Adult Head Injury

Critical Incidents

Name:	D Spencer	**Observation at start**		**CRT:**	4s
D.O.B.	30/04 (42Y)	**RR:**	23	**Temp:**	35.7
Address:	(Insert local address)	**ETCO2**	-	**BM:**	7.2
		Sats:	98% on A	**Weight:**	110Kg
Hospital ID:	144 632 8545	**Heart Rate:**	110	**Allergy**	NKDA
Ward:	ED resus	**BP:**	105/65		

Background to scenario	Specific set up
A patient is brought into ED with an isolated head injury and low GCS requiring intubation. Once intubated they show signs of high ICP, requiring treatment and preparation for transfer to neurosurgical centre Can be done as 2 part sim – 1) conduct of anaesthesia, 2) treatment of ICP and preparation for transfer	Mannequin on ED trolley, on scoop and C spine protection Anaesthetic induction drugs and anaesthetic chart Airway kit and mode of ventilation (Mapleson C circuit/portable ventilator/ambu bag) Transfer trolley
Required embedded faculty/actors	**Required participants**
ODP ED staff Neurosurgeons (by phone)	Anaesthetist ODP and ED staff can be participants in MDT Sim

Past Medical History

Previously fit and well
Was drinking at party at friend's house, loud thud heard and found at the bottom of the stairs.
Incoherent speech and intermittently drowsy at scene, C-spine protection applied and brought to ED

Drugs Home	Drugs Hospital
Nil reg	Nil yet

Brief to participants

You have been called to ED resus for a trauma call, patient already arrived and primary survey done by ED
Handover from ED staff – PMH above. No other obvious injuries on primary survey
Concerns about head injury – fluctuating GCS and potential for airway compromise, intermittently wakes up and is agitated, please can you intubate this patient for a CT head

Scenario Direction

Stage 1, 0– 5 minutes Assessment and Intubation	
A	Patent currently, during examination patient intermittently shouts and moves. In C-spine protection
B	RR 23, sats 98% on A, chest clear.
C	HR 110, BP 105/65, peripherally cool. Has one cannula (can tissue on checking for additional challenge)
DE	Pupils equal and reactive bilaterally. GCS E2-3, V2-4, M 4-5. No other injuries
Rx	Initial assessment – may need to do quick assessment if patient is agitated and presents threat to himself or others, using ATLS or equivalent principles Preparation and conduct of induction of anaesthesia and intubation (preparation of drugs and equipment, choice of drugs, conduct of induction in busy area, C-spine protection) Consideration to ongoing anaesthesia and ventilation, invasive BP monitoring Neuroprotective measures including avoidance of hypotension
Stage 2, 5–10 minutes Increased ICP	
A	Intubated
B	As per ventilation settings, sats 98% ETCO2 dependant on ventilator settings
C	HR 35, BP 198/110
DE	Pupils – R dilated and sluggish to respond, anaesthetised as per participant choice
Rx	Identification of increasing intracranial pressure Measures to treat – osmotic agents/other measures after discussion with senior/neurosurgery Consideration and facilitation of urgent CT scan (CT scan shows SAH with midline shift) Discussion with neurosurgical team – Accept for intervention
Stage 3, 10– 15 minutes Preparation for transfer	
AB	Intubated and ventilated – sats 98% ETCO2 dependant on ventilator settings
C	HR 70, BP 155/85
DE	Pupils R responding to light after treatment for high ICP, anaesthetised Patient has been accepted for intervention by neurosurgical unit
Rx	Preparation for transfer (Organisation of ambulance, Prep patient as per AoA transfer guidelines) Consideration of other emergency anaesthetic activity and handover of responsibilities Consideration of monitoring of patient while other discussions take place

Guidelines

Judith Dinsmore, MBBS FRCA, Traumatic brain injury: an evidence-based review of management, Continuing Education in Anaesthesia Critical Care & Pain, Volume 13, Issue 6, December 2013, Pages 189–195, https://doi.org/10.1093/bjaceaccp/mkt010
Nathanson, M.H., Andrzejowski, J., Dinsmore, J., Eynon, C., Ferguson, K., Hooper, T., Kashyap, A., Kendall, J., McCormack, V., Shinde, S., Smith, A. and Thomas, E. (2020), Guidelines for safe transfer of the brain-injured patient: trauma and stroke, 2019. Anaesthesia, 75: 234-246. https://doi.org/10.1111/anae.14866

Guidance for Patient Role

Opening lines/questions/cues/key responses	Relevant HPC / PMH
Intermittently shout/wave arms around (tell participants this is happening) GCS E2-3, V2-4, M 4-5	If checked – a friend is available by phone for collateral (as per PMH)
Guidance for ODP role	**Guidance for ED Doctor**
New to role, capable with tasks but not very experienced Need direction for next steps (depending on confidence of anaesthetic participant)	Has done some anaesthetics in the past – able to assist with tasks as asked to by anaesthetic participant
Guidance for Role e.g. ITU/Anaesthetic Senior	**Other challenges (depending on participant experience and confidence)**
Expectations/actions Only available by phone – 30 minutes away, can start making their way in, but advise as necessary	Difficult IV access – requiring IM sedatives or IO access Agitation – requiring sedation in emergency/unfasted patient Elderly patient on anti-platelet/anticoagulant requiring reversal

Session Objectives	
Clinical	Management of acutely unwell patient in ED/isolated traumatic head injury Management of increasing ICP in a patient with a head injury Transfer of patients
Non-technical skills	
Teamworking	Coordinating team activities (using available clinicians for necessary roles including assessing capability of team), exchanging information throughout, supporting junior/less experienced team members
Task management	Planning and preparing for next steps, maintaining standards – using guidelines where appropriate, identifying and utilising resources – team members and their skills
Situational awareness	Gathering information (on arrival and throughout scenario), recognising deterioration, anticipating next steps
Decision making	Identifying/balancing and selecting options (sedation/anaesthetic for agitated patient), continuous re-evaluation of scenario