

A 43 year old woman presents with intermittent dizziness and feeling “not quite right” in the last 3 days.

Vital signs are:

RR 24

SaO2 92% on room air

HR 110

BP 98/60

Temperature 37.9

1. List four differential diagnoses for this patient. For each diagnosis, list a specific finding on bedside ultrasound that confirms the diagnosis

(8 marks)

Differential Diagnosis	Bedside Ultrasound Finding
PE	Dilated RV Bowling of intraventricular septum into LV RV systolic dysfunction
Pneumothorax	Absence of lung sliding Loss of B lines Increased clarity of A lines
Pericardial effusion +/- tamponade	Anechoic/hypoechoic stripe in pericardial space consistent suggesting effusion If tamponade, diastolic RV collapse
Ruptured ectopic	Free fluid in abdomen
Pleural Effusion	Spine sign – visualisation of vertebral bodies in the thoracic cavity above the diaphragm (not usually seen unless there is fluid)
Pulmonary oedema due to cardiac failure	Bilateral B lines with poor systolic function
Pneumonia	B lines Hepatisation of lung – homogenous, fine echotexture with appearance similar to liver Shred sign – irregular junction between consolidated and aerated lung
Myocarditis	Poor systolic function Regional wall motion abnormalities

2. List two pros and two cons regarding the use of ultrasound in this patient:

Pros:

- a) Can be done at the bedside therefore avoiding movement of a potentially unstable patient out of the department
- b) Repeatable, therefore can monitor for evolution of pathology
- c) Non invasive, no radiation exposure, particularly for young patient

Cons:

- a) Sensitivity and specificity may be impacted by skill level of operator
- b) May be non diagnostic, therefore need to go on to have further investigation regardless
- c) Can lead to fixation on the part of the operator and therefore detract from other important management