

1. Lead examiner

Candidate Number:

2. Co-examiner

Final Mark:

SCENARIO

You are on duty in your regional Emergency Department. The aero-medical retrieval service has brought in a 23 yo male from the bush, who was probably bitten on the lower leg by a snake 4 hours ago. He walked out of the bush to a local first-aid station where a nurse applied a pressure immobilisation bandage.

Currently he is complaining of a headache, but no weakness or blurred vision.

On examination: GCS 15; HR 88 bpm; BP 135/80 mmHg; RR 20 bpm.

Question 1: Outline your approach to this patient.

Expected Response	Details & Comments	2 m
Potential Issues	Potentially fatal snake bite / envenomation. Clinical info provided suggests not severe envenomation (yet?). Needs detailed assessment. Seek syndrome(s). Delay in presentation - 4 hrs ago without 1 st aid at scene. Urgent Ix / assays: VDK, laboratory tests. Urgent Rx: antivenom - assess for indications, specific agent. May require large amounts, exceeding available supplies.	
Immediate	Manage in appropriate bay: cardio-respiratory monitoring Monitor for developing Sxs / signs of envenomation Leave dressing intact until initial assessment complete Assess effectiveness of immobilization dressing: sufficient pressure and proximal extension IV access; send serum for FBE, U&E, CK, coag, Gp & Hold Cut window over bite site and assess wound. Swab for VDK and lab assays	
Subsequent	Detailed, accurate Hx from pt, esp if any 1 st aid at scene or developing Sx suggesting envenomation Look for developing features of envenomation: (prompt for signs) • CVS collapse / instability • Neurotoxicity – ptosis, weakness or paralysis, decreased LOC • Coagulopathy – oozing from IV site, bleeding gums • Acute renal failure – high U & Cr • Rhabdomyolysis – high K⁺ with ECG changes, brown urine, high CK	
Urgent Mx	Supportive care, including titrated analgesia Identify indications for urgent antivenom administration	

Question 2: The patient has been stable since arriving, except for a worsening headache. The initial blood results are available. Interpret these results.

Full Blood Examination			Reference	Clotting Profile			Reference
Hb	128	g / L	130 - 170	PT	> 150	sec	11 - 18
White Cell Count	10.2	x 10 ⁹ / L	3.9 - 9.9	APTT	> 150	sec	25 - 36
Platelets	88	x 10 ⁹ / L	150 - 400	INR	> 15		0.9 - 1.1
				D-Dimer	positive		
				Fibrinogen	< 60	mg / L	180 - 440

Expected Response	Details & Comments	2 m
FBE	Hb, plt low consistent with coagulopathy. WCC mildly elevated.	
Coagulation Profile	PT, APTT, INR all grossly elevated with +ve D-Dimer and low fibrinogen. Consistent with severe consumptive (or defibrinating) coagulopathy.	
Interpretation	Features indicate envenomation. Consistent with Brown, Tiger or Taipan snake envenomation. Urgent antivenom Rx is indicated.	
Antivenom dose and type	Monovalent ideal: urgent VDK from bite site. Result should be available before, or same time as the above.	
Prompt: "Outline your	Determine turn around time - likely to be 20-30 min - monovalent if patient's condition	

antivenom Rx regimen."	permits. VDK should not delay empiric Rx of envenomed patient, using polyvalent. Dose is controversial: new evidence indicates that 2-5 vials may be as/more effective than large doses of 20+ vials	
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Question 3: It is 2 hours post arrival of the patient. Antivenom treatment is underway.

The patient now complains of diplopia and mild dyspnoea. He has a new ptosis and is oozing blood from his gums and IV sites. HR 120; BP 90/60; spO₂ 88% on 4 L/min O₂.

Outline your response.

Expected Response	Details & Comments	2 m
Impression	Features of neurotoxicity, CV compromise, respiratory failure and coagulopathy Most likely Tiger snake envenomation.	
Management	Airway and Respiratory failure: high flow O ₂ , requires intubation and ventilation as pt unlikely to be able to have effective ventilation on BIPAP. Caution with suxamethonium if serum K very high. CV compromise: Fluid resuscitation with crystalloids; monitor renal function and urine output. Coagulopathy: in adequate doses, antivenom prevents further progression but won't reverse present problem. FFP indicated if severe bleeding.	
Ongoing	Monitor coag, renal function, serum K. Avoid unnecessary needle punctures. Care for bleeding sites. Liaise with NOK.	
Disposition	ICU	

Question 4: In general, DISCUSS the role of the Venom Detection Kit (VDK) in assessment of suspected snakebite.

Expected Response	Details & Comments	1 m
Key Points	- Must be used in conjunction with an assessment for features of envenomation. - For severe envenomation (eg cardiovasc collapse) Rx with antivenom should occur immediately, with polyvalent or the monovalent(s) most appropriate to the clinical picture / geographic area. VDK should not delay such Rx.	
Pros	May detect the presence of venom on a patient's skin at the bite site Used on a patient's urine sample to confirm systemic envenoming Positive VDK with signs of envenomation it indicates specific antivenom to administer Relatively short turnaround time	
Cons	Positive VDK from bite site does not: - confirm envenomation; only venom's presence - indicate antivenom Rx by itself Urine VDK can result in false positives –esp brown snake Does not identify snake genus – only indicates specific antivenom to use if required Cannot be performed on the patient's serum Negative VDK swab from the bite site may occur if bite site is washed of envenomation. Requires skill and familiarity for use / interpretation; these are NOT common!	

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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