

CAN'T INTUBATE, CAN'T VENTILATE: PLAN A-D

MODULE: AIRWAY

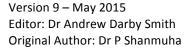
TARGET: BASIC LEVEL TRAINEES & ALL ANAESTHETISTS

BACKGROUND:

Management of the Can't Intubate, Can't Ventilate situation is a core skill for all anaesthetists. Optimal management of this situation should incorporate well-established Difficult Airway Society guidelines, and where appropriate local factors (relating to equipment availability and local protocols).

RELEVANT AREAS OF THE ANAESTHETIC CURRICULUM

IG_BS_07	Demonstrates effective pre-oxygenation, including correct use of the mask, head position and clear
AM_BS_04	explanation to the patient.
	In respect of intravenous induction:
	Makes necessary explanations to the patient
IG_BS_08	Demonstrates satisfactory practice in preparing drugs for the induction of anaesthesia
	Demonstrates proper technique in injecting drugs at induction of anaesthesia
	Manages the cardiovascular and respiratory changes associated with induction of anaesthesia
	In respect of airway management:
	 Demonstrates optimal patient position for airway management.
	 Manages airway with mask and oral/nasopharyngeal airways
	Demonstrates hand ventilation with bag and mask
IG_BS_10	Able to insert and confirm placement of a Laryngeal Mask Airway
AM_BS_05	 Demonstrates correct head positioning, direct laryngoscopy and successful nasal/oral
	intubation technique(s) and confirms correct tracheal placement.
	Demonstrates appropriate use of bougies.
	 Demonstrates correct securing and protection of LMAs/tracheal tubes during movement,
	positioning and transfer.
IG_BS_12	Demonstrates failed intubation drill
AM_BS_10	Demonstrates management of "Can't intubate, Can't Ventilate" scenario. [Cross Reference; Critical
AIVI_B3_10	incidents].
AM_BS_14	Demonstrates small and large bore needle cricothyrotomy and manual jet ventilation
AM_BS_15	Demonstrates surgical cricothyroidotomy
CI_BK_13	Difficult/failed mask ventilation
CI_BK_14	Failed intubation
CI_BK_15	"Can't intubate, can't ventilate"
CI_BS_01	Demonstrates good non-technical skills such as: [effective communication, team-working,
	leadership, decision-making
CI_BS_02	Demonstrates the ability to recognise a deteriorating situation early through careful monitoring
CI_BS_03	Demonstrates the ability to respond appropriately to each incident listed above
CI_BS_04	Shows how to initiate management of each incident listed above
CI_BS_05	Demonstrates ability to recognise when a crisis is occurring
CI_BS_06	Demonstrates how to obtain the attention of others and obtain appropriate help when a crisis is
CI_B3_00	occurring







INFORMATION FOR FACULTY

LEARNING OBJECTIVES:

- Applied understanding of the failed intubation protocols Plan A to Plan D
- Recognise problem early, call for help early.
- Local variances to published guidelines e.g. Equipment availability and locations

SCENE INFORMATION:

• Location: Anaesthetic Room

GA for elective laparoscopic cholecystectomy. Ventilation initially possible while waiting for muscle relaxation, but becomes very difficult after intubation attempts. LMA ventilation fails. Maximal Plan C (2 handed, 2 person plus airway adjuncts) fails, requiring cricothyroidotomy. If help is provided to the participant, then this can be a more senior trainee/consultant – allowing demonstration of handover communication, situational awareness, leadership and other non-technical skills for both participants.

EQUIPMENT & CONSUMABLES

PERSONS REQUIRED

Manikin – On theatre trolley. Checked anaesthetic machine Stocked Airway trolley & Simulated Anaesthetic drugs Plan D equipment, either:

- Scalpel and #6 COETT
- Ravussin needle and Manujet (or local equipment)

IV Fluids and giving set Self-inflating Bag-valve-mask Anaesthetic Novice
Anaesthetic Assistant
Anaesthetic Senior Trainee/Consultant (optional)

PARTICIPANT BRIEFING: (TO BE READ ALOUD TO PARTICIPANT)

You are the anaesthetist for a solo upper GI list. Please undertake the anaesthetic for Jennifer Roberts, 40 years old. She is due to undergo a laparoscopic cholecystectomy. It is her first ever operation. She gets recurrent cholecystitis and gallstones. She has an increased BMI of 36. Her only medications are occasional gaviscon for when she gets indigestion. She attributes this to her gallstones. She has had a previous rash after taking Penicillin. She is fully fasted.

