FAILED ELECTIVE INTUBATION: PLAN A-C

MODULE: AIRWAY

TARGET: NOVICE, BASIC LEVEL TRAINEES & ALL ANAESTHETISTS

BACKGROUND:
Management of the unexpectedly difficult airway 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

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<th>IG_BS_07</th>
<th>AM_BS_04</th>
<th>Demonstrates effective pre-oxygenation, including correct use of the mask, head position and clear explanation to the patient.</th>
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| IG_BS_08 | AM_BS_05 | In respect of intravenous induction:  
- Makes necessary explanations to the patient  
- 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 general anaesthesia |
| IG_BS_10 | AM_BS_06 | 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  
- Able to insert and confirm placement of a Laryngeal Mask Airway  
- 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 | AM_BS_07 | Demonstrates failed intubation drill |
| AM_BS_08 | AM_BS_09 | Demonstrates correct use of advanced airway techniques including but not limited to Proseal, LMA supreme, iGel |
| AM_BS_10 | AM_BS_11 | Demonstrates management of “Can’t intubate, Can’t Ventilate” scenario. [Cross Reference; Critical incidents]. |
| AM_BS_12 | AM_BS_13 | Demonstrates small and large bore needle cricothyroidotomy and manual jet ventilation |
| AM_BS_14 | AM_BS_15 | Demonstrates surgical cricothyroidotomy |
| CI_BK_13 | CI_BK_14 | Difficult/failed mask ventilation |
| CI_BK_15 | CI_BK_16 | “Can’t intubate, can’t ventilate” |
| CI_BS_01 | CI_BS_02 | Demonstrates good non-technical skills such as: [effective communication, team-working, leadership, decision-making] |
| CI_BS_03 | CI_BS_04 | Demonstrates the ability to recognise a deteriorating situation early through careful monitoring |
| CI_BS_05 | CI_BS_06 | Shows how to initiate management of each incident listed above |
| CI_BS_07 | CI_BS_08 | Demonstrates ability to recognise when a crisis is occurring |
| CI_BS_09 | CI_BS_10 | Demonstrates how to obtain the attention of others and obtain appropriate help when a crisis is occurring |

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

LEARNING OBJECTIVES:

- Applied understanding of the failed intubation protocols – Plan A to Plan C
- Recognise problem early, call for help early.

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) able to maintain sates. If help is provided to the participant, then this can be a more senior trainee or a consultant – allowing demonstration of handover communication, situational awareness, leadership and other non-technical skills for both participants.

EQUIPMENT & CONSUMABLES

| Manikin – On theatre trolley. | Anaesthetic Novice |
| Checked anaesthetic machine | Anaesthetic Assistant |
| Stocked Airway trolley & Simulated Anaesthetic drugs | Anaesthetic Senior Trainee/Consultant (optional) |
| 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 | |

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

### INITIAL SETTINGS
- 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: Eyes closed (AVPU).

### 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.

### Low Difficulty
- With 2 person technique, and airway adjuncts, ventilation possible and resistance normal.
- SpO2 improves to 90-92%
- Senior help arrives quickly.

### Normal Difficulty
- SpO2 to 60% over further 3 mins
- Bradycardia at SpO2 60% (8 mins)
- With maximal Plan C efforts, SpO2 maintains at 85%. Airway resistance level 1.

### High Difficulty
- SpO2 to 60% over further 2 mins
- Bradycardia at SpO2 60% (7-8mins)
- Plan C Efforts, SpO2 maintains at 85%. Airway resistance level 2.
- Relatively unskilled assistant.

### Resolution
- When patient is safe to transfer to theatre.
Jennifer Roberts
40 years old

Procedure(s) proposed:
Laparoscopic Cholecystectomy

Anaesthetist's preoperative assessment by

Name: 
Grade: [ ] Cons [ ] AS [ ] SG [ ] Trainee

Date: 
Time: 
Signature

Anaes / Surg history:
No previous GAs

Medical history:
Recurrent cholecystitis and gallstones
Occasional heartburn
Increased BMI (36)

VTE Risk: [ ] High [ ] Low

NBM since
Solids: 2200 yesterday
Clear Fluids: 
Pregnancy: Neg
Lactation: 

Relevant Medication:
Occasional Gaviscon

O/E
Unremarkable

Airway Assessment
Mouth Opening:
MP Score: 1 2 3 4
Jaw: MP 2, Mouth opening
Neck: 3cm, slightly limited neck

TEETH

8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

X = missing
L = loose
B = bridge
C = caps / crowns
D = damaged

ASA
BP:
HR:
Temp:
Weight:
Height:
BMI:
Smoke:
Alcohol:
Apfel Score

Penicillin

ALLERGIES

□ Haematology
FBC
Hb 11.8

□ Biochemistry
U & E
NAD

□ Coag
NAD

□ ECG
NAD

□ Gp. & Save

□ X - Ray

□ X - Match

□ Spinal

□ Regional

□ Suppository

Other:
Abdo USS - Gallstones

Investigations

CONSENT: [ ] GA [ ] Sedation [ ] Epidural
[ ] Spinal [ ] Regional [ ] Suppository

[ ] PCA [ ] EPCA

□ Anaesthetic Information leaflet received by patient

For attention of ward staff: (further investigations, fasting, continue/omit current medication, etc.)

Consented for GA with intubation.

Risks explained: dental damage, sore throat, post-op nausea and vomiting.
DEBRIEFING

POINTS FOR FURTHER DISCUSSION:

Technical:
- Difficult Airway protocols
- Procedural techniques
  - 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

   http://www.das.uk.com/guidelines/downloads.html (NB. Free iDAS app available from iTunes)


3. NHS National Institute for Innovation and Improvement: ‘Just a Routine Operation – Patient Story’
INFORMATION FOR PARTICIPANTS

KEY POINTS:
• Applied understanding of the failed intubation protocols – Plan A to Plan C
• Recognise problem early, call for help early.

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WORKPLACE-BASED ASSESSMENTS

Initial Assessment of Competency Certificate

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<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAC_D06</td>
<td>Demonstrates the routine for dealing with failed intubation on a manikin</td>
</tr>
<tr>
<td>IAC_D03</td>
<td>Demonstrates cardio-pulmonary resuscitation on a manikin (0-3 months).</td>
</tr>
<tr>
<td>IAC_C08</td>
<td>Discuss the routine to be followed in the case of a failed intubation</td>
</tr>
</tbody>
</table>

Basic Level WBPA’s

<table>
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<tbody>
<tr>
<td>CIB_D01</td>
<td>Demonstrates the management of the following specific conditions in simulation</td>
</tr>
<tr>
<td></td>
<td>• Failed intubation</td>
</tr>
</tbody>
</table>

FURTHER RESOURCES

1. Difficult Airway Society Guidelines:
   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’
PARTICIPANT REFLECTION:

What have you learnt from this experience? (Please try to list 3 things)

How will your practice now change?

What other actions will you now take to meet any identified learning needs?
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

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I found this scenario useful</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand more about the scenario subject</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have more confidence to deal with this scenario</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The material covered was relevant to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

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)
What went particularly well during this scenario?

What did not go well, or as well as planned?

Why didn’t it go well?

How could the scenario be improved for future participants?