

Environmental question

Hypothermia

A 68 year old man is found wandering the streets at 3am. He is confused and his vital signs are:

GCS 14

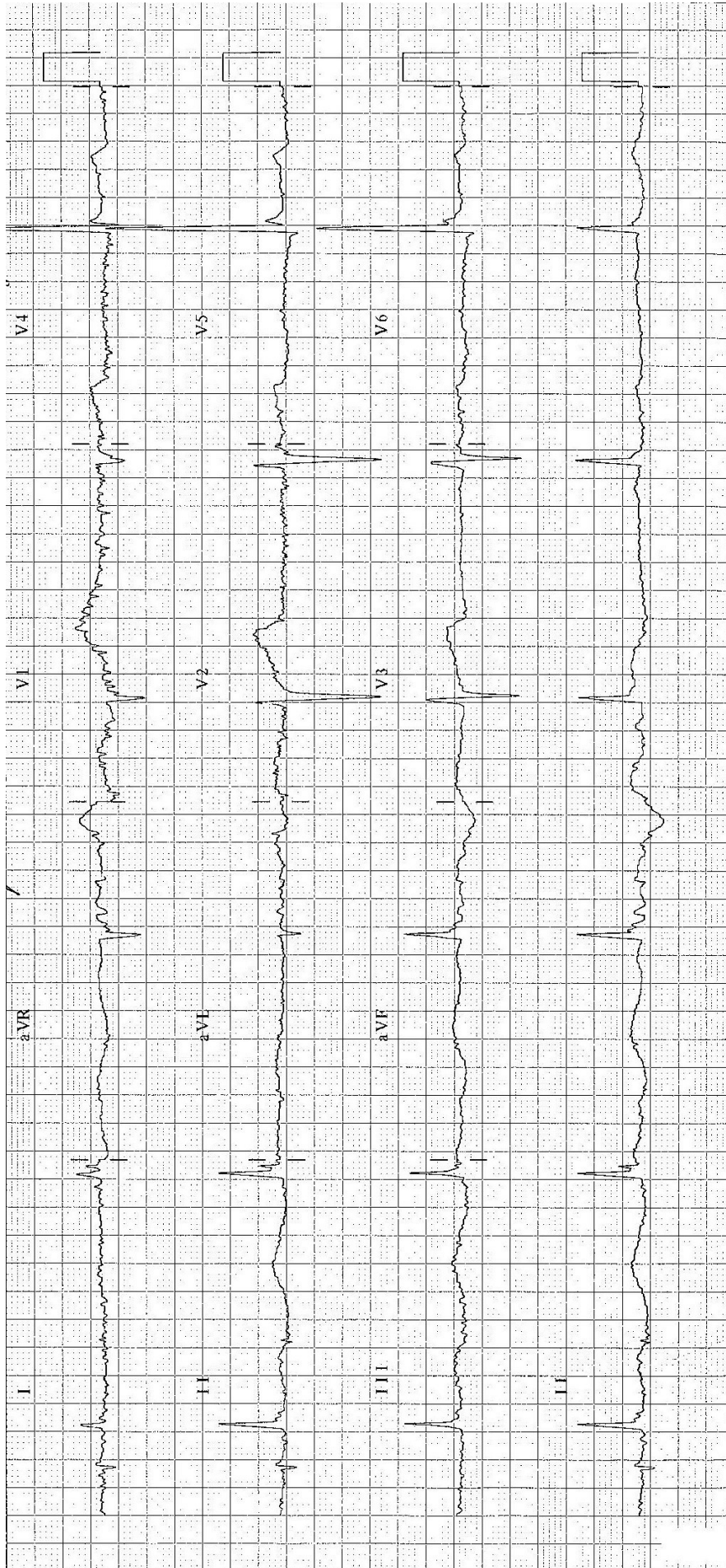
BP 124/70 mmHg

PR 50 regular

RR 20

Temperature 31 degrees Celsius

An ECG is taken below



1. List 4 features on this ECG consistent with hypothermia (4 marks)

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2. List 3 factors associated with a greater chance of survival in hypothermia (3 marks)

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3. List 5 parameters which may identify the non-salvageable patient in hypothermia (5 marks)

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4. Complete the table below showing 5 warming strategies in patients with hypothermia and the associated temperature rise / hour (C) - endogenous rewarming has been completed for you as an example (10 marks)

Warming Technique	Temperature rise / hour (C)
Endogenous rewarming	1

Environmental question

Answers

1. Accept any of the following:
 1. Bradycardia
 2. shivering
 3. Osborn wave (or J wave)
 4. ST changes (most pronounced laterally) - non-specific
 5. Atrial fibrillation (note - AF with slow VR or AF bradycardia is 2 marks)
2. Accept any of the following (Dunn 6th edition p.1311)
 1. Rapid onset
 2. paediatrics
 3. accidental hypothermia (i.e. not secondary to underlying insult)
 4. drug or alcohol related
3. Dunn 6th edition p.1311
 1. Serum potassium > 10 mmol/L
 2. Core Temperature < 6-7C
 3. Core Temperature < 15C and no circulation for > 2 hours
 1. venous pH < 6.5
 4. Large intracardiac thrombus on echocardiography (or thoracotomy)
 5. Failure to obtain venous return during ECMO
 6. Severe coagulopathy

4.

Warming Technique	Temperature rise / hour (C)
Endogenous rewarming	1
Warm / humidified air	1-1.5
Forced warm air blanket	1-2
Peritoneal lavage	2-4
Thoracic lavage	3-6
Hot bath	4-10
ECMO / bypass	7-10