

1. Lead examiner

Candidate Number:

2. Co-examiner

Final Mark:

SCENARIO

A 40 year-old man is brought to your tertiary ED after being found unconscious in a police watch-house cell. It appears he hanged himself with a belt, tied to a ceiling beam. Ambulance personnel report the following at handover:

- GCS 5 (E1, V1, M3)
- Temp 37deg C
- HR 110 bpm
- BP 180/90 mmHg
- RR 16 bpm – spontaneous respirations, with stridor

Ligature bruising / oedema around neck. Some ventilation assistance provided with bag/valve/mask device. Hard cervical collar applied.

Question 1: Describe your initial management (included in stem).**(2 minutes; 3 marks)**

Expected Response	Details & Comments	
Incomplete hanging with strangulation	Given mechanism and initial findings: probable laryngeal trauma, with hypoxic cerebral injury. C spine injury less likely, but initial precautions prudent.	
Resuscitation approach	Assemble team. Assume leadership. Delegate tasks. Clear communication.	
Primary Survey	ABC, determine neurological status prior to RSI: GCS, deficits, pupils, spinal reflexes	
Airway	Needs urgent intubation . Anticipate difficult airway . Assign to most experienced airway personnel. Manual in-line C spine immobilisation (C spine injury is low probability, so candidates may opt to justify their reason for NOT performing this). RSI – maintain BP (hence CPP)	
Ventilation	Post intubation – maintain high pO ₂ and normocarbida, given hypoxic cerebral ischaemia	
Circulation	Hypoxic cardiac arrest is a risk, dependent on hypoxia “down time”. Current high BP probably from high ICP. Avoid BP drop. Maintain full cardiac monitoring . Aim MAP at 90mmHg	
Disability	Neurological assessment important prior to RSI (see above). Anticipate significant secondary neurological injury from hypoxia and venous congestion. Needs ongoing neuroprotective measures (keep ICP low): head up at 30deg, high pO ₂ , normal pCO ₂ , sedation, paralysis. Consider induced hypothermia.	

Question 2: The patient is successfully intubated, and is clinically stable with supportive management. Outline the important features in the HISTORY of this case.

(2 minutes; 2 marks)

Expected Response	Details & Comments	
Prognostic Indicators	“Down Time”; first aid / BLS rendered, if any; initial vital signs and GCS Cardiac arrest at scene – if so, a poor prognosis, as the cause is secondary Co-morbidities, including illicit drug history and possible current drug / alcohol effects Previous / current injuries Estimated height of hanging “fall” – fall of patient’s height (complete hanging) poses high probability of C-spine trauma	3 of 5 sections
Psychiatric and D&A	Reasons for suicide attempt Known mental illness, esp previous such attempts, psychosis Drug and EtOH history, including possible current intoxication	
Medical Hx	Pre-existent illness may lower threshold for complications – eg DM, previous cardiac Hx Current prescribed medications Allergies / adverse reactions	
Social	Next of Kin – need for notification Current supports – eg social work case worker	
Medico-legal	Reason for incarceration – consider current safety issues Police liaison – mandatory notifications	

Question 3: The patient has been on a ventilator for a brief period. Initial arterial blood gases are available. FIO₂ is 100%.

pH	6.8	
pCO ₂	55 mmHg	
pO ₂	180	mmHg
O ₂ saturation	90	%
HCO ₃	11	mmol/L
Base Excess	-15	

Describe and interpret these results.

(1 minute; 2 marks)

Expected Response	Details & Comments	
Severe acidemia	Mixed severe metabolic and respiratory acidosis Likely prolonged tissue hypoxia from strangulation. Possible other causes like toxins (?deliberate ingestion prior to hanging) Hypoventilation / apnoea pre intubation. However, expect pCO ₂ to be lower, post intubation and ventilation.	Bold
Hypoxia despite high FIO ₂	A-a gradient >470. Impaired gas exchange.	
Hypercarbia	Inadequate ventilation	
Implications	Critical ventilatory inadequacy (equipment, patient factors). Need to seek and reverse cause(s)	

Question 4: The patient develops high airway pressures.

Outline your approach.

(2 minutes; 3 marks)

Expected Response	Details & Comments	
Control situation (Systematic approach required- patient + equipment factors)	Remove from ventilator. Hand ventilate with BVM device, on 100% O ₂ . Check all lines and tubing. View ETT and cords with laryngoscope. Ensure adequate sedation and paralysis. Insert gastric tube and empty stomach. Seek and treat other possible conditions, as per below:	
? PTx	Clinical signs, high ventilation pressures; urgent portable CXR	+ 3 of 5
? [R] main bronchus	Clinical signs, CXR	
? Aspiration	Hx of vomiting; may not be visible on early CXR	
? Airway trauma	Subcut emphysema, low ventilation pressures	
? Bronchospasm	High airway pressures; exp wheeze; chest hyperinflation	

Comments: (if you fail the candidate, please state why)

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If the candidate fails the exam overall, what feedback would you suggest CIC provide for this SCE?

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