Her airway assessment reveals a Mallampati score of 2, mouth opening greater than 3cm, and very slightly limited neck movements.

Her preoperative blood tests are all normal.





'VOICE OF MANIKIN' BRIEFING:

You are Jennifer Roberts. You prefer to be called Jenny. You are about to undergo a laparoscopic cholecystectomy (gallbladder removal using keyhole surgery). This is your first operation, and so you are quite nervous. You don't have any medical problems except for gallstones and frequent episodes of cholecystitis. You have had a rash following penicillin for a UTI previously.

'ANAESTHETIC ASSISTANT' BRIEFING:

The anaesthetist is going to experience a difficult airway. Be supportive to their requests and instructions. Do not volunteer suggestions unless the participant is particularly junior or is struggling significantly.

If the participant is relatively experienced or senior, then an additional level of challenge can be provided by acting as relatively inexperienced – not anticipating the next requests, not knowing where equipment is and passing equipment to anaesthetists inappropriately (e.g. bougie wrong way round, wrong size OP airway)





CONDUCT OF SCENARIO

EXPECTED ACTIONS

- Ensure that anaesthetic machine is checked.
- Ensure that the induction drugs and emergency drugs are drawn up and correctly labelled.
- Review anaesthetic plan with assistant (IV induction, size of FTT)
- Allow assistant to perform check-in and WHO.
- Review history and examination if required.
- Attach monitoring
- Check IV access
- Optimise position of patient prior to induction.
- Pre-oxygenate
- Give appropriate induction drugs, including muscle relaxant.

INITIAL SETTINGS

- A: Patient and Self-maintained. Fixed neck.
- B: RR 16, SpO2 96% RA → 99% w/preoxygenation
- C: HR 90 (Sinus), BP 130/75
- D: Eyes open and alert. Calm but anxious.
- E: Hospital gown, TEDs.

INDUCTION

- A: Airway settings normal initially during ventilation while awaiting muscle relaxation
- B: RR 0 over 1 min. SpO2 98%
- C: HR 100 (Sinus), BP 90/50
- D: Eves closed (AVPU).

EXPECTED ACTIONS

 Ventilation initially possible while awaiting muscle relaxation.

INTUBATION ATTEMPTS

- A: Fixed neck, tongue swelling, laryngospasm.
 B: RR 0. EtCO2 intially 0. SpO2 80% after 5
- minutes (sigmoid trend). Maximal airway resistance.
- C: See changes below.
- D: Eyes closed (AVP<u>U</u>).

LOW DIFFICULTY

- SpO2 falls to 70% over further 5
- Help arrives early/highly skilled assistant. E.g. Can assemble Manujet.

NORMAL DIFFICULTY

- SpO2 to 60% over further 3 mins
- Bradycardia at SpO2 60% (8 mins)
- SpO2 improves with cannula cricothyroidotomy and jet ventilation – 90% over 1 min.

HIGH DIFFICULTY

- SpO2 to 60% over further 2 mins.
- Bradycardia at SpO2 60% (7-8mins)
- PEA arrest at 10 mins.
- Cannula cricothyroidotomy fails perform surgical thyroidotomy.
- Relatively unskilled assistant.

EXPECTED ACTIONS

- Call for help
- Plan A: Reposition, alternate laryngoscopes, bougie, external laryngeal manipulation.
- Plan B: LMA/ILMA insertion and secondary intubation attempt.
 - Plan C: Face mask ventilation, oral +/- NP airway, 2-handed, 2-person ventilation.
- Plan D: Reposition for cricothyroidotomy, identify landmarks, assemble and test equipment. Perform surgical thyroidotomy.

RESOLUTION

When patient is safe to transfer to theatre

Version 9 – May 2015 Editor: Dr Andrew Darby Smith Original Author: Dr P Shanmuha

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	ANA	ESTHETIC	CRE	CORD SH	EET		
PATIENT DETAILS / ADD. Hospital No. SURNAME: Jennifer						NF	15
(Block Letters) FORENAMES: 40 years	old						
Address: Ward/Hosp.				s) proposed: ic Cholecystecto	omv		
DOB:	Sex: M / F			S: ELECTIVE /		URGENT / EN	MERGENCY
	Anaesth	etist's pred	pera	ative assess	ment by		
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Date:	Time:		Sign	ature			
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Medical history:							HR:
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NBM Solids: 220 Clear Fluids:		Pregnancy: N _actation:	eg	X = missing C = caps / crown	L = loose ns D = damag	B = bridge	Apfel Score
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Occasional Gaviscor	n			Penicillin			
☐ Haematology [Biochemistry	Coag.		ECG		Other:	
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estiga		☐ Gp. & Sa	ve	X - Ray			
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CONSENT: GA	Sedation EPCA	☐ Epidura	l	Spinal	Region	al Sup	pository
Notes / Discussion / Te	The state of the s						
Consented for GA wit	th intubation.						
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Anaesthetic Informat	tion to extend on our	and by notions					
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All orders / information regarding medication & fluids must be entered on patient's drug prescription & administration record SPG2299

