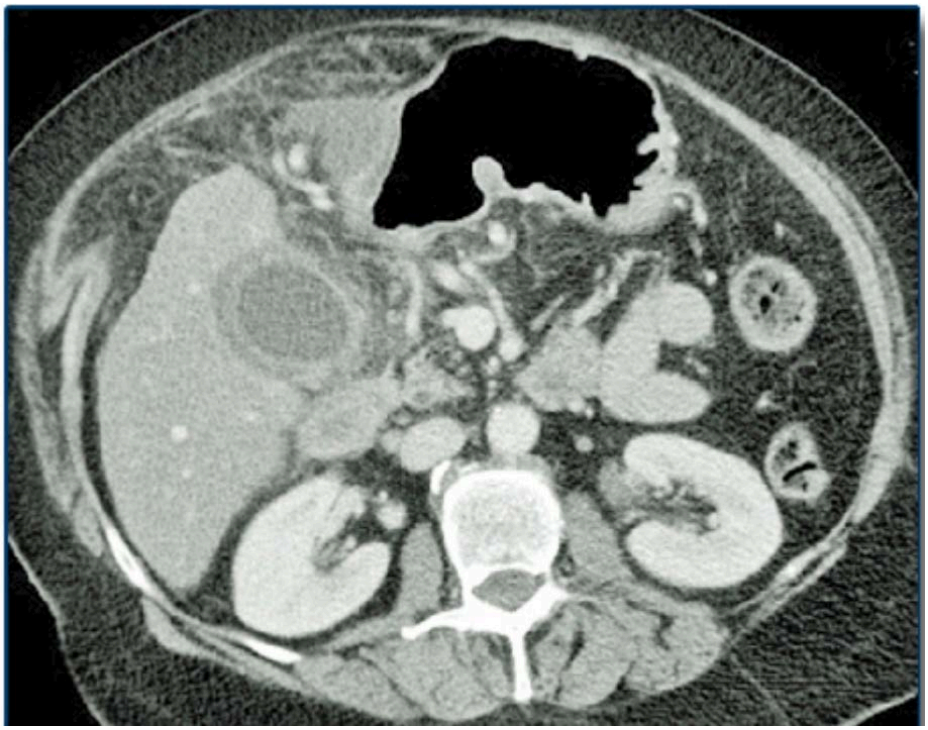
      - Sudden cessation of deep inspiration due to pain when examining fingers reach the inflamed gallbladder upon palpation in the right subcostal region.

   b) Complete the table below listing to other local signs and two systemic signs that fulfil the case definition for acute cholecystitis (4 marks)

Local Signs	Systemic signs
RUQ mass	Fever
RUQ pain	Elevated CRP
RUQ tenderness	Elevated WCC

      - Murphy's sign not included as already in the previous answer. See table 79-6 of Tintinalli 9th Ed.

   c) A CT is performed and shown below. Please list the two most relevant positive findings: (2 marks)



      - Distended gallbladder
      - Gall bladder wall thickening
      - Significant fat stranding adjacent to the gall bladder

