### FAILED INTUBATION DURING RSI: PLAN A, C & D

**MODULE:** NOVICE & AIRWAY

**TARGET:** NOVICE INITIAL ASSESSMENT OF COMPETENCY

**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).

Demonstration of a failed intubation drill is part of the ‘Initial Assessment of Competency’ that novice anaesthetists undergo. This is a standardised scenario – so all participants undergo the same conditions with automated consequences for good practice e.g. adequate preoxygenation. This allows for standardised conditions for assessment of performance.

This scenario simulates a patient requiring an anaesthetic for an emergency operation with a high risk of aspiration, necessitating rapid sequence induction. This allows demonstration of a progression through the DAS guidelines for Plan A, Plan C and finally Plan D.

This scenario has been designed to be completed as part of the assessment process for the novice ‘Initial Assessment of Competency’ certificate.
### RELEVANT AREAS OF THE ANAESTHETIC CURRICULUM

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  - 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_05 | 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 | Demonstrates failed intubation drill |
| AM_BS_10 | Demonstrates management of “Can’t intubate, Can’t Ventilate” scenario. [Cross Reference; Critical 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 occurring |
INFORMATION FOR FACULTY

LEARNING OBJECTIVES:

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

SCENE INFORMATION:

- Location: Anaesthetic Room

(GA for strangulated inguinal hernia with high risk of bowel involvement and conversion to laparotomy. Unexpected difficult intubation with rapid desaturation and eventual need for cricothyroidotomy)

EQUIPMENT & CONSUMABLES

- 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

PERSONS REQUIRED

- Anaesthetic Novice
- Anaesthetic Assistant
- Third person in the room
- Anaesthetic Senior Trainee/Consultant (Optional)

PARTICIPANT BRIEFING: (TO BE READ ALOUD TO PARTICIPANT)

You are the anaesthetist for the emergency list. The next patient has a strangulated right inguinal hernia, which the surgeon believes has a reasonable chance of conversion to laparotomy due to bowel involvement. The patient is William James, a 62 year old who has had no previous operations. He has had 3-4 days of abdominal pain, hernia pain and a few episodes of vomiting in the last 24 hours. He has no other medical problems, no medications and has had previous skin reaction to penicillin. He has fasted for 8 hours, but has vomited in the last 4 hours.

His airway assessment reveals a Mallampati score of 2, good mouth opening and jaw slide, but slightly limited neck movement.

His blood tests are normal.

‘VOICE OF MANIKIN’ BRIEFING:

You are William James, a 62-year-old man. You have never had an operation before. You have no medical problems, but have had a long-standing inguinal hernia on the right side. Over the last few days this has started to hurt more and more, and you have been vomiting over the last 24 hours. You don’t usually take medications, but have been taking Paracetamol over the last few days. You developed a rash with Penicillin when you were a child and have avoided it since.
‘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 significantly struggling.

If the participant is relatively experienced/senior, then you may consider to act as relatively inexperienced (i.e. Not anticipating the next requests, not knowing where equipment is and passing equipment to anaesthetists inappropriately).
CONDUCT OF SCENARIO

EXPECTED ACTIONS

- Ensure that anaesthetic machine is checked.
- Ensure induction/emergency drugs are drawn up and correctly labelled.
- Review anaesthetic plan with assistant (RSI, size of Laryngoscope and ETT)
- Allow assistant to perform check-in and WHO.
- Review history and exam if required.
- Attach monitoring
- Check IV access
- Optimise position of patient
- Suction on and ready at hand
- Ensure that table tilts head down
- Ensure presence of third person in room
- Pre-oxygenate
- Give appropriate RSI drugs
- Position for laryngoscopy

INITIAL SETTINGS

A: Patent and Self-maintained
B: RR 16, SpO2 96% RA
C: HR 90 (Sinus), BP 135/80, IV Access
D: Eyes open and alert. Calm but anxious.
E: Hospital gown, TEDs.

RAPID SEQUENCE INDUCTION

A: Fixed neck, laryngospasm, tongue swelling, maximal airway resistance.
B: RR falls to 0 after 45 seconds after Suxamethonium. If preoxygenation adequate then SpO2 falls to 85% over 5 mins. (If inadequate, SpO2 falls to 85% over 4 mins. If none given, SpO2 falls to 85% over 2 mins). SpO2 remains at 85% for 1 minute.
C: HR 100 (Sinus), BP 90/50.
D: Eyes closed (AVPU).

