

GUIDELINES FOR AWAKE FIBREOPTIC INTUBATION

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GUIDELINES FOR AWAKE FIBROPTIC INTUBATION

A calm, methodical and 'unrushed' technique will aid patient cooperation

INDICATIONS

1. Known difficult airway
2. Suspected difficult airway in the presence of complicating factors:
 - Risk of aspiration
 - Inability to access precricoid / pretracheal region
 - Contraindication to suxamethonium / inhalational agents

CONTRAINDICATIONS

1. Patient refusal or uncooperative
2. Blood in the airway
3. Allergy to agents used
4. Caution with periglottic masses / stridulous patients - may precipitate airway obstruction
5. Nasal route may be inappropriate in coagulopathy or pregnancy (see appendix 1)

CAUTION

- 1 Cervical spine instability / raised ICP/ penetrating eye injury

1. Equipment

- Use a trolley that will go low and/or step for intubator (if short)
- Full monitoring (capnography mandatory)
- Green O₂ tubing and second oxygen supply - normally O₂ cylinder with rotameter is used
- Nasal sponge catheter for O₂ administration (**Photo 1**)
- Kidney dish and tissues
- Intubating fibrescope / battery light source / camera head and C-Mac – for further details on setting up use the laminated guidance attached to the C-Mac
- Epidural catheter inserted into the scope suction port - the end can be trimmed to remove side holes (**Photo 2**)
- Endotracheal tube (ETT) - preformed nasal tube (NETT) or reinforced ETT may be used. For NETT use size 6.0 for females and 6.5 for males. *If using NETT cut approximately 5cm off the end so that sufficient scope extends beyond the NETT* (**Photo 3**)
- Mount the (N)ETT on the lubricated scope (**Photo 4**)
- MAD device (mucosal atomisation device)

2. Drugs

- Otrivine nasal spray (optional)
- Glycopyrrolate
- Midazolam
- Remifentanil
- Co-phenylcaine spray (Lidocaine 5% and phenylephrine 5mg/ml)
- 4% and 10% lidocaine
- *Suggested safe limit is upto 9mg/kg lidocaine for topical use*

Stage 1 – Preparation

- Decide on sitting or supine position for AFOI - some patients may only tolerate sitting so the intubator should face the patient in these cases
- Monitoring including capnography
- Topical nasal vasoconstrictor if available (e.g. Otrivine™)
- Intravenous access and glycopyrrolate 4 mcg/kg i.v.
- Wait a few minutes for above to take effect (you may choose to start your sedation now – see below)

Key Points

Consider AFOI in four distinct stages:

Stage 1 Topical anaesthesia of nose and sedation

Stage 2 Topical airway anaesthesia and endoscopy into trachea

Stage 3 Passing ETT through nose

Stage 4 Passing ETT into trachea

Stage 2 - Topical anaesthesia

Nose

- Patient sitting and holding kidney dish and tissues. *Patient can swallow or spit out excess local anaesthetic*
- Incremental application of co-phenylcaine spray via spray device or MAD. You may wish to concentrate this into a nostril selected by nasoendoscopy (which you can select after about 0.5ml spray into each nostril)
- 4 puffs of 10% lidocaine to selected nostril

Sedation

- O₂ 2l/min via nasal sponge to other nostril prior to sedation

Key Points

If you wish to use sedation (if not contraindicated) avoiding oversedation is essential to safety and success of procedure

The patient will need to follow verbal commands as this will be important later in the procedure e.g. cough, deep breaths, protrude tongue, swallow

- Midazolam 1-3mg (use patience and small increments)
- Remifentanil TCI 1-2ng/ml

Stage 3 - Airway endoscopy to trachea

- The naso/oropharynx is generally adequately anaesthetised by the topical nasal lidocaine

Key Points

To improve the view during passage of the endoscope it may help to ask the patient to take deep breaths, cough, protrude tongue or tilt head back

Oral suction may also be possible to remove excessive or tenacious secretions

If patient experiences discomfort during nasendoscopy stop, give additional lidocaine and wait 30 seconds

- Perform nasal and pharyngeal endoscopy until epiglottis/larynx visualized

Topical anaesthesia of epiglottis/larynx

- Advance epidural catheter a short distance from scope and spray 4% lidocaine onto epiglottis/larynx. *Using smaller volumes a greater number of times is more comfortable for the patient. Pause after each spray to allow any coughing to settle*

Key Points

If persistent coughing is problematic at this stage consider the following:
Advance the epidural catheter rather than the scope and spray local anaesthetic onto epiglottis/glottis
A transcrioid injection of local anaesthetic can be used

- Next advance epidural catheter into trachea, spray 4% lidocaine, and pause again
- Advance scope adequate distance into trachea, further 4% lidocaine may be necessary

Stage 4 - Passing ETT through nose

- Ensure scope tip is near the carina then advance ETT through nose into pharynx

Key Points

The patient may find this stimulating

Ensure NETT is adequately lubricated. We suggest a blob of aquagel on the patient's nose prior to NETT insertion into the nostril (otherwise excessive lubrication up the NETT makes advancing the NETT tricky)

Apply gentle continuous pressure (avoid excessive twisting) until ETT advances into nasopharynx

If necessary give further 10% lidocaine sprays to selected nostril

Stage 5 - Passing ETT into trachea

- Advance ETT through cords into trachea. *An assistant can be helpful by holding the scope whilst you advance the ETT*

Key Points

If you experience difficulty passing ETT into trachea the following may be useful

Asking the patient to take deep breathes ± flexing the neck can help as can anticlockwise rotation of ETT

- Confirm endotracheal intubation i.e. carina and tracheal rings clearly visualised beyond tip of ETT. *It is possible to flip the 'scope out of the trachea into the oesophagus during railroading*
- Stabilise ETT at nostril as scope is withdrawn under continuous direct vision. *ETT misplacement can occur at this stage*
- **Connect to breathing system with *capnography* and ensure there is a normal capnography trace prior to induction of general anaesthesia**

- You may wish to inflate the cuff after induction in a patient not at risk of aspiration to minimize coughing

Appendix 1

Oral AFOI

Gargle with lidocaine gel

Spray oropharynx with 1% to 4% lidocaine, especially tonsillar pillars if possible (starting with weaker lidocaine will reduce stinging)

Ask patient to protrude tongue – assistant to gently hold tongue with green swab

Insert Berman airway (**Photo 6**)

If Berman airway not tolerated a simple bite guard may be helpful but will need to be left in-situ after intubation

Photos for AFOI guidelines



Photo 1 Nasal Sponge catheter



Photo 2 – Trimmed epidural catheter



Photo 3 – Cut NETT



Photo 4 – NETT mounted on 'scope



Photo 5 - Moffatiser™ or 20G cannula (\pm 3 way tap)



Photo 6 – Berman Airway