Interhospital Transfer – Tension Pneumothorax

Name:	B Willams	Observations at start		CRT:	2s
D.O.B.	18/10 (73 years)	RR:	16	Temp:	37.9
Address:	(Insert local address)	ETCO2:	4.6	BM:	5.5
		Sats:	98%	Weight:	79Kg
Hospital ID:	416 921 6275	Heart rate:	98	Allergy	NKDA
Ward:	ED	BP:	115/76		

Background to scenario	Specific set up
A patient had a mechanical fall in their home sustaining an intra-cranial haemorrhage and 2 rib fractures. They have been intubated for neuroprotection and transfer. On route the patient suffers a tension pneumothorax This can take place in an ambulance on route or as the ambulance is arriving at receiving (unfamiliar) hospital depending on resources available to simulate an ambulance	Mannequin on transfer trolley with monitoring Intubated and ventilated Cannulated, arterial line in situ, catheterised Sedation running Anaesthetic and emergency drugs, transfer equipment as per local policy available Notes/CT results available Space to simulate ambulance +/- ED

Required embedded faculty/actors	Required participants
ODP/ICU nurse Ambulance driver/ambulance personnel	Anaesthetist ODP/ICU nurse n MDT sim

Past Medical History

PMH: HTN, hypercholesterolaemia, otherwise independent and active
Mechanical fall in their home earlier today, presented with new onset confusion and chest pain. On CT scan found to have 2 left sided rib fractures (uncomplicated, no pneumothorax) and an extradural haemorrhage. Neurosurgery have accepted the patient for surgical drainage. The patient had a fluctuating GCS and was intubated for neuroprotection/airway protection. Pupils pre intubation were reactive bilaterally. They are being transferred to the regional neurosurgical centre for surgical treatment.

Drugs Home	Drugs Hospital
Amlodipine Aspirin Atorvastatin	Anaesthetic induction drugs of choice Sedation with propofol infusion Vasopressor (metaraminol) infusion

Brief to participants

You are part of the on call anaesthetic team in a DGH (without neurosurgical facilities)
Patient history as above. The theatre/neurosurgical/anaesthetic teams are aware of the patient at the receiving hospital. You are in an ambulance with an ICU nurse/ODP transferring the patient to the neurosurgical centre (directly to theatre) X distance away. You left your hospital about 10 mins ago.
You may need to orientate participants to any additional transfer equipment that is set up.

Scenario Direction

Stage 1 (Assessment and treatment)

A	Intubated and ventilated
B	Set up As per ventilator settings (RR 18) ETCO2 4.6 FiO2 0.5 sats 98% Saturations gradually decrease to 85%, ventilator starts to alarm – tidal volume loss → high pressure If auscultated AE reduced on side of rib fractures, trachea deviated away from side of rib fractures
C	Set up HR 98 BP 115/76 On metaraminol inf 2mg/h HR ↑ 135 BP ↓ 85/32
DE	Sedated on propofol 1% 20ml/h (follow local protocols) Pupils equal and reactive bilaterally
Rx	Recognition of a critical incident and communication with the ambulance team Awaiting safe navigation and stopping of ambulance, staying seated until this time. (ideally must not attempt resuscitation in moving ambulance) Assessment of patient and diagnosis of tension pneumothorax, treatment with needle decompression

Scenario Direction

Stage 1 (Decision making)

A	Remains intubated
B	Set up as per ventilator, after needle decompression sats 90% on FiO2 1.0, ETCO2 4.0. Low tidal volume on ventilator, no high pressure (needs chest drain)
C	HR 115 BP 140/85
DE	Sedated, pupils equal and reactive
Rx	Understanding that definitive treatment with chest drain is required Discussion and decision making regarding place of safety, continue to receiving hospital or back to referring hospital, utilise senior support in decision making Scenario can end when this decision is made

Guidelines

Association of Anaesthetists Guideline for Safe transfer of the brain-injured patient: trauma and stroke, 2019 https://anaesthetists.org/Home/Resources-publications/Guidelines/Safe-transfer-of-the-brain-injured-patient-trauma-and-stroke-2019
FICM Guidance on the Transfer of the Critically Ill Adult https://ics.ac.uk/resource/transfer-critically-adult.html

Guidance for Patient Role

Opening lines/questions/cues/key responses	Relevant HPC / PMH
Intubated	
Concerns	Actions

Guidance for ODP/ICU nurse role	Guidance for ambulance driver
Actions Experience level dependent on level of participant If junior anaesthetist, experienced ODP/ICU nurse and vice versa Support with provision of drugs and equipment	When incident declared, advice not to get up and 'stop' at first available area
Opening lines/questions/cues/responses/Concerns If inexperienced – have been transfer trained but first solo transfer, ask for guidance on what is needed	

Guidance for Role e.g. ITU/Anaesthetic Senior	
Expectations/actions Level of supervision dependent on level of participant, support in person/by phone as appropriate	

Session Objectives

Clinical	Inter-hospital transfer of brain injured patient Managing emergency during transfer
Non-technical skills	
Teamworking	Coordinating response during a critical incident, communicating with the MDT including senior support, exchanging information with ambulance team, ODP and senior, assessing capabilities in managing situation at roadside and supporting team members
Task management	Prioritisation of tasks in treating patient, planning and preparing for next steps including decision making, following guidelines in transfer
Situational awareness	Gathering information on patient deterioration, recognising situation and understanding implications, anticipating next steps
Decision making	Identifying options, balancing risks and benefits at all stages, continuous re-evaluation

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