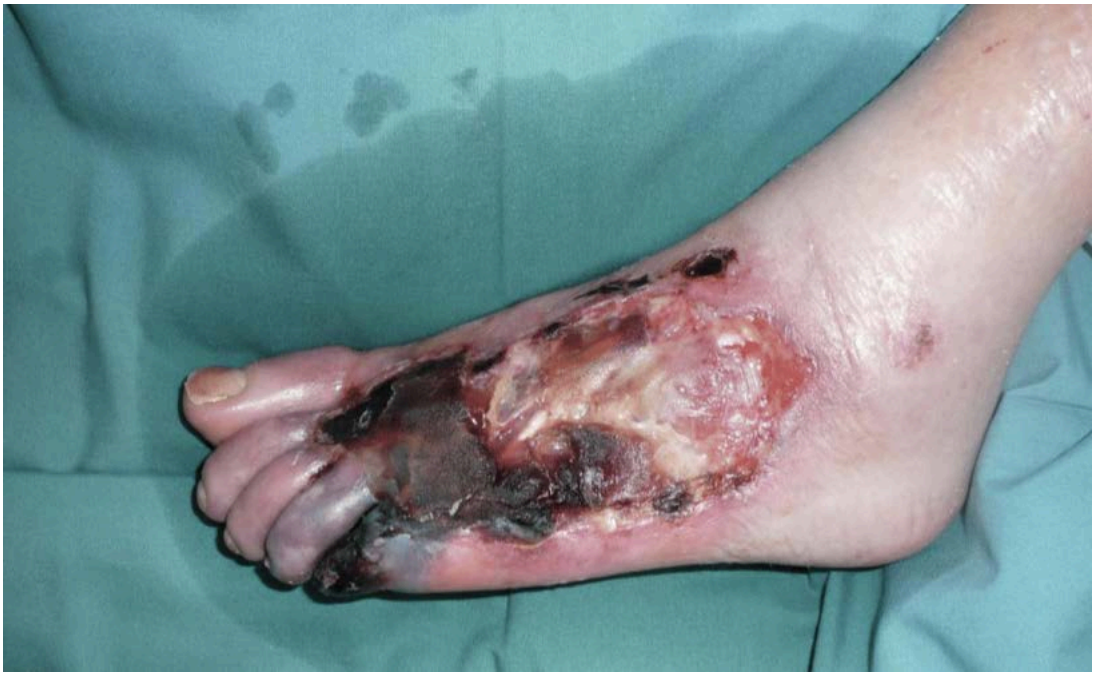
d) If ultrasound was available, what three features would be suggestive of acute cholecystitis? (3 marks)

- GB wall >4mm thick anteriorly
- GS with acoustic shadowing
- Pericholic fluid (60% sensitive)
- Gas in the gall bladder wall
- Gas in biliary tree
- Sonographic Murphy's +ve

e) Outline your management of this patient (3 marks)

- Analgesia, e.g 0.1mg/kg IV morphine and antiemetics 4-8mg/kg ondansetron = 1 mark
- IV fluids to aim for MAP 65mmHg and U/O 0.5ml/kg/hr
- IV antibiotics 2g ampicillin tds, gentamicin 4-6mg/kg daily
- Surgical review for consideration of cholecystectomy
- 'NBM' does not score a point as a medical student could say NBM.

3. A 70 year old diabetic presents with painful ulceration of the left foot. A photo of which is shown



a) List 4 positive findings in the photo

- Paucity of hair seen on visible skin distally
- Deep large heterogenous
- Necrotic tissue distally
- Non-viable 5th toe
- Oedematous remaining toes indicative of inflammatory changes/peripheral oedema
- Skin atrophy

b) Complete the following table outlining two thrombotic and two embolic causes of arterial occlusion: (4 marks)

Thrombotic	Embolic
Atherosclerosis	AF
IVDU	Mural thrombus secondary to MI
Trauma	Aneursymal thrombus emolising
Aneurysmal thrombus formation	Paradoxical embolic event

This table taken from Tintinalli 9th ed.

c) Buerger's test (3 marks)

- patient supine
- lift both legs high, keep knees straight, more than 30 cm above level of right atrium
- any change in colour of feet noted
- if no colour change, flex and extend ankles and toes 5 - 6 times
- latent colour changes induced by exercise are noted
- if arterial supply defective, sole of foot becomes pale, veins on dorsum of foot empty
- lower feet, and patient adopts sitting position

- normal colour should return within 10 seconds veins should fill within 15 seconds
- if a ruddy, cyanotic hue spreads over affected foot within 2-3 minutes, this suggests major lower limb artery occlusion

d) What ankle brachial pressure index would you expect in this patient?

- < 0.2 = gangrenous specifically