Paediatric Head Injury

Paediatric Simulation

Name:	Jessie Howard	**Observation at start**		**CRT:**	3s
D.O.B.	23/04 (Age of mannequin)	**RR:**	Low	**Temp:**	36.5
Address:	(Insert local address)	**ETCO2:**	-	**BM:**	7.3
		Sats:	92%	**Weight:**	Age appropriate
Hospital ID:	546 231 8566	**Heart Rate:**	High for age	**Allergy**	NKDA
Ward:	ED Resus	**BP:**	Normal		

Background to scenario	Specific set up
A paediatric patient is brought to ED resus having fallen down the stairs (or mechanism appropriate for age of mannequin). They are drowsy and have vomited, requiring intubation. After intubation they show signs of increased intracranial pressure which requires further management	Paediatric mannequin On ambulance trolley, on scoop C-spine protection (local protocols) Anaesthetic drugs and airway equipment Hypertonic saline/mannitol available
Required embedded faculty/actors	**Required participants**
ODP ED doctor/trauma team Paediatrician	Anaesthetist All roles can be participants in MDT sim

Past Medical History

Usually fit and well. Not fasted – had meal 30 minutes prior to the incident
Tripped on toy at top of stairs and fell down half a flight of stairs, no initial loss of consciousness
Has been drowsy with paramedics and vomited on route
No other obvious injuries

Drugs Home	Drugs Hospital
Nil regular	Nil yet

Brief to participants

You have been called to a paediatric trauma call.
The patient was transferred in without a pre-alert. The ED team have performed the primary survey
AMPLE history – as above.
Concerns about GCS/airway protection, please can you review for intubation and airway protection

Scenario Direction

Stage 1, 0– 5 minutes Assessment and intubation	
A	Clear at present, starting to snore, C spine protection applied. Vomit stains around mouth.
B	RR slow, sats drifting down 92%, chest clear
C	HR high for age, BP normal/low normal.
DE	Drowsy, rousable to pain only. Pupils equal and reactive bilaterally. No other obvious injuries. Moving all 4 limbs (not obeying commands)
Rx	Assess situation, call for help when appropriate Consideration of fluid resuscitation, blood products (although may not be necessary in this case) Prepare and conduct anaesthetic induction and intubation C-spine protection (manual in line stabalisation), consider orogastric tube for stomach decompression Consideration of neuro-protective stategies Consideration of ongoing sedation, ventilation, place of transfer, next steps Update/communication with parents
Stage 2, 5–10 minutes – increased ICP	
A	Intubated and ventilated
B	Sats improve to 96%. Ventilation as per settings applied
C	HR drops, BP increases
DE	Anaesthetised. Pupils – R becomes larger, sluggish/fixed
Rx	Identification of change in situation and declaration of incident Neuroprotective mechanisms Treatment with osmolar therapy – mannitol or hypertonic saline Next steps – CT scan/involvement of neurosurgery/preparation for transfer/theatre Update /communication with parents Scenario can end when discussions/planning of next steps has taken place

Guidelines

Pauline M Cullen, MBChB FRCA, Paediatric trauma, Continuing Education in Anaesthesia Critical Care & Pain, Volume 12, Issue 3, June 2012, Pages 157–161, https://doi.org/10.1093/bjaceaccp/mks010
Paediatric Life Support Courses

Guidance for Parent Role

Opening lines/questions/cues/key responses What is wrong with my child? They were fine when they fell.	Relevant HPC / PMH History of child as above
Concerns Very concerned about the reduced level of consciousness	Actions Not obstructive, but wants to stay with child
Guidance for ODP role	**Guidance for other roles**
Actions Support management Can anticipate next steps depending on level of participants	Support MDT decision making
Guidance for Role e.g. ITU/Anaesthetic Senior	**Other challenges (depending on level of participant)**
Expectations/actions Available by phone but not able to help in person (depending on level of participants)	Difficult IV access, consideration of IO route Parents – upset. Aspects of breaking bad news communication techniques

Session Objectives	
Clinical	Management of paediatric trauma Management of increased ICP in children
Non-technical skills	
Teamworking	Coordinating activities of trauma team, role allocation,, delegation, exchange of information on arrival
Task management	Planning for next steps, prioritising tasks and delegating, utilising protocols
Situational awareness	Gathering information at each step, recognising critically ill patient and deterioration, anticipating next steps
Decision making	Identifying options for management, balancing risks and selecting options – drug/airway choices, continuous re-evaluation

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