

SIMULATION CASE PST-2

Learning outcomes:

By the end of this simulation the candidates will:

- Apply the structured approach to trauma management
- Manage a patient with significant abdominal injury

Simulation focus: Compensated shock due to penetrating injury of left kidney and spleen, and enlarging retroperitoneal haematoma. Laceration of left colon with early peritonitis

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 an 8 year old boy who fell from a tree and impaled himself on a metal stake.

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	An 8 year old boy who fell from a tree and impaled himself on a metal stake.	
Background	An 8 year old boy was building a tree house about 3 metres from the ground, when he fell from the tree and impaled himself on a metal stake in his father's rose patch. He is complaining of terrible abdominal pain, despite the fact that his mother pulled the metal stake out of him soon after the accident.	
Assessment	A	Patent
	B	RR 30/min
	C	Rapid, good volume pulse 130/min; BP 110/70; CRT 5 secs
	D	Shouting with pain initially. Keeping body still. Coherent.
	E	Pale and sweaty; single non-bleeding, penetrating wound left flank; screaming and writhing in agony
Recommendation	Needs resuscitation and emergency management	

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

Airway is patent. With oxygen by mask, colour is good and breathing seems to be adequate. While struggling to remove his oxygen mask, patient vomits and may have aspirated gastric contents. When oximeter connected, oxygen saturation seen to be 88% and requires endotracheal intubation and 100% oxygen before oxygenation improves. Blood pressure slowly deteriorates due to active intra-abdominal bleeding, but stabilises with massive haemorrhage protocol. Tender, distended abdomen as well as clinical evidence of ongoing intra-abdominal bleeding require urgent surgical consult. Where possible aim to use balanced crystalloid, saline is also acceptable.

Key treatment points



Preparation	Call trauma team		
	Briefing and allocation of staff		
Airway	Protect C-spine (Fall from a height)		
	Assess and maintain airway		
	Pass endotracheal tube and ventilate manually		
Breathing	Attempt high-flow oxygen by face-mask (and fail!)		
	Ventilate with 100% oxygen		
Circulation	Early IV access with wide-bore cannulae x 2		
	Trauma bloods including blood for cross-match		
Specific therapy	Passage of nasogastric tube		
	Chest X-ray (? free subdiaphragmatic air)		
	Surgical referral for peritonitis and ongoing haemorrhage		
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	<ul style="list-style-type: none"> • Clear communication • Respect • Flexibility • Assertiveness • Ability to listen
Team leaders	All of the above, plus <ul style="list-style-type: none"> • 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

- *Massive haemorrhage protocol. Penetrating injury management*

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

Discussion Points

- Candidates should consider resuscitation fluid bolus blood if available, or initial balanced crystalloid.
- Reference to POCUS as a treatment option (For lungs/heart opposed to abdomen).

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.