	Anaesthetist	s). Nan	ne Gr	age C	νpe	erati	ion	Pr	oce	du	re(s)	:			S	ure.	eon	(S): I	vame	Grad	le	
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DEBRIEFING

POINTS FOR FURTHER DISCUSSION:

Technical:

- Difficult Airway protocols
- Procedural techniques
 - o Cannula Cricothyroidotomy
 - Manujet/Sanders/Jet ventilation
 - Surgical Cricothyroidotomy

Non-technical:

- Situation awareness
- Prioritisation
- Task allocation
- Leadership
- Team working
- Communication and handover during crises

DEBRIEFING RESOURCES

- 1. Difficult Airway Society Guidelines: http://www.das.uk.com/guidelines/ddl.html http://www.das.uk.com/guidelines/downloads.html (NB. Free iDAS app available from iTunes)
- 2. NAP4: Major complications of airway management in the UK http://www.rcoa.ac.uk/index.asp?PageID=1089
- 3. NHS National Institute for Innovation and Improvement: 'Just a Routine Operation Patient Story' http://www.institute.nhs.uk/safer_care/general/human_factors.html





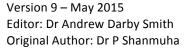
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KEY POINTS:

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- Recognise problem early, call for help early.
- Local variances to published guidelines e.g. Equipment availability and locations.

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WORKPLACE-BASED ASSESSMENTS

	Initial Assessment of Competency Certificate							
' '								
IAC_D06	Demonstrates the routine for dealing with failed intubation on a manikin							
IAC_D03	Demonstrates cardio-pulmonary resuscitation on a manikin (0-3 months).							
IAC_C08	Discuss the routine to be followed in the case of a failed intubation							

		Basic Level WBPA's
Γ	CIB D01	Demonstrates the management of the following specific conditions in simulation
	CIB_DOI	Failed intubation

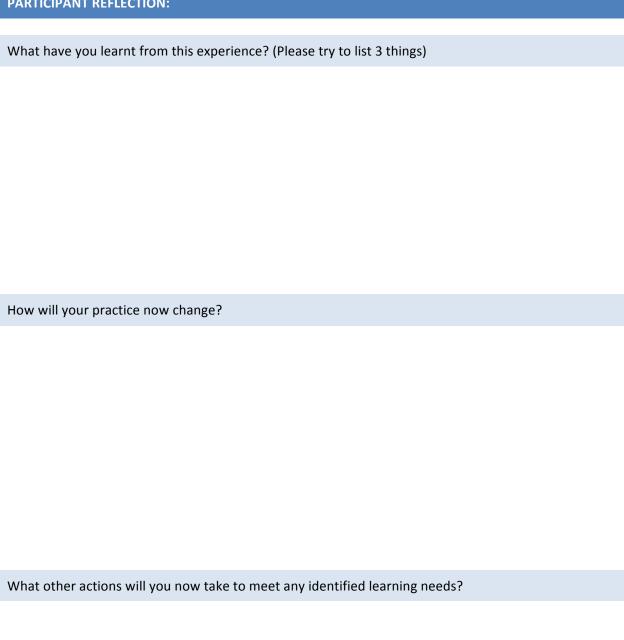
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PARTICIPANT REFLECTION:







PARTICIPANT FEEDBACK	
Date of training session:	
Profession and grade:	
What role(s) did you play in the scenario? (Please tick)	
Primary/Initial Participant	
Secondary Participant (e.g. 'Call for Help' responder)	
Other health care professional (e.g. nurse/ODP)	
Other role (please specify):	
Observer	

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I found this scenario useful					
I understand more about the scenario subject					
I have more confidence to deal with this scenario					
The material covered was relevant to me					

Please write down one thing you have learned today, and that you will use in your clinical practice.

How could this scenario be improved for future participants?

(This is especially important if you have ticked anything in the disagree/strongly disagree box)





FACULTY DEBRIEF – TO BE COMPLETED BY FACULTY TEAM

What went particularly well during this scenario?
What did not go well, or as well as planned?
what did not go wen, or as wen as planned:
Why didn't it go well?
How could the scenario be improved for future participants?