EXPECTED ACTIONS

- Plan A: No more than 3 attempts at direct laryngoscopy with changes to technique and equipment use with each attempt.
  - Call for help after 2nd failed attempt.
  - Announce failed intubation.
- Plan C: Face mask ventilation with...

INTUBATION ATTEMPTS

A: Relax neck stiffness to allow positioning for cricothyroidotomy.
B: Over further 3 mins, SpO2 falls to 70%.
C: See circulatory changes below.
D: Eyes closed (AVPU).

EXPECTED ACTIONS

- Plan D: “Can’t intubate, Can’t Ventilate”
  - Either cannula or surgical cricothyroidotomy
  - Assemble equipment
  - Position patient – maximal neck extension
  - Identify landmarks

CANNULA CRICOXYROIDOTOMY

- Aspirate during cannula insertion
- Secure cannula position
- Assemble Manujet and connect
- If fails → surgical cricoxyroidotomy

SURGICAL CRICOXYROIDOTOMY

- Stab incision through skin
- Blunt dissection
- Insertion of ET tube and cuff inflation
- Ventilation and confirmation of tube position

RESOLUTION

Scenario ends when oxygenation occurs or at discretion of faculty
Anaesthesia

Novice Scenario 4

Anaesthesia

Airway Scenario 3

Version 9 – May 2015

Editor: Dr Andrew Darby Smith
Original Author: Dr P Shanmuha

Penicillin Nil regular Fasted 8 hours

Hb 12.4 WCC 12 Plts 278

No previous GAs

Fit and well usually.

Unwell with hernia and abdominal pain for the last 3-4 days. Vomiting has developed in the last 24 hours (last episode of vomiting 4 hours ago).

Unremarkable

Airway Assessment
Mouth Opening:
MP Score: 1 2 3 4
Jaw: MP 2, mouth opening
Neck >3cm, limited neck ROM.

TEETH
87654321 12345678
87654321 12345678

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

Allergies
Penicillin

Relevant Medication:
Nil regular

VTE Risk: High Low

NBM since Clear Fluids: Fasted 8 hours

Pregnancy: Lactation:

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

Apfel Score

Consented for GA with RSI and local anaesthetic infiltration.
Risks explained: dental damage, sore throat, post-op nausea and vomiting.

No previous GAs

Consented for GA with RSI and local anaesthetic infiltration.
Risks explained: dental damage, sore throat, post-op nausea and vomiting.

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

**Vascular access:**

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### Anaesthesia

- **Airway & Size**
  - □ Mask
  - □ Nasal
  - □ Oral
  - □ LMA
  - □ T-件
  - □ Bain
  - □ Circle + Absorber

- **Tracheal Intubation**
  - □ Oral
  - □ Nasal
  - □ Tracheostomy
  - □ Cuff
  - □ Laryngoscopy Grade
  - □ Bougie
  - □ ILMA
  - □ FOB

### Monitoring

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<th>Monitors</th>
<th>AR</th>
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### Oxygen

- **F₀₂**
- **L/min**

### N₂O / Air / Total Gas Flow

- **%**
- **L/min**

### Iso / Sevo / Des

- **Eᵢ %**
- **Mac**

### Ventilation Mode

- **SV, VC, PCV, Jet etc.**

### Freq

- **/ min**

### Tidal Volume

- **ml**

### Paw

- **cm H₂O**

### Peep

- **cm H₂O**

### Events

- **Event No.**

### Position Of Patient

- **Supine**
- **Prone**
- **L-Lateral**
- **R-Lateral**
- **Lithotomy**
- **DHS Table**
- **Deck Chair**

### Tourniquet (site / times)

- **Site:**
- **On:**
- **Off:**

### DVT Prophylaxis

- □ Heparin
- □ Rivaroxaban
- □ TEDS
- □ IC Boots

### Post Op / recovery instructions:
DEBRIEFING

POINTS FOR FURTHER DISCUSSION:

Technical:
• Difficult Airway protocols
• Procedural techniques
  o Cannula Cricothyroidotomy
  o Manujet/Sanders/Jet ventilation
  o 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 failed intubation protocols
- Recognise problem early and call for help early.
- Local variances to published guidelines (e.g. Equipment)

RELEVANCE TO AREAS OF THE ANAESTHETIC CURRICULUM

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WORKPLACE-BASED ASSESSMENTS

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<td>IAC_C08</td>
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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>
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<td>I found this scenario useful</td>
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<tr>
<td>I understand more about the scenario subject</td>
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<tr>
<td>I have more confidence to deal with this scenario</td>
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<td>The material covered was relevant to me</td>
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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?