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).

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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

- 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
- 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

**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 ETT)
- 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.

**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**

- Ventilation initially possible while awaiting muscle relaxation.

**INTUBATION ATTEMPTS**

A: Fixed neck, tongue swelling, laryngospasm.
B: RR 0. EtCO2 initially 0. SpO2 80% after 5 minutes (sigmoid trend). Maximal airway resistance.
C: See changes below.
D: Eyes closed (AVPU).

**LOW DIFFICULTY**

- SpO2 falls to 70% over further 5 mins.
- 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.

**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.

**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**

- 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.

**RESOLUTION**

When patient is safe to transfer to theatre
# Anaesthesia Record Sheet

**Patient Details**

**Hospital No.:**

**Surname:** Jennifer Roberts

**Forenames:**

**DOB:**

**Sex:** M / F

**Address:**

**Ward/Hospital:**

**Procedure(s) proposed:**
Laparoscopic Cholecystectomy

**CEPOD Class:**

**Version:**

**Date:**

**Time:**

**Signature:**

---

## Anaesthetist's Preoperative Assessment by

**Name:**

**Grade:**

**Date:**

**Time:**

**Signature:**

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### Anaes / Surg history:

- No previous GAs

### Medical history:

- Recurrent cholecystitis and gallstones
- Occasional heartburn
- Increased BMI (36)

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### Relevant Medication:

Occasional Gaviscon

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### O/E

- **Unremarkable**

### Airway Assessment

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

### TEETH

- **Apfel Score**
  - X = missing
  - L = loose
  - B = bridge
  - C = caps/crowns
  - D = damaged

### Relevant Investigations:

- **Biometry:**
  - **Hb:** 11.8
  - **U & E:** NAD
  - **Blood Sugar:** NAD

### Consent:

- **GA**
- **Sedation**
- **Epidural**
- **Spinal**
- **Regional**
- **Suppository**

### Other:

Abdo USS - Gallstones

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### Notes / Discussion / Technique proposed:

- Consented for GA with intubation.

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

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### For attention of ward staff:

(further investigations, fasting, continue/omit current medication, etc.)
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 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.

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FURTHER RESOURCES


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

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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)
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?

Why didn’t it go well?

How could the scenario be improved for future participants?