

1. Lead examiner

Candidate Number:

2. Co-examiner

Final Mark:

SCENARIO

A 3 year-old boy is brought to your ED by his concerned mother. He complained of progressive pain in his right groin after playing in the back garden. The boy is a usually healthy, developmentally normal child. On initial assessment he is in obvious discomfort, with noticeable sweating of his right leg.

Question 1: Outline your differential diagnoses for this child's condition. *(included in stem)*

Expected Response	Details & Comments	1 min.
Envenomation /Toxins	Consistent with pain and distal sweating - Spider (Arachnid): Redback , Funnel Web - Snake: less likely, given symptoms and signs - Insect: bee, wasp, ant, other - toxins – organophosphates - allergic	All 3 Bold to pass and 2 others
Trauma/NAI	Occult trauma (unwitnessed) Fracture, soft tissue injury, joint injury	
Joint Infection	Less likely, given scenario. Septic arthritis; transient synovitis Too young for Perthes or SUFE	
Genitourinary	UTI Testicular Torsion	
Non specific infections	Influenza like illness Other viral illness	

Question 2: Your assessment leads to a diagnosis of Redback spider bite. He has persistent localised pain despite paracetamol. There is no evidence of systemic toxicity. What are the considerations in using antivenom in this situation.

Expected Response	Details & Comments		2min
Considerations	Indication: in this case, pain resistant to conventional analgesia. Other analgesia: NSAIDS, morphine, Mg, BZDs Benefits vs Risks Objectives of antivenom: in this case, analgesia Parameters to titrate Rx against – pain may last days Dose, Route Parental understanding and expectations ? Pre-medication		
	Pros	Cons	
Observation only	Non invasive Reasonable option if other analgesia effective Avoids foreign protein exposure	Requires time in ED	
Antivenom	Effective analgesia Will likely confirm diagnosis IM preferred route Will likely assure parent(s)	Risk of reaction (0.54%) Injection in a 3yo child May need multiple doses Difficult to determine specific aims of Rx (?complete analgesia)	
Premedication	None – not currently recommended (previous Hx of allergy unlikely in 3yo)	Antihistamine: sedation Adrenaline: tachycard; hyperT	
IM Route (prompt if needed)	Easy administration Rapid effect	Multiple injections if multi-dose	
IV Route	Allows antivenom to be titrated Indicated if child deteriorates with systemic toxicity	Not indicated in this setting No more efficacious than IM (CRITTA and RAVE trials)	

Question 3: You opt to administer IM antivenom to this child. Outline the principles of this treatment.

Expected Response	Details & Comments	1.5min
Consent	Explanation and verbal consent from parent(s). Identify and advise of potential risks.	All bold needed to pass
Dose	Adhere to guidelines. Not weight-based . One ampoule to commence with.	
Monitoring	Close observation: symptoms, HR, pulse oxim, limb signs, pain score. General obs: allergic reaction	
Titration	Prompt: When would you consider a second dose? Indications for repeat dosing (qualitative and quantitative); dosing intervals.	
Disposition	Needs 4-6 hr observation. Indications for discharge after this period. Specific and general considerations relevant to paediatrics	

Question 4: In general, compare and contrast Redback versus Funnel Web spider envenomation. (2.5 minutes)

Expected Response	Details & Comments	
Features	Demographics: including high risk groups, geography, climate Local features Systemic features First Aid Antivenom Disease impact: severity, complications, fatality rate, prognosis Current controversies	
Prompt bolded if needed	Redback	Funnel Web - Bold needed to pass
Spider characteristics	Small, hairless; not aggressive. Bites when disturbed.	Large, hairy. Females larger than males. Aggressive, esp males.
Demographics	Wide distribution in Aust. Related to NZ Katipo. Bites typically in summer.	Eastern Aust states. Severe envenomations confined to NSW and southern Qld.
Local features	Delayed pain. Profuse regional sweating.	Immediate pain. (Visible bite)
Systemic features	Abdo pain, headache, vomiting, shivering. Muscle weakness and paralysis	APO, CVS instability, sweating, lacrimation, salivation, altered conscious state. Muscle fasciculations and spasms.
First Aid	Avoid restrictive bandages. Ice.	Urgent, as death may be rapid. Pressure immobilisation; retain until IV access and antivenom available.
Antivenom	500U per ampoule. IM if no systemic envenomation. IV if severe systemic envenomation. In 200ml NS over 30 minutes. Rarely need > 3 amps.	125U per ampoule. 2 amps slow IV. May need up to 8 amps in total. Premed: steroids not mandatory. Adrenaline not indicated. Consider steroids after multiple doses.
Disease Impact	Very rarely fatal. But symptoms may last days. No reported death for more than 50 years, since antivenom.	Potentially rapid fatality without antivenom. Neuro-toxicity causing autonomic storm. 14 reported deaths, but none since antivenom.
Controversies / Future Directions	IM versus IV antivenom in systemic toxicity. Role of antivenom given via Bier's Block. Value of premedication to avert serum sickness with antivenom.	Period of observation required if asymptomatic without pressure immobilisation. Value of steroid pre-med with antivenom. New venom detection kit.

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

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

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