RCPCH Endorsed
Royal College of Paediatrics and Child Health
RCPCH Endorsement applies to UK APLS courses only

Advanced Life Support Group
A charity dedicated to saving life by providing training

SIMULATION CASE PST-3

Learning outcomes:

By the end of this simulation the candidates will:

- Apply the structured approach to trauma management
- Manage a patient with a spine fracture and neck and chest injuries

Simulation focus: Mild head injury. Fractured C4/5. Fractured larynx. Haemopneumothorax LEFT side

Timing: 0-3 minutes: introduction; remaining time: split equally between simulation and debrief

Introduction [Environment and Set]

Prior to the start of the simulation: one instructor to:

1. [Environment] Brief candidate group to *check the Environment*:

Room	Candidates to set up the room appropriately	
Equipment	Candidates to check required equipment present and accessible	

Equipment list:

In addition to generic equipment list:

- Appropriate size manikin to be ready for simulation in room and covered until simulation commences

2. [Set] Give *History*

You have received a pre-alert from the non-paramedic crew bringing in a 10-year-old boy, who is hit by a land rover on a zebra crossing when riding his bike from school

Then leave the room for candidate group to prepare and after 2 minutes, return with instructor team and commence simulation

[Dialogue] Simulation

Initial handover *{to tell candidate on your arrival with the child as a non-Paramedic SBAR to Team Leader}*

Situation	A 10-year-old boy riding his bike from school, he is hit by a land rover on a zebra crossing.	
Background	A 10-year-old boy was riding home from school. He entered the zebra crossing without looking for cars. The land rover hit him throwing him onto the pavement. He was found by the driver of the land rover on his side, unwilling to move complaining that his chest and neck hurt.	
Assessment	A	Hoarse voice
	B	RR 35/min
	C	Pulse 115/min; BP 100/70
	D	Agitated and uncooperative
	E	Generally grubby and feels cold to touch. Blood on his left forehead
Recommendation	Needs resuscitation and emergency management	

Clinical course *{to be given as the simulation progresses}*

If the cervical spine is not protected adequately the boy becomes apnoeic. Intubation is difficult as landmarks are displaced. Respiratory function and circulation continue to deteriorate until the Haemopneumothorax is drained. When the Haemopneumothorax is drained it drains 750ml of frank blood immediately; he becomes tachycardic with reduced pulse pressures: after this and cautious fluid replacement of 10ml / kg with early blood, the child stabilises.

Key treatment points

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Airway	Establish airway patency		
	Protect cervical spine		
Breathing	High flow oxygen via face mask		
	Chest drainage		
Circulation	Early IV access with wide bore cannulae x 2		
	Trauma bloods including blood for crossmatch		
Specific therapy	Call anaesthetist		
	Call surgeon		
	Consider pain relief		
Handover to PICU Consultant	S		
	B		
	A		
	R		

[Closure] Debrief

Using the learning conversation, carry out the debrief of both the technical and non-technical elements of the simulation.

The debrief will be for the team as a whole and should focus on some or all of the following:

- Technical skills in an A, B, C, D, E format and guided by the KTPs; in particular the safe and effective demonstration of all continuously assessed skills:
  - BLS
  - Defibrillation
  - Airway management
- Non-technical skills, including qualities of team membership and leadership:

Team members	• Clear communication • Respect • Flexibility • Assertiveness • Ability to listen
Team leaders	All of the above, plus • Full overview of all aspects associated with child, parents and team • Prioritises according to KTPs • Summarises and re-evaluates

- Feedback on Environment, where required

Potential issues that may be raised for this specific simulation

- Cervical spine protection versus airway management
- A tension pneumothorax needs urgent drainage; however, can be difficult to manage if a Haemopneumothorax is found. Discuss the need for urgent transfusion and the care of a chest drainage system.

At the end of the debrief, give the opportunity for candidates to ask questions, answer these and then summarise the key points

Discussion Points

- Reference should be made to the updated preference of thoracostomy over needle decompression

Assessment

Refer to the *Instructor guidance on simulations* document for a guide to the assessment of the simulation station. These assessments should be documented on the paper-based or electronic system for the final faculty meeting. Any scores of *serious concern* should be reported immediately to the course director.