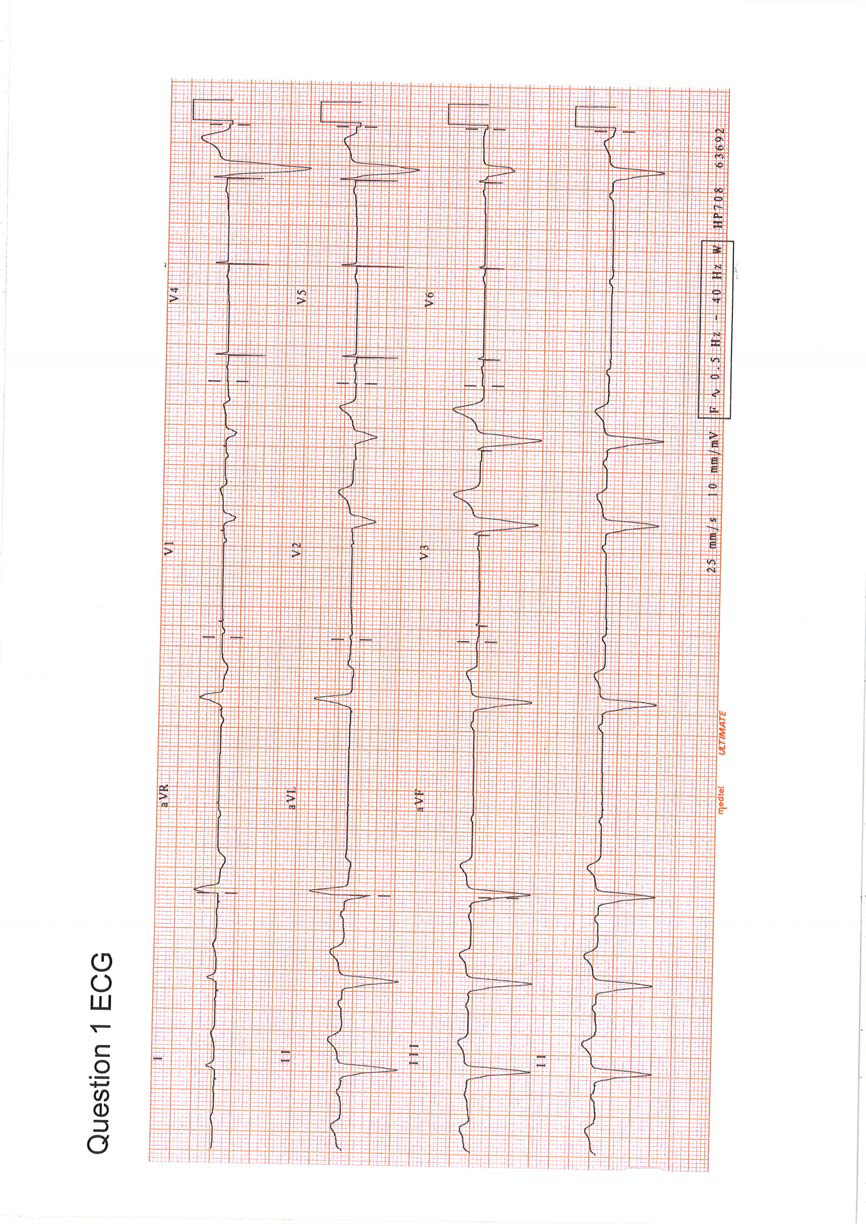
**Monash Practice SAQ 2024.1 Dane Horsfall Cabrini 12 Marks:**

A 78 year old man is brought to your emergency department after an unconscious collapse. He is now alert and well. His vital signs are normal. His ECG is shown.



A.Describe 2 key features of the ECG (2 Marks)

- **Failure of ventricular capture** (4th beat, 6th , 9th, 10th beats)

- Native Atrial activity (P waves)

- Ventricular pacing with LBBB morphology,

0.5 LAD

Not accepted:

- Mobitz Type 2 heart block

- bradycardia

- unsensed beats

B.List four potential causes of this ECG (4 Marks)

- **Lead dislodgement or malposition** (most common cause)

- Programming errors with suboptimal output

- Battery failure

- Exit block - failure of capture when falls outside of refractory period

- Electrolyte abN esp hyperK and acidosis

- Cardiac fibrosis/inflammation at site of ventricular wire tip

- Ischaemia

- Medications eg flecainide, Sotalol – accept only one

- hypothermia

- twiddler’s syndrome

Half mark

-electrolyte imbalance

Don’t accept

- lead fracture since good pacing spikes.

- failure of device

C. List 5 key steps in performing transcutaneous pacing. (5 Marks)

- deactivate PPM wioth magnet

- If alert and orientated gain consent

- Sedation/analgesia not propofol

- Connect 3 leads

- Connect pads(AP better)

- Turn pacing setting on defib

- Select pacing mode(fixed/**demand**),

- Set rate 50-70bpm,

- Increase output to 70mAmps (not J ½ mark) to achieve electrical and mechanical capture then increase 5-10 mAmps

- Trouble Shooting if not captured at current of 120-130mA - resite electrodes and repeat above.

0.5

-analgesia/sedation

-attempt to explain to and recognition may not be able to provide informed consent

-Joules or volts rather than mAMPs

Don’t accept:

- consent since probably too unwell to obtain and need to proceed under ‘duty of care’

D. Explain the difference between electrical and mechanical capture (1 mark)

-Electrical capture = ECG showing widened QRS following each pacer spike.

-Mechanical capture = palpable pulse with each pacing spike and QRS and other signs of increased circulation – increased blood pressure, improvements in skin color and warmth, and improved level of consciousness.

References:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7192127/#:~:text=The%20most%20common%20cause%20of,electrocardiogram%20is%20usually%20very%20helpful>

<https://litfl.com/pacemaker-malfunction-ecg-library/>

<https://criticalcarenow.com/transcutaneous-pacing-for-nurses/#:~:text=Electrical%20capture%20is%20confirmed%20by,and%20improved%20level%20of%20consciousness>)

**Results:**

Pass mark >=9.5/12

Passed 21/34 = 62%

Failed 13/34